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Policy Issues and Strategies Affecting Public Libraries In the National Networked Environment: Setting Agendas and Extending Research

A Report Submitted To:

The National Commission on Libraries and Information Science
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EXECUTIVE SUMMARY

Public libraries in the United States continue to experience rapid change as the networked information environment continues to evolve. New software applications, faster and better technology, and changing patterns of access to and use of networks to provide information services to users all combine for public librarians, trustees, and local communities to re-think, re-evaluate, and review plans for how best to operate public libraries in this context. In addition to the rapid rate of change in the networked environment, the U.S. federal information policy environment also continues to change and evolve – thus having a significant impact on how public libraries interact with the networked environment.

Such rapid change requires constant assessment and review by the public library community; policy makers at the federal, state, and local levels; and by researchers and policy analysts. In a relatively brief time period, 1994-2000, public libraries have reached 96% connectivity rates with Internet services. Connectivity in and of itself, therefore, is no longer an acceptable goal for public libraries. To be successful in the evolving networked environment public libraries will need to set agendas related to network-based services and information policy, they will need to enhance and support additional research related to network services and policy, and they will need to implement these agendas.

The U.S. National Commission on Libraries and Information Science (NCLIS) has sponsored and continues to support research in the area of Internet connectivity in public libraries since 1994. These include national surveys of public libraries and the Internet such as:

- *Public Libraries and the Internet: Study Results, Issues, and Recommendations* (McClure, Bertot, and Zweizig, 1994);
- *Internet Costs and Cost Models for Public Libraries. Final Report* (McClure, Bertot, and Beachboard, 1995);
- *The 1996 National Survey of Public Libraries and the Internet: Progress and Issues Final Report* (McClure, Bertot, and Zweizig, 1996);
- *The 1997 National Survey of U.S. Public Libraries and the Internet: Final Report* (Bertot, McClure, and Fletcher, 1997);
- *Moving Toward More Effective Public Internet Access: The 1998 National Survey of Public Library Outlet Internet Connectivity* (Bertot and McClure, 1999); and
- *Public Libraries and the Internet 2000 Study: Summary of Findings and Data Table* (Bertot and McClure, 2000).

The most recent policy analysis done for NCLIS in this area is a report prepared in 1997, *Policy Issues & Strategies Affecting Public Libraries in the National Networked Environment: Moving Beyond Connectivity* (Bertot and McClure, 1997). The findings of the 2000 study reflected significant strides in connectivity, funding sources, and services to support technology use by library visitors. NCLIS contracted with the authors in 2001 to produce a report to inform staff and Commissioners on how best to proceed with research in this area.

More specifically, NCLIS asked the authors to address the following key tasks:

1. Assess Internet connectivity in public libraries, using the most recent research sponsored by NCLIS, [Public Libraries and the Internet 2000: Summary of Findings and Data Tables](#), by conducting additional analysis of data collected in that study (Bertot and McClure, 2000).
2. Review national policy issues and approaches for addressing the use and applications of technology in libraries, including infrastructure developments, funding, and impacts.
3. Offer recommendations for future research and analysis broadly related to libraries (especially public libraries), the Internet, and networked services.

The authors began work on the study in March 2001 and completed the final report in December 2001.

As part of the study, the authors:

- Reviewed and assessed relevant studies, reports, and papers on the three topics described above;
- Conducted supplemental analysis of data from the 2000 public libraries and the Internet study;
- Conducted a descriptive review of key federal information policies and recent initiatives that may affect the three key topics addressed in the study; and
- Conducted a number of interviews with selected key experts knowledgeable about work being done in the broad area of libraries and the Internet. These experts included federal policy makers and those knowledgeable about policy issues.

Together, these data collection, research, and analysis activities provide the basis for the issues and recommendations identified in this report.

Public Libraries and the Internet

During May and June 2000, the authors conducted a national survey of public library Internet connectivity. The study used a weighted sample of public library outlets based on two outlet characteristics: 1) poverty (less than 20%, 20%-40%, and greater than 40%), and 2) metropolitan status (urban, suburban, and rural). The metropolitan status codes exist in the Federal State Cooperative System (FSCS) annual public library data collection system, whereas the poverty determination is a result of geocoding the outlets by physical location and census poverty data.¹ In all, it was possible to geocode 16,004 public library outlets in March 2000. Thus, all results are based on the 16,004 geocoded outlets.

Appendix A of this report contains the detailed report of data tables and methodology of the 2000 public library Internet study.

New analysis of the 2000 survey data, however, indicates a number of key findings:

¹ Specific information on the geocoding process is found in Appendix C of U.S. National Commission on Libraries and Information Science. (1998). *Moving toward more effective public Internet access: The 1998 national survey of public library outlet Internet connectivity*. Washington, D.C.: National Commission on Libraries and Information Science. Also, see Jue et al. (1999). Using Libraries to Provide Technology Access for Individuals in Poverty: A Nationwide Analysis of Library Market Areas Using a Geographic Information System. *Library and Information Science Research*, 21(3): 299-326.

- Public library outlets are connected to the Internet and offer public access Internet services (range of 88.7% to 100.0% for connectivity and range of 84.9% to 100% for public access); and
 - Nearly all outlets with Internet connectivity also provide public access Internet services, with the least public access Internet services in the Rockies states (Tables 3-2 and 3-3).
-
- As the population of legal service area decreases, in general, so too does the speed of connectivity. This is particularly noticeable for library outlets that serve population of legal service areas of below 25,000, and
 - Library outlets in the New England and Plains states are less likely to have connectivity of greater than 56kbps than are library outlets in the rest of the nation. Indeed library outlets in those states have the highest percentage of 56kbps dial-up connections, with 25.0% in New England states and 39.4% in Plains states (Tables 3-4 and 3-5).
-
- Some regions rely less on E-rate than others – for example, only 21.0% of New England library outlets used E-rate discounts to fund their library’s Internet infrastructure. The next lowest percentage for E-rate use is the Plains states with 36.1% and Greatlakes states with 41.5%.
 - New England states indicate a lower rate of federal funds to support their Internet infrastructure – 3.9% – than other regions. This, however, may be a result of respondents not indicating their receipt of LSTA grants in this category.
 - Certain regions indicate substantial support from special grants for their Internet infrastructure. These correspond, for the most part, to Gates states. For example, 54.0% of Southwest libraries indicate Internet infrastructure support from special grants, followed by 49.8% of Southeast libraries and 33.3% of Rockies libraries (Table 3-6).
-
- A minimum of 70.5% of public library outlets offer user training above a population of legal service area of 25,000 (see Table 3-7).
 - Only 56.4%, however, of public library outlets below a population of legal service area of 25,000 offer user training.
 - With regards to region, user training in outlets ranges from a low of 44.3% in Plains states library outlets to a high of 71.3% in Middle Atlantic states library outlets (Tables 3-7 and 3-8).
-
- Public library outlets offer patrons a variety of online database services. This service, however, tends to decrease as the population of legal service area of the library outlet decreases.
 - For example, 95.3% of libraries with population of legal service areas greater than 500,000 provide online database services on all their workstations, as compared to only 56.0% of outlets with population of legal service areas of less than 25,000.
 - Moreover, 71.4% of libraries with population of legal service areas greater than 500,000 provide online database services to users remotely as compared to only 29.9% of outlets with population of legal service areas of less than 25,000 (Table 3-9).

- Overall, library outlets in the Greatlakes, Middle Atlantic, Rockies, and Southeast offer more access to online database services (range of 63.7% to 70.0% for access on all public access workstations) as compared to library outlets in New England, the Plains, the Southwest, and West (range of 45.9% to 54.0% for access on all public access workstations) (Table 3-10).
-
- The provision of special hardware and/or software for individuals with disabilities for public access Internet services varies within public library outlets.
 - Public library outlets that serve population of legal service areas of 100,000 or greater tend to provide more access to hardware and/or software for persons with disabilities (combined range of 15.3% to 47.3% for all/some workstations) than do public library outlets that serve population of legal service areas of less than 100,000 (combined range of 25.6% to 29.0% for all/some workstations). The notable exception is library outlets that serve population of legal service areas of greater than 500,000, with 15.3% (combined all/some workstation).
 - Regionally, library outlets in the Southeast and West are more likely to provide special hardware and/or software for individuals with disabilities for public access Internet services, with 43.8% and 30.1% respectively (combined all/some workstation) (Tables 3-11 and 3-12).
-
- Finally, some public library outlets do block and/or filter Internet content.
 - Overall, library outlets that serve population of legal service areas of less than 25,000 are less likely to block/filter Internet content (20.1% combined all/some workstation) than are library outlets that serve population of legal service areas of greater than 25,000 (combined range of 31.6% to 32.1% for all/some workstations).
 - Library outlets in the Southeast and Southwest are less likely to block/filter Internet content (33.5% and 37.5% respectively combined range for all/some workstations) as compared to library outlets in other regions of the nation (combined range of 8.9% to 28.9% for all/some workstations) (Tables 3-13 and 3-14).

These findings indicate a range of public library Internet services as well as differences in the provision of those services by population of legal service area and region of the nation. Such differences have implications for the library services to which library patrons have access and, subsequently, the policy environment that supports public libraries in the provision of their network-based services. Moreover, these findings suggest a number of potential roles for the National Commission on Libraries and Information Science to advise policy makers, researchers, and professionals in the shaping of public library issues, strategies, and policy to guide the future development of public library networked services.

Research Strategies and Issues

There are a number of key research issues and strategies that require attention if the role of libraries, and especially public libraries in the evolving networked environment are to be better understood, financially supported, and integrated into library services to support a range of possible national goals and objectives. The topics discussed here are based, in part, on the

material and background information provided in Chapters 1-4. Overall, it is important and necessary for a nationally coordinated effort to support research broadly related to libraries and library services.

Issues Related to Research and Data Collection Activities

This study identified a number of data collection activities and research needs for policy makers, the library profession, and other communities. Initial areas of research and data needs include:

- Issues related to the digital divide. While the National Telecommunications and Information Administration (NTIA) has conducted a number of studies related to the digital divide that provide key data regarding home computer technology and Internet access along a number of demographic variables (e.g., income, race, gender, urban/rural, and persons with disabilities), there is a need to further explore issues regarding the digital divide.
- Moving beyond connectivity data. Although the Public Library Internet studies provided first time, longitudinal, and important data regarding public library Internet connectivity, they focused primarily on the Internet connectivity infrastructure of public libraries – Internet connection, workstations, bandwidth, and funding issues. With the 2000 study finding that 95.7% of public libraries have an Internet connection, it is time to move beyond public library connectivity to Internet-based library services – e.g., training, services to special populations (e.g., seniors, persons with disabilities, children, Native Americans), filtering/content blocking, outcomes, and service quality, to name a few. As with the leadership NCLIS demonstrated by conducting the first studies of public library Internet connectivity, the Commission has an opportunity to establish leadership in the study of critical areas of Internet involvement and use in public libraries.
- Broadening the scope of Internet studies beyond libraries. There are a number of community technology centers – boys and girls clubs, community centers, senior centers, for example – that provide access to network-based services such as training, computer technology, and Internet connectivity. It is important to study the role(s) that such centers play in the connectivity mosaic of users, the relationship of libraries in the connectivity of users, and the interrelationship between the library and other community-based organizations in providing access to network-based resources and services to users.
- Conducting longitudinal studies where possible. While it is important to collect one-time data that meet the needs of particular research interest or policy issues, it is also important to provide a longitudinal perspective regarding research areas that inform policy makers, researchers, and others as to the changes over time in connectivity-related issues. Such data can inform various parties about trends, key issues, and evolving services over time.
- Coordinating the data collection activities of various regular and on-going library (and other, where possible) surveys. NCLIS, in its relationship with the library statistics program managed by the NCES/U.S. DOE, plays a critical role in a number of library-related data collection efforts – academic, public, and school media. To the extent possible, there is a need to create a core set of survey questions that cut across the various survey instruments so as to compare various connectivity and other data of interest across library types and communities.
- Need for a national geo-based database of public library statistics and other information. Currently, there is no comprehensive and integrated national database of public library

statistics and other information that would be important to describe and analyze a number of U.S. public library attributes. A nationwide inventory of data related to public library outlets and administrative entities has existed for several years through the Federal-State Cooperative System (FSCS) and National Center for Education Statistics, U.S. Department of Education (NCES/U.S. DOE). But the inventory cannot be utilized for any substantive decision making purpose at the local, regional, or national levels as this inventory is not tied to any usable external data (e.g., socioeconomic, population projections, relevant library related research, geo-based data, etc.).

The above indicate several key roles that NCLIS can play in the development, continuation, and maintenance of a broad ranging research agenda. Such endeavors would provide the Commission with important and valuable data to inform policy makers, researchers, and librarians along a number of topics.

Issues Related to Education and Training

To a large degree issues related to education and training of information professionals have not received adequate attention. While schools of library and information studies (as well as other programs) continue to evolve in their training of professionals to work in the networked environment, there are significant numbers of staff currently working in libraries that have received little to no ongoing instruction related to deploying and using technology; assisting users in networked and telecommunications services; integrating networked-based services with traditional services; planning and evaluating networked services; and others.

At issue is:

- Who or what is responsible for ongoing training and education of library staff to stay current with networked services and information technology developments?
- Where are resources to support such programs?
- How can a national program of training and education be developed such that every library does not need to re-create training programs for its staff?
- How can national training efforts be deployed such that training does not need to be localized in terms of delivery mechanisms?

The issues of education and training raised in this report have less to do with the training of new information professionals at the graduate level and more to do with how to keep existing staff versed in technology and network developments and applications. The Commission may wish to consider if it has a role to play in assessing educational and training needs in this area and the degree to which strategies can be developed to address these needs.

Issues and Strategies Related to Communication, Coordination, and Dissemination

The policy analysis and review of research activities indicate that there are a number of areas in which there is a need to coordinate, exchange findings, and review and develop policy recommendations, strategies, and approaches. These include the:

- Holding of issue/topical hearings. In the past, NCLIS has conducted a number of policy hearings on a wide range of topics. These include hearings on Kids and the Internet, ADA, status of schools and school libraries, and others, all of which resulted in overall key issue and stakeholder issue identification, testimony, research needs identification, and/or policy recommendations. There is a need to convene such a hearing on the policy research needs for library Internet-related activities.
- Holding of regional “town hall” meetings. Such meetings would enable the identification of key policy issues related to library Internet use and involvement facing communities across the country. Rather than formal hearings, such meetings would present a forum through which key stakeholder communities, as well as the general public, could engage in an exchange of issues, ideas, and considerations with the library, policy making, and other constituencies.
- Conducting of regular policy forums. NCLIS has the legislated mandate to hold forums and bring various constituency groups together on information policy-related issues. Such forums, targeted to specific topics, could serve as a means through which to bring together key stakeholder groups (e.g., the American Library Association, community-based organizations, policy making representatives) to discuss policy issues, generate policy recommendations, and develop policy implementation action plans. Sample topics might include the Digital Divide, ADA-related Internet access issues, and E-government proposals related to digital government information activities (as per the proposed E-Government Act of 2001 (S. 803).
- Conducting research and data forums. A number of different agencies and organizations – Census, National Telecommunications and Information Administration (NTIA), Department of Education, Schools and Libraries Division, Institute of Museum and Library Services, Federal Communications Commission, NCLIS, and the American Library Association, to name a few – have data and research needs on a number of common topics. These topics include the Digital Divide, digital literacy, Internet connectivity by community technology centers (e.g., public libraries, community centers), broadband, and technology use and needs by special populations (e.g., persons with disabilities). Bringing these groups together, though they may have differing uses for research findings and data, to collaborate, coordinate, and pool resources to conduct studies will result in a select number of focused, well funded, and thorough studies that can serve to inform policy makers, agencies, the library community, and others on a wide range of topics and issues.
- Developing various publications/products and a multi-faceted method for distributing research findings and data to a wide range of groups that include policy makers, library organizations, and agencies. These products, some print, some electronic, and of various types (e.g., reports, brochures, bookmarks, broadsides, etc.) can serve a number of purposes that include the education of policy makers and others regarding a particular topic, summary study findings, policy awareness, and key issue identification. Such products can demonstrate the involvement of NCLIS with a number of policy- and research-related activities.

As evidenced, there are a number of communication, coordination, and dissemination activities in which the Commission can play a central role. The Commission will need to consider which of the above activities best fit its resources, goals, and objectives.

Need to Clarify National Goals for Public Libraries

A key message in the 1987 publication, *Planning and Role Setting for Public Libraries* (Chicago: American Library Association) was that public libraries cannot be all things to all people all the time. In fact, public libraries continue to find themselves in the position that the local community and federal programs expect libraries to be all things to all people all the time. The limited funding available to most public libraries requires that priorities be set and that libraries support only the “most important” services and activities.

What *are* the national goals for public libraries:

- Are public libraries expected to be a national mechanism in the fight on illiteracy?
- Are public libraries expected to be the doorway to E-government services for those without equipment and training elsewhere?
- Are public libraries to serve as local training centers for those to learn how best to use the Internet and the networked environment as suggested in the E-Government Act of 2001.
- Should they also serve as an after school resource center where national educational priorities and goals can be better supported?

While state and local determination of public library roles and goals is important, equally important is some clarification as to national public library roles and goals. The sense that public libraries provide national benefits to society also suggests that some better clarification of national goals and priorities for public libraries may also be necessary. To some degree public libraries receive “unfunded mandates” to support a range of societal goals – such as literacy programs. Should there be national goals for public libraries, there is a need to make those goals explicit and engage in activities and resource provision that supports those goals.

Establish an Effective Library Presence in the Development of Information Policy

A key activity of the Commission is to provide advice to Congress and the President regarding libraries and information services in this country. But the library presence in national information policy debates is limited and has nowhere near the resource support that other interest groups such as has the telecommunications industry. Thus, the Commission may wish to consider possible mechanisms by which the library community can have a greater impact and a more visible presence in the development of information policy.

A number of the communication strategies offered earlier in this report can play an important role in developing such a presence. But too often there are conflicting points of view among the various library groups as to a particular policy position. Key stakeholders include ALA and its various member groups, a range of other national and state library associations, IMLS, COSLA, ULC and others. For the library community to have a better impact on policy development some type of coordinating mechanism may be necessary, because policy makers respond better to consensus. However, that doesn’t mean there aren’t real differences between various groups. How to resolve is a vital question.

In addition to coordinating mechanisms, there needs to be a clear, coherent set of policy recommendations as to what, specifically, the Commission (and others) recommend be done

about individual policy issues. Such recommendations require study, data, analysis, input from other stakeholder groups, etc. Given the limited resources and staff of the Commission, choices and priorities may need to be made as to which policy areas are most important for the Commission and which policy areas best lend themselves to consensus building among other interested parties in the library community.

Develop New Measures to Describe the Impact and Use of Networked Services in Public Libraries

To some extent, the federal government lacks a coordinated and coherent approach for policy analysis, research, and statistics related to library and information services. Library program funding for collecting national library statistics largely falls under the Department of Education through the National Center for Education Statistics (NCES), administered by NCLIS.

The *Museum and Library Services Act of 1996* moved research and related programs to the Institute of Museum and Library Services. The role of the Department of Education regarding national data collection efforts and how it interacts with NCLIS and IMLS is not clear. The original wording to the act passed some of the responsibility of guidance to NCLIS, but the future of this agency is not clear since the President's FY2002 budget did not recommend funding. So the responsibility of library program evaluation and collecting national statistics at this time is unclear.

Need for a National Conference

Information science researchers, policy makers, and others to explore a range of topics related to research needs regarding federal information policy issues. More specifically, such a conference could:

- Identify existing knowledge and data sources related to current and future information policy issues that affect the profession and the citizens;
- Discuss and describe specific information and research needs necessary to address the various information policy issues; and
- Consider possible strategies to establish a mechanism for conducting ongoing policy research, for informing the information professions on the status and impact of selected information policy issues, and for providing a clearinghouse of information and data for use in debating these issues.

Overall, the purpose of the conference would be to determine how the information professionals and related organizations can best establish an ongoing formal means (and presence) to conduct policy research and engage successfully in national information policy debates. Other outcomes would include proposals for establishing some formal structures and programs to conduct information policy research and a listing of key information policy topics/issues requiring research attention.

Benefits of a National Conference

The library and information professions regularly find themselves unable to respond quickly and accurately to both threats and opportunities in terms of a range of policy issues broadly

related to library/information policy. A number of professional associations including the American Library Association, the Association of Research Libraries, the American Society for Information and Technology, and the American Association of Law Librarians (to name a few) either have offices or committees that follow selected policy areas. But these efforts are rarely coordinated and in most instances there is inadequate research available to support particular positions.

The proposed conference would be a step in recent times to develop a strategy to better initiate and respond to federal library/information policy initiatives. It would promote improved coordination and cooperation among the various stakeholders in assessing and responding to these policy initiatives. And perhaps most importantly, the conference might provide a research base by which ongoing research and policy analysis can be in place, providing information professionals with data that inform various policy debates, issues, threats, and opportunities affecting the library/information professions. The key issue with this topic is how best to coordinate, research, and better understand the range of the information policy issues that affect libraries and related information centers.

Enhancing Library Services in the Networked Environment

This report identifies a range of topics, policy issues, data, findings, and recommendations that the Commission may wish to consider as it reviews and proposes policy and strategies to enhance library services in the networked environment. As suggested throughout the report, libraries have a number of challenges and opportunities to consider as they make the transition into the networked environment. It is possible to facilitate this transition with:

- A federal information policy environment that recognizes the importance of and supports the multiple roles that libraries play in the American society;
- Better coordination across federal agencies in terms of their policies, program goals, and procedures for implementing those programs (e.g., E-rate) – to better support libraries in general and public libraries in particular;
- The maintenance of a timely and accurate national database – or collection of databases – of information (more than just statistics) that describes public library services and resources and can serve as a base from which to conduct meaningful and ongoing analysis and evaluation of library activities and services;
- Enhanced national programs such as E-rate, LSTA, ESEA, the Depository Library Program, etc. that provide direct support to libraries to assist them promote E-government initiatives at the federal, state, and local levels; and
- The development of valid, reliable, and standardized statistics and measures that describe use, users, uses, outcomes, and quality of library services in the networked environment.

The last strategy is especially important as the Commission cannot offer accurate and timely policy advice to Congress and the President without useful descriptive data.

These suggestions, of course, are only a beginning – other strategies and issues appear throughout this report. Clearly, the Commission cannot attack all the policy issues and opportunities to enhance libraries offered here. The Commission can, however, identify a strategic initiative and marshal its limited resources on specific priorities over the next three

years. Agreement on a set of strategic initiatives will allow the Commission to tackle those issues and opportunities that appear to have the greatest payback to improve libraries so that libraries can better meet the needs of the American public as the networked environment continues to grow and evolve.

CHAPTER 1: INTRODUCTION

Public libraries in the United States continue to experience rapid change as the networked information environment continues to evolve. New software applications, faster and better technology, and changing patterns of access to and use of networks to provide information services to users all combine for public librarians, trustees, and local communities to re-think, re-evaluate, and review plans for how best to operate public libraries in this context. In addition to the rapid rate of change in the networked environment, the U.S. federal information policy environment also continues to change and evolve – thus having a significant impact on how public libraries interact with the networked environment.

Such rapid change requires constant assessment and review by the public library community; policy makers at the federal, state, and local levels; and by researchers and policy analysts. In a relatively brief time period, 1994-2000, public libraries have reached 96% connectivity rates with Internet services. Connectivity in and of itself, therefore, is no longer an acceptable goal for public libraries. To be successful in the evolving networked environment public libraries will need to set agendas related to network-based services and information policy, they will need to enhance and support additional research related to network services and policy, and they will need to implement these agendas.

BACKGROUND

The U.S. National Commission on Libraries and Information Science (NCLIS) has sponsored and continues to support research in the area of Internet connectivity in public libraries since 1994. These include national surveys of public libraries and the Internet such as:

- *Public Libraries and the Internet: Study Results, Issues, and Recommendations* (McClure, Bertot, and Zweizig, 1994);
- *Internet Costs and Cost Models for Public Libraries. Final Report* (McClure, Bertot, and Beachboard, 1995);
- *The 1996 National Survey of Public Libraries and the Internet: Progress and Issues Final Report* (McClure, Bertot, and Zweizig, 1996);
- *The 1997 National Survey of U.S. Public Libraries and the Internet: Final Report* (Bertot, McClure, and Fletcher, 1997);
- *Moving Toward More Effective Public Internet Access: The 1998 National Survey of Public Library Outlet Internet Connectivity* (Bertot and McClure, 1999); and
- *Public Libraries and the Internet 2000 Study: Summary of Findings and Data Table* (Bertot and McClure, 2001).

The most recent policy analysis done for NCLIS in this area is a report prepared in 1997, *Policy Issues & Strategies Affecting Public Libraries in the National Networked Environment: Moving Beyond Connectivity* (Bertot and McClure, 1997). The findings of the 2000 study reflected significant strides in connectivity, funding sources, and services to support technology use by library visitors. NCLIS contracted with the authors in 2001 to produce a report to inform staff and Commissioners on how best to proceed with research in this area.

More specifically, NCLIS asked the authors to address the following key tasks:

- Assess Internet connectivity in public libraries, using the most recent research sponsored by NCLIS, *Public Libraries and the Internet 2000: Summary of Findings and Data Tables*, by conducting additional analysis of data collected in that study (Bertot and McClure, 2000).
- Review national policy issues and approaches for addressing the use and applications of technology in libraries, including infrastructure developments, funding, and impacts.
- Offer recommendations for future research and analysis broadly related to libraries (especially public libraries), the Internet, and networked services.

The authors began work on the study in March 2001 and completed the final report in December 2001.

As part of the study, the authors:

- Reviewed and assessed relevant studies, reports, and papers on the three topics described above;
- Conducted supplemental analysis of data from the 2000 public libraries and the Internet study;
- Conducted a descriptive review of key federal information policies and recent initiatives that may affect the three key topics addressed in the study; and
- Conducted a number of interviews with selected key experts knowledgeable about work being done in the broad area of libraries and the Internet. These experts included federal policy makers and those knowledgeable about policy issues.

Together, these data collection, research, and analysis activities provide the basis for the issues and recommendations identified in this report.

KEY TERMS

A working definition of library networked services is *those electronic information resources and/or services procured by the library that users access electronically via a computing network 1) from on-site in the library, 2) remote to the library, but from another library/or branch facility, or 3) remote from the library, from home or office*. Examples of networked resources include local, regional, or statewide library hosted or authored web sites or library-licensed databases (e.g., InfoTrac, EBSCOHost, JSTOR, Project Muse). Examples of networked services include:

- Text and numerical databases, electronic journals and books;
- Email, listservs, online reference/assistance;
- Training in the use of these resources and services;
- Request of services via online forms (i.e., interlibrary loans); and
- Interactive real time services such as digital reference services.

The range and types of services accessible through and supported by networks will continue to evolve as network technology changes.

Information policy is a term used to describe a set of interrelated principles, laws, guidelines, rules and regulations, directives, procedures, judgments, interpretations, and practices that guide the creation, management, access, use, preservation, and disposal (more commonly regarded as the information lifecycle) of information. Information policy can be set at a national level, e.g., by the U.S. federal government; by state and local governments, and by other agencies and institutions, e.g., private companies or agencies within governmental units. No single authority or corpus of statutory or administrative law describes or coordinates information policy in either the United States or in other countries (McClure, 1999).

An information policy instrument is a written law, guideline, regulation, or other official statement that describes how information will be collected, managed, protected, accessed, disseminated, and used. In the United States, a number of key policy instruments shape federal information policies, including:

- The Freedom of Information Act (5 *USC* 552), which outlines procedures by which individuals can request government information;
- The Privacy Act (5 *USC* 552a), which protects individuals from unwarranted government use of personal information and outlines procedures by which individuals can obtain information that the government may maintain about them;
- The U.S. Government Printing Office's Depository Library Program (44 *USC* 19) and federal printing laws (44 *USC* 17), which ensure that a basic collection of government information is made available to the public through selected libraries; and
- The Copyright Act (17 *USC* 101), which provides certain protections for authors of literary and other types of work and sets the stage for determining intellectual property rights.

Many other information policy instruments exist, and these are offered as illustrative of a broad set of instruments that affect information management in general and website development and operations in particular.

STUDY PURPOSE AND OBJECTIVES

The overall purpose of this study is to provide NCLIS commissioners and staff with a review of recent research, policies, and issues related to public libraries and networked services. More specifically, the study has the following objectives:

- Identify and describe recent research and federal policy initiatives broadly related to public libraries specifically and libraries more generally regarding networked information services (Chapter 2);

- Conduct supplemental analysis on data collected as part of the 2000 study with particular attention to issues of connectivity and services provision (Chapter 3);
- Analyze selected available data describing libraries and the Internet to determine possible trends and strengths and weaknesses of these datasets (Chapter 4); and
- Offer specific recommendations for research broadly related to libraries and the Internet and the provision of networked services by libraries (Chapter 5).

Overall, the report intends to provide a beginning point for additional discussion and debate as to the current and future roles of libraries, especially public libraries, in the evolving networked environment. The report also intends to provide a basis to focus on how best libraries might participate in the networked environment to support national priorities and goals.

SOME CAVEATS

The potential scope of a study such as this one is overwhelming. Thus, the study reviews and discusses selected topics, research, and policy issues. In selecting the topics, research, and policy issues for discussion the authors assessed the potential impact, cost, importance, and effect on the public. Some readers may not agree with the topics, research, and policy issues discussed in this report. Indeed, it is not possible to cover all topics, research, and policy in a brief report such as this. The study draws heavily on the experience and previous research of the authors in this area. Nonetheless, the authors view this study as a first step in developing and extending a national debate on the appropriate roles for libraries in the networked environment – and how federal policy can support such roles.

SETTING AGENDAS AND ENHANCING RESEARCH

The study suggests that a joint agenda among the library communities (i.e., libraries and library associations) as well as local, state, and federal governments, is necessary for libraries to maximize their impact and effectiveness in providing access to and services in the networked environment. While there are multiple library programs underway, a range of policy initiatives under consideration, and library experimentation with a number of interesting network-based programs and services, there appears to be a lack of focus and coordination in a number of areas. There is a need for a national agenda that integrates these various efforts into a coherent whole.

Moreover, there are few longitudinal datasets available to describe libraries' use and users of Internet services. Much of the research is programmatic or topic-based and, thus, not possible to track or compare over the years. Except for some ongoing support by the Institute for Museum and Library Services (IMLS) in the area of public libraries and the Internet, and ad-hoc funding by NCLIS and the American Library Association, there has been limited ongoing funding, resources, and support for research related to public libraries and the Internet. As the United States enters the new millennium, a public debate and discussion on the roles of libraries in the networked environment, how federal governmental policies can support these roles, and how state and local governments can directly participate and/or partner with libraries needs to occur.

Such an agenda can then help set a course for maximizing the role, impact, and effectiveness of libraries in the networked environment.

CHAPTER 2: SELECTED INFORMATION POLICY ISSUES AFFECTING PUBLIC LIBRARIES

This chapter of the report provides an overview of selected U.S. information policy issues that affect public libraries – and to some extent all types of libraries. The policy issues included in this section are not comprehensive. Rather they were selected for discussion based on the following criteria:

- Potential impact on public access to information;
- Degree to which the issue may affect public library funding;
- Effect on the information technology infrastructure for public libraries;
- Possible need to revise existing federal information policy; and
- Degree to which the issue may affect local and national management/organization of libraries.

Thus, the purpose of this chapter is to provide a brief overview of selected policy issues that may assist the library community, policy makers, government officials, and others, better determine how best to shape this evolving policy environment for the overall benefit and development of public libraries, and the communities that they serve, in the networked environment.

DIGITAL DIVIDE

At present, there appears to exist a Digital Divide. While complex and multidimensional in nature, this Divide consists of a divide between the technology haves and have-nots, creating an environment of disparate access to information technology and content as a function of income, geography (e.g., urban versus rural areas), education, ethnicity, and various socioeconomic attributes (Census, 2001). Views differ on how best to define the Digital Divide, but basically the term has been used to suggest that certain groups of people have inadequate access to the array of networked services for a host of possible reasons.

Although the communications infrastructure is improving, the United States has yet to achieve uniform Internet access in all areas (see section on broadband). Some 95.7% of public library outlets in the United States have public Internet access. Overall, however, only 53.6% of them are connected at greater than 56kbps, with only 35.4 % of rural public libraries connected at greater than 56kbps, and 47.8% of libraries connected at greater than 56kbps that have population of legal service areas of less than 100,000 – as opposed to 86.6% of libraries connected at greater than 56kbps that have population of legal service areas of greater than 100,000 (Bertot and McClure, 2000; additional analysis provided in Chapter 3 of this report).²

² Considerable discussion and debate exist concerning “adequate” bandwidth/connectivity speed. A benchmark speed in public libraries is that of 56kbps – direct connect/leased line. Direct connect/leased line connectivity (though one must now consider various wireless and other connection options) produces more robust connectivity, particularly when matched with switching technologies, than do dial-up connections. It is important to note, however, that the Federal Communications Commission (as discussed in this chapter) considers broadband access in the home to be a minimum of 200kbps – about four times faster than 56kbps.

In addition, there is a societal division in terms of technology and reading skills (see section on literacy). Having physical access to the Internet does not mean a person has the knowledge necessary to access Internet-based information. Individuals must also be able to ascertain whether the information is useful, correct, and current, among other factors. Websites may need to be available in more than one language and provide comprehensible access to a wide range of users with various literacy skills.

Society can realize a number of benefits from the Internet. These benefits include, but are not limited to:

- A better informed people with access to government information and services, enabling them to participate in a democratic society;
- Instant access to investment, financial, and banking information;
- Improvement of health care due to telemedicine as well as better access to health information; and
- Access to housing information, as well as employment opportunities.

For this scenario to exist, however, there is a likely need for additional investment in the communications infrastructure, better access to and organization of network-based information, and training for both information professionals and users to provide enhanced knowledge of how to exploit this information infrastructure.

Several studies have been conducted detailing the characteristics of the digital divide. The National Telecommunications and Information Administration (NTIA) demonstrated that whites are more likely to have Internet access in their homes than blacks or Hispanics. Overall, 51.0% of homes had a computer and 41.5% of those households had access to the Internet. An additional 8.7% accessed the Internet from elsewhere. In addition, individuals making less than \$35,000 dollars a year are more likely to access the Internet from outside the home (National Telecommunications and Information Administration, 2000; U.S. Census, 2001).

In a more recent study done by the Gartner Group, nearly 50% of the U.S. population accesses the Internet from their homes, while nearly 42% of Americans access the Internet from outside the home. This does not suggest that 92% of Americans have access to the Internet because the two groups are not mutually exclusive. The study also showed that whites were still more likely to have Internet access in their homes than blacks. In addition the Gartner report showed that individuals living in lower income households were still more likely to access the Internet from outside the home (Smolenski, 2000).

Universal Service and the Digital Divide

There is no clear, concise, or parsimonious definition of universal service. Over the years, and through various interpretations, legislation, and regulations, the general concept of universal service -- in idea and implementation -- has come to mean the (Bertot, McClure and Owens, 1999, p. 311):

- Definition of a set of telecommunications services to which users of those services should have access (e.g., dial tone and emergency 911 services from the telephone network);
- Implementation of a system of subsidies, or some other funding mechanism, which allows all users of the telecommunications services -- regardless of socioeconomic, geographic location, or other discriminating demographics -- access to such services at a reasonable cost; and
- Creation of international, national, and local interconnected public telecommunications infrastructure networks (e.g., public telephone network and the Internet) that meet current and future societal needs.

A major reason for these general aspects of universal service is that approaches to universal service are evolutionary, leaving nations the ability to incorporate new telecommunications technologies into their universal service efforts.

In 1996, the Telecommunication Act (TCA) was passed attempting to update a variety of key issues specific to that industry. The TCA was the first significant legislation offering the U.S. paradigm of universal service principles, section 254b refers to the following (P.L. 104-104):

- **Quality and rates:** Quality services should be available at just, reasonable, and affordable rates.
- **Access to advanced services:** Access to advanced telecommunications and information services should be provided to all regions of the Nation.
- **Access in rural and high cost areas:** Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services . . . that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.
- **Equitable and nondiscriminatory contributions:** All providers of telecommunications services should make an equitable and non-discriminatory contribution to the preservation and advancement of universal service.
- **Access to advanced telecommunications services for schools, health care, and libraries:** Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services as described in subsection (h).
- **Additional principles:** Such other principles as the Federal-State Joint Board and the Commission determine are necessary and appropriate for the protection of the public interest, convenience, and necessity and are consistent with this Act...

Although directed at the networked environment, these principles attempt to guide the availability, dissemination, and adoption of advanced telecommunications infrastructure throughout the United States.

The importance of these principles cannot be understated. In the nearly 70 years since the passage of the *Communications Act of 1934*, some areas of the United States are still without telephone service let alone broadband access. Some of the Native American reservations still do

not have residential telephone service; for example the Navajo reservation in the southwest U.S. has only 22% of the households receiving telephone service (Casey, Ross, and Warren, 1999). Former President Clinton proposed a \$17 million initiative to bring telephone service to Native American reservations (Krebs, 2001). At issue is the degree to which the *Telecommunications Act of 1996* can bring broadband to all rural communities without a large investment by the Federal government.

Legislation – Digital Divide

Over the last ten years, a number of bills have been introduced – with some passing – in attempts to bridge the Digital Divide. This section focuses on the National Telecommunications and Information Administration Act of 1992 (P. L. 102-538), and some additional bills introduced in the 107th Congress. The American Library Association provides an additional list of bills introduced into the 106th Congress for those wishing to review the legislative scope of the Digital Divide in more detail (American Library Association, 2001).

A recent law passed pertaining to bridging the Digital Divide was the National Telecommunications and Information Administration Act of 1992 (P. L. 102-538). This law provided the statutory authorization for the establishment of the National Telecommunications and Information Administration (NTIA) within the Department of Commerce. The initial intent of this law was not to address specifically the Digital Divide, but Title I Part B did address broadly the use of technology for education. From this early beginning, the NTIA found itself as the government champion for bridging the Digital Divide, especially after the publication of its seminal work on the Digital Divide *Falling Through the Net: A Survey of the "Have Nots" in Rural and Urban America* (National Telecommunications and Information Administration, 1995). This was followed by a series of Digital Divide reports that include:

- *Falling Through the Net: Defining the Digital Divide* (1999);
- *Falling Through the Net II: New Data on the Digital Divide* (1998);
- *Advanced Telecommunications in Rural America: The Challenge of Bringing Broadband Service to All Americans* (2000); and
- *Falling Through the Net: Toward Digital Inclusion* (2000).

These reports are available online at <<http://digitaldivide.gov/reports.htm>>.

Several bills have been introduced into the House and the Senate to provide solutions in bridging the Digital Divide during the 107th Congress. Among these bills are the:

- Education Technology and Equity Act of 2001 (H.R. 1323), which proposes amending the Elementary and Secondary Education Act of 1965 (P. L. 89-10) to reserve a portion of funds FY 2002 through 2006 to be used for Native Americans and U.S. territories. These funds would be used to aid local educational agencies in developing a plan for the acquisition of and use of technology for education and administration to narrow the Digital Divide.

- NTIA Digital Network Technology Program Act (H.R. 1034, S. 414), which seeks to amend the National Telecommunications and Information Administration Organization Act of 1992 (P. L. 102-538). It would change the NTIA's Technology Opportunities Program (see Community Access Centers section of this paper) to include funding for instruction in digital network technologies as well as funding for infrastructure. It further defines eligibility to include institutes of higher education serving predominantly minority and low-income students. This act recognizes that to bridge the digital divide not only requires technology, but it also requires the knowledge of how to use that technology.

There are other related bills that address issues regarding the Digital Divide. The above, however, are indicative of the type and range of bills pending in Congress.

Digital Divide Controversies

Despite the preponderance of data suggesting the Digital Divide is a reality (National Telecommunications and Information Administration, 2000, 1999, 1998, 1995; Smolenski, 2000; Rainie, Lee and Dan Packel, 2001), some individuals in government do not agree that such a problem exists and/or that it is a responsibility of the federal government to resolve issues stemming from a Digital Divide. Nor do all individuals agree on ways in which to address the problem.

Michael Powell, director of the Federal Communications Commission, negates the concept of the Digital Divide. He considers the Internet as a luxury item, rather than a necessity (Kirby, 2001). Not all government officials and researchers are convinced that technology, in and of itself, will cure the Digital Divide. The Bush Administration tends to lean toward the need for literacy training than the need for more technology infrastructure (see Literacy section). In this case literacy refers to both computer literacy and the ability to read. The proposed Bush Administration budget for FY 2002 shifts money from pure infrastructure placement to programs that include computer skills training (see Community Technology Centers section).

Digital Divide and Implications for Public Libraries

Historically, individuals relied on the public library as a source of information. Charles Francis Adams in his address to the inaugural meeting of the American Library Association described the public library as the "poor man's" source of education, and listed the benefits of the public library (Adams, 1877). Over 100 years later, the public library still serves in the role as the "poor man's university." The public library is one of a number of resources available to society to provide public access to information and information technology, and it may be one of the best positioned to do so.

There are some 16,000 public library service outlets in place and operational in the U.S. that offer an information dissemination and access mechanism.³ These service outlets can offer their communities a number of a number of information and educational opportunities that include Internet access, bookmobiles, branch libraries, and outreach services. Educational opportunities include Internet use classes, senior citizen programs, job-hunting skills, and literacy programs.

An especially interesting research topic is the degree to which the Internet is a competitor to public library use and draws users away from visiting physically the public library. A recent study by Rodger, D'Elia, and Jorgensen suggests that this is a complicated research question (2000). Their research produced a model that segments various markets and suggests that some market segments of the U.S. are more "vulnerable" to using the Internet than the public library. The research is not conclusive as they indicate the need for longitudinal tracking of the model to be able to develop more useful findings. An implication of this research is the future role of the public library as an institution to offset the Digital Divide.

Library-based programs, initiatives, and infrastructure to support community-based Digital Divide efforts, however, require both funding and staff. The majority of the funding comes from the local community. Funding from the state, and also from the federal government also supports such programs. The degree to which public libraries actively address Digital Divide issues, however, is unclear. The public library community, while striving for improved access to the networked environment, has had difficulty demonstrating specific impacts and changes that have resulted from programs and services in terms of minimizing the Digital Divide.

The previous discussion on the Digital Divide and the role of public libraries in bridging it identifies some policy issues that may require attention. Further research is necessary on these issues in order to develop policy at the national and local levels. These issues include:

- Is there a Digital Divide in the U.S.?
- If so, how extensive is the Digital Divide in the U. S.?
- Is there a need for further development of the National Information Infrastructure?
- Should public libraries give priority to bridging the Digital Divide in their communities?
- To what degree is the Internet a competitor or a facilitator for public library use?
- What programs currently exist with which public libraries can coordinate their efforts in aiding their communities to bridge the Digital Divide?
- What impact are public libraries having in their communities in bridging the Digital Divide?

The degree to which addressing Digital Divide issues is a priority for public libraries in this country today remains unclear.

³ Public libraries in the U.S. consist of library systems, some of which have branches. In the U.S., there are approximately 8,900 library systems, of which approximately 16% have branches. In all, there are over 16,000 service outlets – library facilities through which the public can access library services.

COMMUNITY TECHNOLOGY CENTERS

Community Technology Centers (CTCs), also known as Community Access Centers and Community Access Points, provide an opportunity for individuals in a community to have access to computers and the Internet. Several different government agencies have programs for providing funding to communities to build these centers. The Benton Foundation, in association with the American Library Association and others, developed a website, ConnectNet.org, containing a database of CTCs through which people can learn more about getting connected to the Internet (available at: <<http://www.connectnet.org/english/>>).

Selected Programs and Initiatives

The National Telecommunications and Information Agency's Technology Opportunities Program (TOP) provides funding for Community Access Center infrastructure and the development of model research programs. TOP does not provide funds for the training of individuals to run the centers or for training of individuals to use the centers. TOP targets rural areas as well as low-income urban communities. TOP received \$45 million in Federal funding in 2001, but under the Bush Administration budget proposal, TOP would only receive \$16 million in 2002 (Bush, G.W., 2001a).

The U.S. Department of Education administers the Community Technology Center Program. It provides funding for the development of "model programs that demonstrate the educational effectiveness of technology in urban and rural areas and economically distressed communities. These Community Technology Centers would provide access to information technology and related learning services to children and adults" (Department of Education, 2001). Unlike NTIA's TOP, the Department of Education's CTC program does include technology training. This program received \$65 million in Federal funding in 2000-2001. The 2001 presidential budget proposal calls for moving this program to the Department of Housing and Urban Development (Bush, 2001a).

The move of CTC from the Department of Education to the Department of Housing and Urban Development has not, as yet, been accomplished. In Spring 2001, the Senate approved an amendment to the Elementary and Secondary Education Bill to authorize \$100 million to create 1,000 new CTC's. Senator Mikulski proposed the amendment. She also is the ranking member on the Senate Appropriations Subcommittee on Veterans Administration and Housing and Urban Development and Independent agencies, leading some to speculate that the Senator may endorse keeping CTC at the Department of Education (OMB Watch, 2001).

A third program sponsored by the U.S. Federal government exists in the Department of Housing and Urban Development (HUD). The Neighborhood Network program establishes Community Technology Centers in multifamily housing properties and low-income housing. This program provides funding for infrastructure as well as technology training, but it does not target rural areas. The Neighborhood Network program emphasizes partnerships between the private and public sectors. The possibility exists that rural areas may not be eligible for funding

should the move of the CTC program from the Department of Education to HUD occur given the urban emphasis of HUD programs. President Bush's proposal does, however, raise the funding in FY2002 for CTCs from \$65 million to \$80 million. Libraries may be eligible under this program to form partnerships with other organizations to provide training and community technology centers to their patrons.

Finally, the National Commission on Libraries and Information Science began an effort in 2000 to establish a national database of information related to Community Access Programs <<http://www.nclis.gov/libraries/caps.html>>. This effort has resulted in a very useful listing of sources related to the development of CAPS. The Benton Foundation <<http://www.benton.org>>, among others, has continued work in this area and research related to the impact and effectiveness of CAPs and CTCs is necessary.

In addition to government programs, several other organizations and consortia exist to provide communities with technology and training to bridge the Digital Divide. PowerUp is a consortium consisting of corporate sponsors, non-profit organizations, and government agencies to provide the youth of America access to technology. PowerUP has installed computer labs in schools, housing complexes, and community centers, and other youth serving facilities (see <<http://www.powerup.org/index.shtml>>). Recent research by Durrance and Pettigrew shows that there are a number of methodological approaches for evaluating the use and impact of such community-based programs (2001).

The National Center for Small Communities targets small rural communities, and distributes educational and training program materials. Their publication *Getting Online: A Guide to the Internet for Small Town Leaders* provides local governments a step-by-step manual for getting the local government online (National Center for Small Communities, 1999). It provides advice on hardware, software, and procuring funding. In addition, the Bill and Melinda Gates Foundation provides software and hardware to libraries in low-income communities to provide their patrons with Internet access (see <<http://www.gatesfoundation.org/learning/libraries/default.htm>> for additional information). These are just a few examples of other organizations and efforts underway to improve community access to the Internet.

Importance to Public Libraries: Partnerships with Community Technology Centers

Federal funding of Community Technology Centers offers another opportunity for public libraries to work in conjunction with other organizations in their community to provide Internet access to their community and narrow the Digital Divide. By working with these programs the public library may be able to better leverage their information technology and services. The technology training and Internet access provided by Community Technology Programs can provide individuals in the community more job opportunities as well as improved access to social services and educational opportunities.

An example of a local public library working in conjunction with other agencies occurs in Claremore, Oklahoma. The Community Action Resources and Development, Inc. formed a consortium consisting of the public library, high school, and county extension office. They

provide the community with free e-mail service and Internet access at the Coweta Community Action Office (National Association of Community Action Agencies, 2001). In order to enhance and further develop Community Technology Center programs, researchers need to (1) assess such efforts and identify and measure the impact of these programs, and (2) determine the degree to which it is possible to replicate such programs in other communities.

The degree to which public libraries work in conjunction with other local organizations to provide their patrons with Internet access and the training to use the Internet is unclear. Nonetheless, such cooperation between public libraries and organizations such as PowerUp may offer new and effective means to improve access to the Internet via local community resources.

The selected government programs that target providing communities with access to technology, including TOP at NTIA, CTC's at the Department of Education, and Neighborhood Networks at HUD, require closer inspection. As it relates to partnerships, there are a number of policy issues regarding public libraries and community technology centers:

- Do public libraries need to be involved in offering their communities access to technology other than for the express purpose of gaining access to information?
- How can libraries coordinate their efforts with existing federal government technology access programs to minimize the duplication of effort and optimize the benefits to their communities?
- How do existing technology access programs at public libraries and other community centers have an impact on their communities?
- Is there a long-term role for the federal government in supporting CTCs and other community-based initiatives?

A number of people would argue that all individuals in our society should have equitable access to communications technology and services. How best to provide them with this access or the degree to which such access is a national priority remains unclear.

INFORMATION/NETWORK LITERACY

A minimum requirement of the networked environment is access – access to computing technology, access to the Internet, and access to information. For users to engage successfully the computing technology, the Internet, and Internet-based information resources and services, will require that users acquire and possess technology and information skills. Said differently, network users need to be technology, network, and information literate. Technology literacy implies a working knowledge of computing technology and applications. McClure defines information/network literacy as the ability to locate, process, and use information effectively regardless of the delivery mechanisms and the type of format in which that information appears (McClure, 1993).

In addition, many U.S. citizens do not have the ability to read in general much less online content. A 1992 study found that an estimated 23 million Americans are considered functionally illiterate. It also found that 35 million Americans are semiliterate, that is they lack the skills

beyond the eighth grade reading level (Bush, 1992). There is a need to consider the basic literacy skills of users in the content design of Websites for such individuals to benefit from Web-based information. An additional study, the 1992 National Adult Literacy Survey, found that 21% of Americans could not write a letter and could barely identify the necessary information contained in an article (Department of Education, 1992).

Finally, there is the issue of language literacy. Society consists of many individuals fluent and literate in their own language, but not yet fluent in English. Libraries offer programs in English as a second language to aid these individuals to learn and read English. In order for these individuals to reap the benefits of the Internet and to have access to government information and benefits, websites may need to be offered in more than one language.

Legislative Background

Public Law 100-382 authorized and requested that the President of the United States call a White House Conference on Library and Information Services. This conference focused on the improvement of literacy, productivity, and democracy, and how library and information services could contribute to that improvement. President George H. Bush commended the U.S. National Commission on Libraries and Information Services for their role in making this conference a success (Bush, 1992). One of the goals of this conference was to eradicate illiteracy in our society by 2000, but this has yet to occur. This conference noted the importance of teaching literacy skills to adults as well as to children. Language of future programs would shift from adults to children.

In 1994, Goals 2000: Educate America Act of 1994 (P.L. 103-227) focused on the U.S. school system and educating children. This law was to reform our school system by adopting an agreed upon set of skills, standards, and certifications. One of the goals of this program was that “by the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship” (Department of Education, 1994, Section 102 6A).

Recently, President George W. Bush enacted the “reading first” initiative calling for all children to be able to read by the third grade. Based on this initiative, the President appears to be moving away from an adult oriented literacy program, and towards a literacy program that targets children (Bush, G.W., 2001b).

Literacy Programs and Public Libraries

As local, accessible, community-based organizations, many public libraries have aided adult individuals to enhance their literacy skills. Numerous literacy programs exist in which public libraries can participate. The American Library Association has a list of these sites on their Web page (available at: <<http://www.ala.org/literacy/>>). Identified below are examples of these literacy programs:

- The American Library Association (ALA), in conjunction with the Lila Wallace-Reader's Digest Fund, are promoting outreach literacy programs in public libraries. This fund is providing \$4 million over three years to strengthen adult literacy programs in public libraries. ALA is providing the technical support and logistics to run the program.
- Literacy Volunteers of America, Inc. provides basic literacy classes and English for speakers of other languages classes as outreach programs at local public libraries. Programs like this one operate independently of the library, and receive no funding from the library (available at: <<http://www.literacyvolunteers.org/home/index.htm>>).
- The telecommunications company, Verizon, runs a literacy Internet network, Verizon reads. This network links literacy organizations with each other and the public. It provides a means for finding answers to questions about literacy programs, and serves as a means for sharing resources and knowledge (available at: <<http://www.verizonreads.com/>>).
- Laubach Literacy is an international non-profit educational organization that is helping to train the world to read. They provide grants to local literacy programs with over 1,100 local programs and 30 state organizations participating in a national network of nearly 90,000 literacy volunteers (available at: <<http://www.laubach.org/home.html>>).

These literacy programs represent only a few of the programs that exist. Regardless of the quality and effectiveness of a library's information technology infrastructure, individuals who lack basic information and network literacy skills cannot take advantage of that infrastructure.

Public libraries have and continue to develop and implement programs and services that address technology, information, and network literacy in their communities. In terms of policy issues, however, there are a considerable number of topics that may require attention:

- What levels of support are currently available to public libraries to develop technology, network, and information literacy efforts?
- How can technology, network, and information literacy programs be integrated with traditional literacy programs – or should they not be integrated at all?
- Should public libraries better coordinate their technology, network, and information literacy programs with other organizations?
- What are the impacts and benefits from literacy programs in terms of local community development and other factors?

Literacy issues continue to become more complex due to the arrival of the networked information environment. The degree to which literacy in a print environment affects literacy in a networked environment may require additional research and perhaps policy development.

E-RATE

The Telecommunications Act of 1996 (P.L. 104-104, section 254) established in principle a preferential telecommunications discount structure for schools, libraries, and rural health care providers. Through a Universal Service Fund (USF), the Act created the education rate, or E-rate, through which libraries and schools would receive discounts on their telecommunications

services, communications equipment, and internal wiring. The purpose of E-rate was to make communications technologies such as the Internet more affordable for libraries and schools while maintaining a competitive telecommunications market.

Background

The Act did not specify the implementation mechanisms of the E-rate. Rather, the Act directed the Federal Communications Commission (FCC) to develop an implementation plan and means through which to manage the E-rate program. The FCC oversees the program, but telecommunications companies (e.g., long distance phone companies, cell phone companies, and pager companies) fund the USF (capped at \$2.5 billion per year) for E-rate discounts. To administer the E-rate program, the FCC established two non-profit corporations – the Universal Service Administration Company (USAC) to manage the collection and disbursement of the E-rate discounts and the Schools and Libraries Corporation (SLC) to administer the E-rate application, processing, and approval processes. The SLC then became the Schools and Libraries Division (SLD) of the USAC. Schools and libraries must apply for discounts through the Schools and Libraries Division of the Universal Service Administration Company, which then disperses the existing amount of discounts among the applicants.

Schools and libraries are eligible for E-rate discounts that range from 20% to 90% based on two factors: 1) Poverty, as measured through the percentage of students eligible for the National School Lunch Program, and 2) Location, as measured by the metropolitan status of Rural or Urban. Essentially, the more impoverished and higher cost area (in terms of telecommunications costs) a community, the higher the discount rate that school and/or library receives (see <<http://www.sl.universalservice.org/reference/dmatrix.asp>>).

For example an urban library or school with 20% to 34% of its students eligible for the National School Lunch program receives a 50% discount off E-rate eligible items, while a school or library located in a rural area with the same number of students eligible for the lunch program would receive a 60% discount of E-rate eligible items. Whenever the percentage of students eligible for the School Lunch Program is less than 50%, the rural area receives a greater discount than the urban area. If the percent of students eligible for the lunch program is greater than or equal to 50%, urban and rural schools or libraries receive the same E-rate discount.

In addition to the eligibility requirements, schools and libraries must also file a technology plan with their Universal Service Fund application (Section 254(h)(1)(B), of the Telecommunications Act of 1996, and FCC Order 97-157, paragraph 573). The technology plan must show that the Institution has developed educational goals and devised strategies for achieving those goals, as well as having the necessary trained staff to accomplish their strategy. The plan must show what technology, hardware, and software are already owned, and provide a description of technology still needed to accomplish the institute's goals. In addition the plan must include a budget for accomplishing those goals. Lastly, the plan must have a specified evaluation process.

The FCC determined which services are eligible for E-rate discounts. These services are:

- Telecommunications services such as local and long distance phone service as well as Internet connectivity;
- Communications equipment such as hubs and routers; and
- Internal connections such as wiring.

Schools and libraries receive no actual funds under the E-rate, but rather discounts for services. The telecommunications company providing the discounted service receives reimbursement for the discount from the Universal Service Fund. Not covered under E-rate discounts are desktop computers, software, or technology training.

Historical Analysis of E-rate

Since 1934, the United State government has recognized the necessity for providing citizens with the means to access telecommunication services. The Communications Act of 1934 (47 U.S.C. 151 et seq.) included language that promoted access to telecommunications services, “To make available, so far as possible, to all the people of the United States a rapid, efficient Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges,” which initiated the concept of Universal Service for residential customers.

In 1996, the Congress expanded this commitment to Universal Service by passing the Telecommunications Act of 1996 (P.L. 104-104). This law amended the Telecommunications Act of 1934 by adding section 254 which 1) established principles of Universal Service, and 2) expanded Universal Service to include schools, libraries, and rural health care providers as well as residential customers (as discussed above in the Digital Divide section).

Since the passage of E-rate, there have been many concerns and challenges raised with regards to E-rate funding. Concerns have been raised about “excessive” forms and procedures needed to apply for the discounts; irregularities in the administration of E-rate funds; and the degree to which the telecommunications industry actively supports and participates in the program. The list of concerns is large and beyond the scope of this paper, but the section below touches on the highlights of the controversies surrounding E-rate. Gilroy has detailed these and other concerns and issues related to the E-rate and provides a detailed assessment of the program (Gilroy, 2000).

Non-Administrative E-rate Areas of Controversy

The Telecommunications Act of 1996 has not been free of complications and challenges. Each year new issues arise that threaten the implementation and/or continuation of the E-rate. Challenges to this law have been many, and as such are not covered here in their entirety. The majority of the concerns center on the implementation of E-rate including:

- The list of services covered by the program;
- The collection of funds to cover services;
- The extensiveness and labor involved in completing the application process;

- The linking of E-rate to the Children’s Internet Protection Act and the Neighborhood Children’s Internet Protection Act; and
- The effectiveness of the agency in charge of administering the program.

Some members of Congress argue that the FCC went beyond the intent of the law by allowing E-rate funding to cover unnecessary services. They believe that the E-rate program has turned into a multibillion-dollar operation providing schools and libraries more resources than they actually need. These opponents would prefer to see a minimum connectivity level established. For instance connecting schools at a baud rate of 56kbps rather than 100-Base T (connectivity is covered in the next section of this paper – broadband connectivity).

Secondly, there has been much discussion regarding the funding of the E-rate program. Telecommunication companies assess commercial and residential users a flat rate or fee to cover Universal Service. Representatives Bliley, Tauzin, Weller and others argue that the FCC has levied a tax on telephone subscribers, and consider this action to be illegal in that only Congress can enact a tax. Several bills were introduced into the 106th Congress including H.R. 1746, the Schools and Libraries Internet Access Act, that would have provided a telephone excise tax to fund the E-rate. In addition, this act moves the administration of the E-rate from the FCC to NTIA. No further action was taken on this bill, but this bill may reappear in the 107th Congress.

Another controversy surrounding E-rate concerns the application process. Many small libraries and schools do not have the trained personnel to process the application forms (Carvin, 2000). This puts an onerous burden on the library’s staff, and often requires specialized training. Organizations such as the American Library Association and various State Library agencies provide training sessions that address a number of E-rate-related topics. But even the training sessions require funding for travel and the loss of that staff member for the day. Those libraries and schools that most need the Universal Service fund are the institutions that can least afford travel and training expenses. Moreover, many of these institutions lack adequate base funding, and can little afford to forfeit staff time for training and the filing of paperwork.

In addition, the overall existence of the E-rate program has generated some controversy. Many opponents to E-rate feel the program duplicates other services already in existence at the Department of Education. The Bush Administration indicated initially that it would like to see the administration of E-rate moved to the Department of Education, but then decided to leave it at the FCC. Others, such as Representatives Tauzin and Weller, believe that the NTIA would provide better administrative guidance, and introduced H.R. 1746 in the 106th Congress to institute the change.

A final issue to be addressed regarding the E-rate is Public Law 106-554, the Children’s Internet Protection Act. This law links federal funding to the content of Internet websites made accessible via schools and public libraries. (This law is discussed in depth in the *Children’s Internet Protection Act* section of this paper.) Basically, schools and *libraries must filter* their Internet access so as to restrict access to pornographic material or lose their E-rate discounts.

Is E-rate Successful?

For the majority of schools and libraries, E-rate appears to be increasing connectivity throughout the United States. Several studies have been done attesting to this outcome (Carvin, 2000; Trotter, 2000; EdLinc, 2000; Puma, Chaplin, and Pape, 2000; McClure and Bertot, 2000). A review of the findings of these studies shows that:

- The E-rate program is increasing opportunities for learning for all Americans (EdLinc, 2000). These opportunities include virtual field trips, email correspondence with scientists, and videoconferencing.
- In some poor communities schools and libraries are the first to experience broadband connectivity (EdLinc, 2000). This causes a chain reaction throughout the community enticing others to connect to the Internet.
- The E-rate program is fostering partnerships with other community institutions (EdLinc, 2000). Schools and libraries are forming alliances with other Community Access Centers such as community colleges, senior citizen centers, and museums.
- Public Schools receive a vast majority of E-rate funding, with libraries receiving between 3-4% of E-rate discounts throughout E-rate years 1 through 3 (Puma, Chaplin, and Pape, 2000; <<http://www.sl.universalservice.org/funding/>>).
- Larger districts, schools, and libraries are more likely to apply for E-rate discounts than smaller programs (Puma, Chaplin, and Pape, 2000).
- E-rate discounts have been leveraged successfully by public libraries to gain additional local resources, Gates Foundation awards, and state library LSTA awards (McClure and Bertot, 2000).
- Network infrastructure and Internet access have improved (Carvin, 2000).

Public Schools are taking advantage of the E-rate program. Schools and libraries are benefiting from the program, and therefore communities are also benefiting. Small schools and libraries do not appear to be applying for E-rate. Overall, public libraries have received approximately 4% of all E-rate discounts. It is not possible to determine, however, additional library receipts of E-rate discounts in the areas of school libraries (applications come from the schools as a whole, not the school libraries) or consortia, which may include libraries in the mix.

E-rate's Impact on Public Libraries

In 1998, a study showed that 83.6% of public library outlets were connected to the Internet (Bertot and McClure, 1998). But the study also showed that only 73.3% of public library outlets provided public access to the Internet. A follow-up study in 2000 found that 95.7% of public library outlets have an Internet connection and that 94.5% offer public Internet access – an increase of over 20% (Bertot and McClure, 2000). This same study showed that 48.9% of public libraries used E-rate discounts towards their Internet connectivity. The degree to which it is possible to make a direct link between these increased rates of connectivity and the E-rate, however, is not clear.

The linking of E-rate discounts with Internet filtering may cause additional concerns for public libraries. If public libraries do not have an Internet policy plan filed with the FCC meeting all of the requirements of CIPA, then they could lose their E-rate discounts. This could be detrimental to the ability of communities to access the Internet at their public libraries.

Currently, a study is underway to better understand the impact and benefits from the E-rate for public libraries (McClure, Ryan, and Bertot, 2001). Preliminary work **suggests that the** convergence of a number of programs such as the Library Services and Technology Act (LSTA), the E-rate, the Gates Foundation Public Library Technology programs, State Library state aid, and local resources have combined to improve significantly public library information technology infrastructure (McClure, Ryan, and Bertot, 2001). Findings from this study will better describe the benefits and impacts of E-rate on public libraries and will be available by January 2002.

The E-rate continues to be a highly controversial program regarding a number of issues such as:

- Which schools and public libraries should receive the e-rate discount?
- What services should be eligible for E-rate discounts?
- Can the E-rate application process be streamlined or made less labor intensive?
- Are there better methods to collect the funds for the E-rate discounts, and who should be in charge of the process?

All of these issues are important and deserve further review and research, but the overriding question appears to be does E-rate work, and what are its impacts? More schools and public libraries are currently connected to the Internet than before the E-rate discount program started in 1996, but would these schools and public libraries have become connected even without the E-rate program? If so, at what level (e.g., bandwidth, workstations, public spaces such as classrooms) would their connectivity be without E-rate discounts? How many schools and public libraries connected to the Internet can be attributed exclusively to the E-rate discount program?

UNIVERSAL SERVICE – BROADBAND

Broadband refers to telecommunications services with high information carrying capacity. The FCC defines broadband to the home as “the capability of supporting at least 200 kilobits per second (kbps) in the consumer’s connection to the network (“last mile”), both from the provider to the consumer (downstream) and from the consumer to the provider (upstream)” (FCC in National Telecommunications and Information Administration and United States Department of Agriculture, 2000, p.6.).

In other words, broadband is an Internet connection that allows the consumer to transfer information in both directions at a minimum of 200 kbps. “Last mile” is a term referring to the distance between the residence and the communications backbone or infrastructure. This is not

Modem (56kbps)	ISDN (128kbps)	Satellite (DirecPC, 400kbps)	T1 (1.5mbps)	DSL (7.1Mbps)
2 min, 22 sec	1 min, 4 sec	20.5 sec	5.3 sec	1.15 sec
kbps=kilobytes per second mbps=megabytes per second				

achievable with a standard dial-up modem over existing copper-wire telephone lines. Broadband better allows individuals to:

- Download and send large files;
- Access multi-media services, such as Internet-based video conferencing, streaming video/audio, and voice over IP; and
- Engage in future bandwidth intensive applications under development or as yet not invented.

For example, cable modem service is approximately 50 times faster than a dial-up **56kbps** connection (see <<http://bandwidthplace.com/>> for examples speed comparisons), depending on the implementation of the service and general Internet traffic (see Table 2-1).⁴

Background

Several types of broadband connections exist for U.S. telecommunications consumers, but none of them are pervasive throughout the country at the present time. Individuals that live in large urban centers are more likely to have access to broadband options than individuals in rural areas. The following section describes several alternative mechanisms available in the United States including cable modem, Digital Subscriber Lines (DSL), microwave, fiber optics, and satellite.

The two most common broadband options include cable modem and DSL. Cable modem technology is the most prevalent form of broadband accessibility in the U.S. today due to its use of the same coaxial infrastructure as cable television. For Internet connectivity, the cable infrastructure requires various upgrades by the cable companies, and consumers require a cable modem and computer. A disadvantage to cable modem technology is that it requires a signal amplifier every 200 feet, and each amplification adds noise and distortion to the signal. DSL operates using standard telephone company infrastructure and has a maximum transmission length of 18,000 feet unless the telecommunications company installs additional equipment.

⁴ Actual data transmission rates from a workstation vary based on a number of factors that include general Internet traffic, connection type (for example, a 56kbps dial-up modem is limited to 54kbps data transmission speeds due to FCC regulations), and connection implementation (e.g., a switched 56kbps leased line can provide 56kbps to all workstations sharing the connection; however, a non-switched connection that uses hub technology, shares the bandwidth – therefore, more workstations sharing a non-switched connection means less actual transmission rates for each connected workstation).

Broadband connectivity is available increasingly in large urban areas, but installation is lagging in rural areas. Cable modem service is available in 65% of the towns with a population greater than 250,000, while DSL service is available to greater than 56% of the towns with a population larger than 100,000. Both DSL and Cable availability are less than 5% in towns with a population under 10,000 (National Telecommunications and Information Administration and United States Department of Agriculture, 2000, p.ii.). Moreover, the greater the distance between telecommunications customers, the greater the cost of installing the communications infrastructure. Therefore, broadband services to rural areas occurs less rapidly than for urban areas. Broadband implementation and availability in urban areas, however, is not problem free (NTIA, 2000).

It is important to note, that while this section does not review all possible telecommunications technologies, new technologies are in constant development. Moreover, existing technologies undergo regular changes to increase capacity and efficiency. For example, wireless technologies are undergoing capacity increases that should hold promise in the near future. The Bandwidth Place <<http://bandwidthplace.com/>> provides additional information and resources regarding existing and emerging telecommunications technologies.

Legislation

The cost of installing telecommunications infrastructure in rural areas has always been more expensive than for urban areas. This was one of the reasons the Congress passed the *Communications Act of 1934* (47 U.S.C. 151 et seq.). It stated that: “To make available, so far as possible, to all the people of the United States a rapid, efficient Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.” The government wanted to ensure that all Americans had access to telecommunications equipment regardless of their income or where they lived. With this law the U.S. government instituted the concept of Universal Service for residential customers.

In 1996, Congress expanded the commitment to universal service by passing the Telecommunications Act of 1996 (P.L. 104-104), which amended the Communications Act of 1934 by adding section 706. This amendment directed Federal and state regulatory bodies, such as the FCC, to encourage deployment of advanced telecommunications capability to all Americans by making regulation to promote competition and remove barriers to infrastructure investment. It further defines advanced telecommunications capability as “high speed, switched, broadband telecommunications capability that enables user to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology” (47 USC, section 706 (c)(1)). The law also requires the agencies to conduct studies periodically to estimate the progress of telecommunications installation, and to see if installation is occurring at a uniform rate in both rural and urban areas.

In general, rural areas are characterized by low-density populations do not provide enough financial incentive for telecommunications companies to invest in infrastructure. In these areas there is inadequate revenue to sustain one company, let alone drive competition between many companies. Indeed, local telephone services in the U.S. are still under the influence of local

monopolies – the regional Bell operating companies (RBOCs). Five years after passing the Telecommunications Act of 1996 there still exists major discrepancies in broadband and telecommunications services between rural and urban areas. It is possible that these discrepancies will become more pronounced as the price for broadband – such as DSL – may increase rather than decrease over the next few years (Platt, 2001).

Implications for Libraries

Maximizing the bandwidth at public libraries enhances the caliber of networked service that libraries can provide to their patrons. In a recent study measuring the level of bandwidth connectivity at public libraries, 53.6% of public library outlets are connected to the Internet at speeds greater than **56kbps**, and 35.4 % of rural libraries are connected to the Internet at speeds greater than 56kbps (Bertot and McClure, 2000). Moreover, 47.8% of libraries that have populations of legal service areas of less than 100,000 have Internet connection speeds of greater than 56kbps, as compared to 86.6% of libraries that have populations of legal service areas of greater than 100,000 (see Chapter 3). Approximately 62% more public libraries are connected at 56kbs or greater in the year 2000 than they were in 1998 (see Chapter 3). But the fact of the matter is that “adequate bandwidth” is a moving target and as advanced services are provided over the Internet, even T1 levels of connectivity may prove to be inadequate to support such services for public access institutions such as public libraries.

As Internet applications demand more bandwidth, public libraries will need to meet that demand in order for its patrons to use the Internet to its fullest potential. These applications might include searching databases containing video or audio information or taking a virtual tour of the Smithsonian Institute. As the government moves to a more digital government in general and digital Federal Depository Library program in particular, patrons will need adequate (defined here as computing and telecommunications services and resources) and access to these materials. Downloading large government documents, or engaging digital government services, at low bandwidth could take excessive time and prevent others from using limited library resources – thus not providing adequate access.

A number of Internet applications have emerged that require large bandwidth capacities – streaming video, streaming audio, interactive games, to name a few. Each of these applications – and others not mentioned or yet to be implemented – has public access implications for public libraries. For example, streaming audio and video are methods through which some universities provide online learning courses and degree programs. Also, increasingly, government agencies provide multi-media information resources and services that take advantage of these technologies. At issue is how libraries can afford to pay for such connectivity, the degree to which the telecommunications can provide broadband services, and the extent to which new Internet services will require broadband connectivity beyond a T1 connection, much less current levels of connectivity in public libraries. For public libraries, the scenario is “the endless upgrade” and it is unclear how they will be able to keep pace with the need for such broadband connectivity.

Broadband connectivity also has a number of issues that require further research and discussion. These issues include:

- What is adequate broadband connectivity for public libraries, given variations in public library size, location, and other library-specific factors?
- Is broadband connectivity a luxury or a necessity?
- What are the impacts of not having broadband connectivity?
- What are the measurable benefits of having broadband connectivity?
- Which of the several types of broadband connectivity will work the best for public libraries?

The number one issue facing policy makers on broadband connectivity, however, is how to ensure that all Americans have equal access to broadband connectivity regardless of where they live. How can policy makers provide incentive to broadband service carriers to provide their services to all parts of the country including rural areas and Native American Reservations? This key issue requires resolution if there is to be true Universal Service as legislated in the Telecommunications Act of 1996.

LIBRARY SERVICES AND TECHNOLOGY ACT (LSTA)

The Library Services and Technology Act (P.L. 104-208) (LSTA) provides federal grants to libraries, passed through state library agencies, to fund technology and to improve services for under-served communities, such as Native Americans and low-income urban areas. LSTA is scheduled for re-authorization during the 107th Congressional session; thus, there is considerable current discussion about the law.

The Institute of Museum and Library Services (IMLS) administers LSTA, and provides funding directly to state library agencies. The state library agencies have the responsibility of distributing grants to various libraries throughout their states – a process that typically involves a competitive grant application process. IMLS distributes funds to the states based on the population of the state. To be eligible for an IMLS grant, states must file a five-year plan that outlines library programs.

In addition to providing funding to states through LSTA, IMLS has four other types of library programs for which individual libraries and other organizations can apply:

- National Leadership Grants;
- Native American Library Services Grants;
- Native Hawaiian Library Services Grants; and
- National Award for Library Service.

Each of these programs has a set of goals and eligibility requirements covered on the IMLS Web site (see <<http://www.ims.gov/>>). Overall, the goal of these programs is to improve technology within libraries and to provide improved services to persons that might have difficulty using a library because of education, location, or income level.

LSTA Legislative History

LSTA is administered by IMLS, which was established by the Museum and Library Services Act of 1996 (P.L. 104-208) and revised by the Museum and Library Technical and Conforming Amendments of 1997 (P.L. 105-208, 20 USC 9101). This law replaced the Library Services and Construction Act (P.L. 101-254) (LSCA), and transferred administration of LSCA/LSTA from the Department of Education to the Institute of Museum and Library Services.

The purpose of the Museum and Library Services Act of 1996 as stated under Subtitle B – Library Services and Technology Act (LSTA) section 212 was to:

- Consolidate Federal library service programs;
- Stimulate excellence and promote access to learning and information resources in all types of libraries for individuals of all ages;
- Promote library services that provide all users access to information through State, regional, national, and international electronic networks;
- Provide linkages among and between libraries; and
- Promote targeted library services to people of diverse geographic, cultural, and socioeconomic backgrounds, to individuals with disabilities, and to people with limited functional literacy or information skills.

The intent of this law was to decrease administration costs and increase administration efficiency by consolidating federal library programs. Additionally, the Museum and Library Services Act of 1996 increased emphasis on technology in libraries, and the importance of information access to all U.S. citizens regardless of their location, income level, abilities, or skills. This law also encourages cooperation between libraries and museums, and the formation of library consortiums to share materials and services.

Issues with LSTA legislation

It is unclear if consolidating services under LSTA decreased administrative costs for running federal library programs. Evidence that supports claims one way or the other on this issue is difficult to obtain. In addition, administrative consolidation may or may not have resulted in overall reduced funding for library programs. In fact, yearly authorizations for LSTA can vary considerably. President George W. Bush's proposed FY2002 budget requested a decrease in IMLS earmarked funding to \$193 million for IMLS programs (Bush, G.W., 2001a) versus \$207 million in FY2001 (ALAWON, 2001).

In addition, programs not combined specifically under IMLS may face decreases in funding or no funding under the guise that government does not need to duplicate services. For example, the Bush Administration proposed zero funding for NCLIS with the justification that other agencies could assume responsibility for NCLIS activities – though those agencies were not identified in the budget statement. Last year NCLIS received almost \$1.4 million to conduct a range of programs – some of which included research projects and the development of a national

statistics program for libraries. Which agency would acquire these programmatic responsibilities is unclear should NCLIS not be funded for FY 2002.

This lack of NCLIS funding causes a number of policy predicaments. By law, Section 703 of the Museum and Library Services Act of 1996 amends section 5 of the National Commission on Libraries and Information Science Act (20 USC 1504) to direct NCLIS to advise the IMLS director on policies relating to library services. NCLIS also has the responsibility of ensuring that IMLS coordinates their activities with other federal government agencies performing similar activities.

Also, this law replaced the Library Services and Construction Act (P.L. 101-254) which had provided funding for the construction of new libraries. LSTA replaced this law, but no provisions were made in LSTA to provide federal funding for the construction of new libraries. The role of LSTA and the federal government in supporting library construction is currently under debate within the library community. Senator Schumer introduced Senate Bill 671 in April 2001 to provide for library construction and technology enhancements. To date, the bill has not made progress through Congress.

LSTA Impact on Public Libraries

The Museum and Library Services Act of 1996 provides funding for a number of library programs through LSTA. LSTA funding provides seed money for establishing various programs, to include programs include literacy training and technology connectivity. Depending on a funding formula based primarily on population, funds from IMLS are awarded to each state library and then used in that state for various projects and priorities (Institute of Museum and Library Services, 2001b). The range of programs and services funded by LSTA is quite broad. Many of the state libraries are currently conducting studies to assess the impact and benefits of LSTA. Results from these studies should become available by the end of 2001.

But more comprehensive studies are necessary to identify and measure the impact of IMLS funding on the public library and the local community. Congress and the public need to know how IMLS funds are being used and that those funds are being used effectively. These and related issues will likely take additional attention during the Fall of 2001 and Spring of 2002 as LSTA will be reauthorized this Congressional session. There is a significant opportunity during this reauthorization process to refine the legislation and clarify/expand its areas of coverage and funding. A number of library officials hope to expand the current level of funding of roughly \$150 million to \$500 million.

The concept of placing the governance of federal library and museum programs within a single government entity designed specifically for libraries and museums have been criticized – some believing that library programs were not best served by being linked to museums. Several issues remain about how this governance will work. These issues include:

- Will combining federal library programs under one agency actually reduce administrative costs and increase government efficiency?

- Should LSTA funds support the construction of new libraries?
- Will IMLS result in the demise of other federal government agencies that play a vital role in public library services to Americans, or will these agencies be incorporated into IMLS without a loss of overall funding for public libraries?
- What are the impacts and benefits that have resulted from IMLS programs that support libraries?
- What are the appropriate levels for funding IMLS programs?

It is important that some means of funding library research remains viable. IMLS provides a major source of funding for library and information science research – to what degree is this funding adequate and to what degree have the resulting research projects provided important and useful findings and results?

THE CHILDREN’S INTERNET PROTECTION ACT

Late in the 106th Congress, Congress passed the Children’s Internet Protection Act (CIPA) as Title VII of the Consolidated Appropriations Act for 2001 (H.R. 4577). President Clinton signed the appropriations act into law (P.L. 106-554) in December 2000, making CIPA effective as of April 20, 2001.

Public Law 106-554 regulates the ability of individuals to view Internet content in libraries and public schools that receive federal funding used for Internet infrastructure and connectivity. This law will affect institutions receiving funding through LSTA grants, Title III of the Elementary and Secondary Education Act, and/or the E-rate discount program.

Provisions

CIPA requires libraries receiving money through LSTA or E-rate to install and have operational a “technology protection measure” (TPM) that blocks or filters Internet access of visual depictions deemed inappropriate for children – as defined by the federal government rather than the local community. Of primary importance, the TPM must work and be in operation when individuals, regardless of age, are accessing information from the Internet. Also worthy of note is that this law prohibits visual depictions only, not textual material.

Included in the provisions of the law is a requirement that institutions receiving E-rate must also have an Internet safety policy in place. This policy must stipulate that minors cannot access “inappropriate matter” on the Internet with “inappropriate matter” defined at the local level. The policy design must also a) provide a system to protect children from harmful materials, b) prevent children from disclosing personal identification information, and c) protect their safety when using chat rooms, email, and other forms of direct electronic communication. The policy must also stipulate minors should not pursue unlawful activities on the Internet such as hacking (Susman, 2001). The institution must present and discuss the policy at a public hearing and have the policy certified by the Federal Communications Commission.

Certification for compliance with the law becomes effective for libraries receiving funding in year four, July 1, 2001 through June 30, 2002. These libraries must certify themselves with the Federal Communications Commission (FCC) using FCC form 486, and have it postmarked by October 28, 2001. To receive certification, libraries must have the safety policy and “technology protection measures” (TPM) in place or be in the process of designing and installing the policy and measures by year 5. At this time, certification does not require libraries to prove the effectiveness of the TPM and policy, only that they are in place.

Background

CIPA is not the first law passed with the objective of providing children protection from indecent materials on the Internet. The Communication Decency Act of 1996 (CDA) (P.L. 104-104) made it a crime to knowingly transmit “obscene or indecent” messages to anyone under the age of 18. This law was determined to be unconstitutional by the Supreme Court in *Janet Reno, Attorney General of the United States et al., Appellants v. American Civil Liberties Union et al.* District Court E.D. Pennsylvania, Case No. 96-511 June 26, 1997, on the grounds it violated the First Amendment rights of adults.

The next attempt to regulate material transmitted over the Internet was *The Child Online Protection Act* (COPA) (P.L. 105-277). The law made it a crime to communicate material over the Internet considered harmful to minors. U.S. District Court Judge Lowell Reed in *American Civil Liberties Union, et al. v. Janet Reno*, U.S. District Court, E.D. Pennsylvania, Case No. 98-5591, October 22, 1998, granted an injunction against this law because it violated First Amendment rights, and the injunction still stands.

Another court case involving Internet filtering software was *Mainstream Loudoun v. Board of Trustees of the Loudoun County Library* U.S. District Court, E.D. Virginia, Civil Action No. 97-2049-A. In this court case Judge Leonie M. Brinkema ruled that Loudoun County library could not continue to use Internet filtering software because it interfered with the First Amendment rights of both the library patrons and the website providers.

It would appear from these three instances that there exists a possibility that CIPA could be declared unconstitutional on the basis it violates First Amendment rights. Both the American Library Association and the American Civil Liberties Union have filed separate lawsuits in the Eastern District of Pennsylvania against the constitutionality of CIPA. A key factor is that the law requires the “technology protection measure” (TPM) be turned on regardless of the Internet user’s age.

In two previous cases, the Eastern District has decided against legislation because it violated the adult users First Amendment rights. It is possible that the court will again find that this legislation violates the First Amendment rights of adult users. Until that decision is made, libraries and schools must still comply with the legislation and become certified with the FCC or face having their Federal funding interrupted.

Filtering Software

One problem associated with CIPA is it requires the use of a “technology protection measure” (TPM). The only technology that currently exists to provide this protection is Internet filtering software. The law states that this software must do the intended job, that is to block visual depictions inappropriate for children. Many librarians believe that no TPM exists that is capable of accomplishing this task.

Several studies demonstrate that Internet filtering software does not block adequately inappropriate material, while it does block some appropriate material. For example, Schneider conducted a study, The Internet Filter Assessment Project (TIFAP), that demonstrated the inability of Internet filtering software to block inappropriate material while blocking appropriate and needed material (Schneider, 1997). A more recent study conducted by Consumer Reports resulted in similar findings – that Internet filtering software does not adequately block inappropriate material, but does block appropriate material – to TIFAP (Consumer Reports, 2001). Under the law, libraries must have in place TPM that block all visual depictions inappropriate for children.

A provision of CIPA formed the Children’s Online Protection Act (COPA) Commission to find viable policy alternatives for protecting children from inappropriate material on the Internet. The Commission recently filed a report with Congress on their findings. The Commission’s members found that Internet filtering software did not work adequately enough to recommend it as a legal means for protecting children from inappropriate material on the Internet (COPA Commission, 2000). The Commission proposed that more studies were necessary to determine the effectiveness of Internet filtering software, and more research was needed to produce technology that could accomplish the task.

Impact of CIPA on Public Libraries

CIPA requires public libraries receiving E-rate to have a certified Internet safety policy in place that addresses the various topics discussed above. This policy must be certified with the governing agency, it must be presented to the public with discussion in a public forum, and it must be implemented and followed. It is problematic if these requirements put an “undue burden” on the Public Library in order to maintain E-rate funding. Library boards may object to having to comply with federal mandates to keep funding.

The law also requires the library to install technology that could place the library in violation of their patrons’ First Amendment rights. Libraries could be put in the difficult position of losing their federal funding for technology and Internet access or face being sued by their patrons. In a previous Michigan case, rather than face costly litigation from patrons denied their First Amendment rights, the Gary Byker Memorial Library ceased offering Internet access services to their patrons when faced with mandated Internet filtering (Yonkman, 1999). This could be an unintended consequence of the law, but a consequence **nonetheless**.

A situation posed by CIPA is the requirement that libraries install TPMs that work or lose their federal funding, with “work” being the operative term. There is considerable debate as to the degree TPMs are guaranteed to block all visual depictions inappropriate for children. Libraries may not be able to comply with CIPA given the current technological effectiveness of the blocking software. Currently the FCC is not requiring that the TPMs be effective, just that they are in use. In order to keep their federal funding libraries must make an attempt to comply with the law. In the mean time more development may be needed to find technological means that are effective in blocking such content.

A third factor related to this legislation is its impact on library patrons’ ability to access networked information. This law was designed to protect children, but does it? Filtering software could prevent individuals from accessing needed information. This may not matter for finding a recipe, but it might matter for an individual diagnosed with breast cancer and seeking information. Most filtering software would prevent individuals from researching topics such as breast cancer (Schneider, 1997).

Finally, it is interesting to note that at the same time there are government efforts to reduce the Digital Divide, laws have been passed that threaten to expand the Digital Divide. These laws may threaten institutions that cannot comply with that law and force libraries to install technological devices that impede the flow of needed information – and thus, limit the ability of individuals in our society to access needed information.

These laws could decrease federal funding of technology and Internet access in public libraries. They also have the potential to increase the digital divide by limiting the accessibility of the Internet and by filtering the content of the Internet for those individuals in our society that cannot afford the prerequisite equipment and connectivity fees necessary for personal Internet access in their homes.

This topic remains highly controversial in that libraries may not have the ability to comply with the law, and by complying with the law they may be in violation of the First Amendment rights of their patrons. Some policy issues that still require resolution on this topic are:

- Does there exist a technological means through which to prevent children from viewing visual depictions that are inappropriate for children?
- By installing such technology means are public library administrators infringing on the First Amendment rights of their adult patrons?
- Will these technology means further increase the Digital Divide by blocking individuals from accessing needed information?
- To what degree will libraries simply refuse any type of federal program support because they do not wish to comply with CIPA?

This is a highly contested issue between the protection of First Amendment rights, and the desire to protect children from inappropriate Internet-based material.

It remains unclear how, specifically, individual public libraries will respond to CIPA. For some, it may be the case that access to the funds provided by E-rate or LSTA are too significant

to not comply with the provisions in CIPA. On the other hand, some public libraries may be willing to forgo such funding on principle. For example, San Francisco Public Library announced recently that it will not apply for E-rate funding (approximately \$20,000) due to the CIPA requirements of E-rate (Scheeres, 2001). In the end, the impact of public library Internet connectivity due to CIPA remains unclear at this time.

THE FEDERAL GOVERNMENT'S SUPPORT FOR LIBRARIES

Due to the limitations of this chapter, it is not possible to cover fully the legislative foundation of federal funding and support of libraries. Molz and Dain (1999) provide a thorough analysis of the legislative history up to 1997. The four main goals of U.S. library legislation have been the:

- Development of a National Information Infrastructure;
- Provision of services to isolated locations, and to disenfranchised Americans;
- Provision of educational opportunities such as literacy and computer training; and
- Provision of grants for Library [and information] Science research.

Policy issues related to these goals have been discussed earlier in this chapter. This section provides an overview of selected federal efforts in support of library services.

LSA/LSCA/LSTA

The first legislation written for public libraries with the intent of improving the information infrastructure of the nation was the Library Services Act of 1956 (P.L. 84-597). This law provided federal funds for public library services in rural areas. Monies were dispersed to the states based on population densities. The intent of this law was to ensure individuals in rural areas received the same opportunity to access information as their counterparts in urban areas.

The Library Services and Construction Act of 1964 (LSCA) (P.L. 88-269) strengthened the intent of Congress to provide universal and uniform access to information. It provided funds for the construction of libraries, made urban as well as rural libraries eligible for federal funds, and emphasized the provision of library services to handicapped individuals. Over the next thirteen years, LSCA was amended several times, and each time the amendments strengthened the desire for universal and uniform access to information. The following are just a few examples:

- P.L. 91-600 amended LSCA to emphasize services to low-income families, and the development of State Library Agencies, and
- P.L. 93-380 amended LSCA to include programs directed towards individuals with English as a second language.

In 1996, the Omnibus Consolidated Appropriations Act of 1997 (P.L. 104-208) formed the Institute of Museum and Library Services to administer Federal funding for public libraries. Prior to this the Department of Education had been responsible for administering library funding.

It also replaced LSCA with Library Services and Technology Act. The LSTA section of this paper contains a more detailed description of the Library Services and Technology Act of 1996.

National Libraries

The federal government has established National Libraries to promote the dissemination of government information, and to organize scientific research. Currently three legislated (mandated) National Libraries exist:

- The National Library of Agriculture serves as an agricultural information resource for educators, researchers, and policy makers. It was established in 1862 as part of the Department of Agriculture and became a National Library in 1962.
- The National Library of Education is a national source of education information within the federal government linking libraries, schools, government, and educational centers. It was established by Public Law 103-227, Part E of Title IX, of the Goals 2000: Educate America Act.
- The National Library of Medicine is part of the National Institute of Health, and collects materials relating to health care and medical research. It serves as an information resource for medical and health care researchers as well as the general public. The National Library of Medicine was established under Title 42 USC, The Public Health and Welfare, Chapter 6A, Subchapter III, Part D.

In addition, the Library of Congress serves as the largest de facto national library. The Library of Congress is over 200 years old and was established by Thomas Jefferson to provide information resources to the U.S. Congress, and to collect and preserve the United States' knowledge for future generations.

These national libraries play an important role in supporting the library infrastructure of the country. Nonetheless, there are a number of issues about how specifically this support should occur, the types of programs and services these libraries should provide, and how best the national libraries can work with other libraries for the overall benefit of the nation.

Depository Library Program

The federal government also recognizes the need to distribute information generated by the government as a result of government. These materials include committee reports, the language of bills and laws, and Congressional testimony. The rights of U.S. citizens to obtain these materials is protected and delineated by the Federal Information Act (P.L. 89-487, 5 USC 552) and the Electronic Freedom of Information Act (P.L. 104-231, amending 5 USC 552). In order to expedite the distribution of these materials to the public the government established a Federal Depository Library Program (44 USC 19) within the U.S. Government Printing Office (44 USC 17).

The Federal Depository Library Program (FDLP) distributes government information to some 1400 libraries throughout the U.S. to ensure citizens have access to government information in their area. With the advent of the Internet, Congress passed the Government Printing Office Electronic Information Access Enhancement Act of 1993 (P.L. 103-40) to provide U.S. citizens with free electronic access to federal documents. Unfortunately, those without access to the technology or the knowledge to use the technology do not benefit from this law.

The role of the FDLP in the electronic and Web-based environment is evolving. Agencies increasingly provide access to reports, documents, publications, and other information via their Web sites – oftentimes not depositing that information through the GPO. In addition, a recent assessment of selected agency Websites suggests that their overall quality and usefulness to the public varies considerably (McClure, Sprehe, and Eschenfelder, 2000). How libraries will continue to serve as an effective access point to the array of Web-based government information may be problematic at best. And how the FDLP serves to make that Web-based information available to the public (and the nation’s libraries) also may be problematic.

Research Support

The federal government provides funding for library and information science research to numerous organizations. Federal agencies such as the Institute of Museum and Library Services (IMLS), and the U.S. National Commission on Libraries and Information Science (NCLIS) support programs at universities and colleges to measure the impacts of library funding programs and also to investigate Federal information policy issues. These agencies also fund research seeking to ascertain the information needs of the American public, and how library services can be improved to meet these needs. Other agencies such as NTIA, Department of Education, the National Libraries, and other agencies also support library and information science research and demonstration and training programs.

Other Programs

There are other areas in which the federal government provides programmatic support to libraries. For example, the National Center for Education Statistics (NCES), in partnership with NCLIS and the Census Bureau, collects a broad range of statistics that describe state, public, school, and academic libraries and their services. Data collected and reported by these and related efforts at NCES are essential to describing and understanding how libraries evolve and change over time.

The federal government provides funding emphasizing service to individuals in our society that may not be able to access information or have ready access to information. These individuals may not have the reading skills, information skills, or computer skills to access needed information. For some of these individuals English may be their second language. Federal funding also supports programs and services for Americans with disabilities. The government provides funding for adult literacy programs to aid these individuals. In addition the

government provides funding to encourage the growth of the information infrastructure in rural areas, because the cost per capita may be prohibitive for the building of libraries, installation of information technology, and subscription to broadband telecommunications services.

Impact on Public Libraries

How significant is the role of the federal government to public libraries? Federal funding contributes a very small portion of the overall budgets of individual public libraries. In most states, 80-90% of public library funding comes from the local taxpayer, while the federal government oftentimes provides less than 1-2%. For example, Florida public libraries receive approximately 1% of their overall budgets from the federal government; in Michigan, the figure is about 0.5% (Library of Michigan, 2000 p.7; State Library of Florida, 2000 p.4). But even this small amount of funding sponsors literacy projects, provides outreach services such as bookmobiles, helps build libraries, and provides technology funding. Additional detail on public library funding and services is available at <http://www.nces.ed.gov/pubsearch/getpubcats.asp?sid=041>.

Historically, the federal government has been supportive of public libraries and recognizes the need for informed citizens. The lobbying efforts of libraries – either collectively or separately – have limited impact on federal programs related to libraries. Nonetheless, key research topics require attention:

- What are the ways in which to measure the impact of federal library programs and make the information available to Congress?
- How to strengthen the lobbying power of library organizations in order to convince Congress to apply more funds to federally funded library programs?
- How to determine what the needs of library patrons are and convey those needs to Congress?
- What is the best mix of programs and funding levels and from which agencies to support the development of library programs and services in this country?

Although the federal government recognizes the need for libraries in general and public libraries more specifically, the federal role in support of libraries is nebulous at best. The degree to which public libraries receive “adequate” federal funding support and the degree to which the “right” agencies are involved in administering the “right” programs to support library programs and services are key issues that may require additional research and attention.

DEMANDS OF NEW TECHNOLOGY

New technological advances and changes create planning, logistical, and funding challenges for library administrations and librarians. As shown previously, the majority of public libraries now provide Internet access for their patrons, but nearly 50% (46.4%) do not provide Internet access at broadband information transmission rates (defined minimally as 56kbps). An immediate challenge to many public libraries will be moving to a broadband services delivery

environment. Another challenge will be assessing the use of wireless services and how/if to integrate those services into library network-based services.

Technology changes have occurred at a rapid rate. In the case of the Internet, substantial access for library patrons occurred over a period of about three to four years. Each time a technology advance occurs, public library administrators must develop strategies to plan, implement, and manage these changes. At issue is the degree to which public libraries can adapt to the various technical changes occurring given their current levels of funding.

Nearly half of public libraries have Internet connections of 56kbps or below, with the other half having Internet connections above 56kbps. Rural and smaller library systems – in terms of population of legal service area – tend to have connectivity speeds of 56kbps or below (Bertot and McClure, 2000; Chapter 3). Many current and future Internet applications, such as streaming audio and video, require broadband transmission technology, however.

The Public Broadcasting Service (available at <<http://www.pbs.org/als/>>) provides interactive learning situations on its Website for child and adult literacy purposes. Low bandwidth means the pages load slowly, and that the more robust applications (e.g., virtual tours, multi-media instructional material) do not run at all. Moreover, many libraries limit the amount of time an individual can be online, thus, slower connections inhibit the patron from accomplishing his/her tasks. The National Geographic Society (available at: <<http://www.nationalgeographic.com/features/index.html>>) offers multimedia tours that require large bandwidth for optimal viewing and learning experiences. The Smithsonian Institute (available at: <<http://2k.si.edu/>>) offers a virtual tour of its collection, but the Website designers suggest that you utilize high bandwidth connections when taking the tour.

In addition to virtual libraries and classrooms, new technologies can enhance the provision of library services to local patrons and U.S. citizens. Currently some libraries offer electronic reference services, but with broadband capabilities libraries can offer interactive electronic reference including voice and video. The librarian and patron can hear and see each other to conduct the reference interview. This option is especially important for libraries with special collections. A study currently in progress intends to measure the cost, impact, and quality of these digital reference services (McClure, Lankes, and Gross, 2001).

All of the above mentioned Internet applications and services may enhance the patron's quality of life, and, as such, may make society more informed and more productive. At issue is the degree to which libraries can fund these technological developments, integrate them into existing library services, and continue to upgrade these applications on a two-three year cycle.

In short, technology infrastructure is likely to continue to change at a rapid pace. Hardware, software, telecommunications, satellite-based communications, etc., will have significant impacts on library programs and services. The degree to which libraries will be able to afford to purchase these technologies, implement them successfully, and tie their network-based services to these technologies and telecommunications infrastructures appears to be somewhat problematic. Furthermore, these are not one time purchases as the technology requires ongoing

upgrades. It is unclear as to the responsibility of the federal government in maintaining the currency of technology in public libraries.

OTHER TOPICS

As discussed earlier in this chapter, the topics presented here are not a comprehensive listing of key topics and issues requiring debate, discussion, and research. Other topics of interest include the:

- Appropriate mix of funding sources to support public libraries;
- Upgrades and integration of new technologies in public libraries;
- Role of the Federal Depository Library Program in a networked environment;
- Role of the National Technical Information Service (NTIS) in the provision of government information (see <<http://www.nclis.gov/govt/assess/assess.html>> for work done by NCLIS in this area); and
- Impact of E-government on public libraries.

These are but a sampling of some of the current topics and issues affecting public libraries that continue to have importance but are not discussed directly in this chapter.

SUMMARY

This chapter suggests that the federal government is involved in a range of initiatives and policies that affect public library development in the United States. Table 2-2 summarizes these policy areas and selected issues. Appendix A provides an annotated selected listing of websites that have additional information regarding the topics covered in this chapter.

The evolving policy environment will have a significant impact on public access to information, the organization of electronic/networked information, the ability of public libraries to engage in network-based services and resources, and measuring the impact and success of library services. But this policy environment requires policy analysis and traditional research for evaluating the implementation, effectiveness, and efficiency of the various existing library programs and proposed policies. To a large degree there is very limited policy analysis and research related to these topics. Instead there are multiple “opinion pieces” that shape the literature in these policy areas.

The various policy issues affecting libraries and library development oftentimes are complicated, have a range of potential impacts, and can be quite contentious. The library community is but one of a number of key stakeholders affected by these policies. Moreover, there is increasingly a confusing cast of players in the federal government that have different/overlapping sets of responsibilities for funding and supporting library development. The extent of the potential impact from these policy issues and the number of federal offices as well as professional association offices involved in affecting policy development for libraries and the information professions can result in a very complicated milieu for the library community.

The next chapter of this report describes additional data analysis conducted on the Public Libraries and the Internet 2000 Study <<http://www.nclis.gov/statsurv/statsurv.html>>. Chapter 4 discusses selected issues that may form an agenda for national priorities broadly related to libraries. Within these issues the authors offer some strategies and recommendations to address these issues.

Table 2-2. Summary of Key Policy Areas and Issues.

Policy Area 1: Digital Divide	
	Issue 1: How extensive is the Digital Divide in the United States?
	Issue 2: Is there a need for further development of the National Information Infrastructure?
	Issue 3: Should public libraries have a priority to bridge the Digital Divide in their communities?
	Issue 4: What programs currently exist that public libraries can coordinate their efforts with in aiding their communities to bridge the Digital Divide?
	Issue 5: What impact are public libraries having in their communities in bridging the Digital Divide?
Policy Area 2: Community Technology Centers	
	Issue 1: Do public libraries need to be involved in offering their communities access to technology other than for the express purpose of gaining access to information?
	Issue 2: How do existing technology access programs at public libraries and other community centers have an impact on their communities?
	Issue 3: How can libraries coordinate their efforts with existing Federal government technology access programs to minimize the duplication of effort, and optimize the benefits to their communities?
Policy Area 3: Information/Network Literacy	
	Issue 1: What levels of support are currently available to public libraries to develop information and network literacy efforts?
	Issue 2: How can network and computer literacy programs be integrated with traditional literacy programs or should they not be integrated at all?
	Issue 3: Should public libraries better coordinate their information and network literacy programs with other organizations?
	Issue 4: What are the impacts and benefits from literacy programs in terms of local community development and other factors?
Policy Area 4: E-rate	
	Issue 1: Which schools and public libraries should receive the e-rate discount?
	Issue 2: What services should be eligible for E-rate discounts?
	Issue 3: Can the E-rate application process be streamlined or made less labor intensive?
	Issue 4: Are there better methods to collect the funds for the E-rate discounts, and who should be in charge of the process?
	Issue 5: How many schools and public libraries connected to the Internet can be directly attributed to the E-rate discount program?
Policy Area 5: Universal Service - Broadband	
	Issue 1: Is broadband connectivity a luxury or a necessity?
	Issue 2: What are the impacts of not having broadband connectivity?
	Issue 3: What are the measurable benefits of having broadband connectivity?
	Issue 4: Which of the several types of broadband connectivity will work the best for public libraries, and set the industry standard?
	Issue 5: How to insure that all Americans have equivalent access to broadband connectivity regardless of where they live?

Table 2-2. Summary of Key Policy Areas and Issues. (Cont.)	
Policy Area 6: LSTA	
	Issue 1: Will combining Federal library programs under one agency actually reduce administrative costs, and increase government efficiency?
	Issue 2: Where will the funds come from for the construction of new libraries?
	Issue 3: Will IMLS result in the demise of other Federal government agencies that play a vital role in public library services to Americans, or will these agencies be incorporated into IMLS without a loss of overall funding for public libraries?
	Issue 4: Who will be responsible for researching the impact of Federally funded library programs, and provide feedback to IMLS and Congress?
Policy Area 7: CIPA	
	Issue 1: Does there exist a technological means by which children can be prevented from viewing visual depictions inappropriate for children?
	Issue 2: By installing such technological means are public library administrators infringing on the First amendment rights of their adult patrons?
	Issue 3: Will these technological means further increase the Digital Divide by blocking individuals from accessing needed information?
Policy Area 8: Role of Federal Government	
	Issue 1: How to measure the impact of Federal library programs, and make the information available to Congress?
	Issue 2: How to strengthen the lobbying power of Public Library organizations in order to convince Congress to apply more funds to Federally funded library programs?
	Issue 3: How to determine what the needs of library patrons are, and convey those needs to Congress?
	Issue 4: What is the best mix of programs and funding levels and from which agencies to support the development of library programs and services in this country?
Policy Area 9: Demands of New Technology	
	Issue 1: How can libraries successfully engage in an ongoing program of information technology upgrades?
	Issue 2: What skills and knowledge will librarians require in order to exploit successfully the new information technologies and integrate those technologies into the library?
	Issue 3: Is there a federal role to support ongoing information technology infrastructure development for libraries?

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CHAPTER 3: SUPPLEMENTAL DATA ANALYSIS FROM 2000 PUBLIC LIBRARY INTERNET CONNECTIVITY SURVEY

During May and June 2000, the authors conducted a national survey of public library Internet connectivity. The study used a weighted sample of public library outlets based on two outlet characteristics: 1) poverty (less than 20%, 20%-40%, and greater than 40%), and 2) metropolitan status (urban, suburban, and rural). The metropolitan status codes exist in the Federal State Cooperative System (FSCS) annual public library data collection system, whereas the poverty determination is a result of geocoding the outlets by physical location and census poverty data.⁵ In all, it was possible to geocode 16,004 public library outlets in March 2000. Thus, all results are based on the 16,004 geocoded outlets.

Appendix A of this report contains the detailed report of data tables and methodology of the 2000 public library Internet study. Briefly, the study found that:

- Nearly all public library outlets – 95.7% – have an Internet connection, with 98.5% of suburban outlets having an Internet connection and 93.3% of rural public library outlets having an Internet connection;
- 94.5% of public library outlets provide public Internet access services;
- Bandwidth in libraries, though varied by geographic location, is the highest it has been since the beginning of the public library Internet studies, with
 - 36.2% of outlets having T1 (1.45mbps) service as their maximum speed of connectivity for public access services,
 - 53.6% of outlets having greater than 56kbps (direct connect) service as their maximum speed of connectivity for public access services, and
 - 35.4% of rural outlets having greater than 56kbps (direct connect) service as their maximum speed of connectivity for public access services;
- **60.4% of public library outlets offer access to online database subscription services on all of their workstations;**
- **36.1% of public library outlets offer remote access to their online database services;**
- **71.2% of public library outlets do not provide special hardware/ software on their public access workstations for individuals with disabilities;**
- **75.5% of public library outlets do not block and/or filter Internet content on their public access workstations;**
- **95.5% of public library outlets have acceptable use policies for their public access Internet services, and 43.6% differentiate between users (e.g., children, adults) in their policies; and**

⁵ Specific information on the geocoding process is found in Appendix C of U.S. National Commission on Libraries and Information Science. (1998). *Moving toward more effective public Internet access: The 1998 national survey of public library outlet Internet connectivity*. Washington, D.C.: National Commission on Libraries and Information Science. Also, see Jue et al. (1999). Using Libraries to Provide Technology Access for Individuals in Poverty: A Nationwide Analysis of Library Market Areas Using a Geographic Information System. *Library and Information Science Research*, 21(3): 299-326.

- 62.3% of public library outlets offer Internet training services, of which 55.1% provide training to the adult public, 44.3% to library staff, and 43.7% to children/youth public.

The 2000 report (Bertot and McClure) contained in Appendix A provides other study findings, but the above highlight public library Internet connectivity improvements in the areas of connectivity, bandwidth, and public Internet access services.

ADDITIONAL ANALYSIS

Since the original 2000 public library Internet study, the authors re-weighted the survey data along two categories of population of legal service area and geographic region contained in the FSCS annual data collection process to:

- Seek potential differences in connectivity, public access services, and bandwidth by public library outlet criteria shown to be of significance (see Bertot, McClure, and Fletcher, 1997; Bertot, McClure, and Zweizig, 1996; McClure, Bertot, and Zweizig, 1994);
- Explore additional key criteria that impact public library outlet involvement with the Internet; and
- Provide additional insight into public library outlet Internet connectivity that would inform the policy debate regarding public library Internet involvement and the support of such involvement by federal, state, and local government legislation, policies, and funding.

The additional analysis, therefore, provides additional means through which to assess the state of public library Internet connectivity.

The Analysis Process Described

To conduct the additional analysis, the authors created two new data sets. The first data set created new responding outlet weights according to the population of legal service area of the outlet. Readers should note that, since this is outlet level data, not all the population of legal service areas are known for outlets (as opposed to the library system). As a result, there are a number of “unknown” outlets in the population of legal service area tables. While a number of population of legal service area categories exist in the FSCS annual data collection process, the authors collapsed the categories into the following:

- Greater than 500,000;
- 250,000 to 500,000;
- 100,000 to 249,999;
- 25,000 to 99,999; and
- Less than 25,000.

These categories provide a range of population data for analysis purposes.

The second data set created new responding outlet weights according to eight Census Bureau regional classifications:

- Greatlakes, which includes the states of Illinois, Indiana, Michigan, Ohio, and Wisconsin;
- Middle Atlantic, which includes the states of Delaware, Maryland, New Jersey, New York, and Pennsylvania;
- New England, which includes the states of Connecticut, Main, Massachusetts, New Hampshire, Rhode Island, and Vermont;
- Plains, which includes the states of Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, South Dakota;
- Rockies, which includes the states of Colorado, Idaho, Montana, Utah, and Wyoming;
- Southeast, which includes the states of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Tennessee, Virginia, and West Virginia;
- Southwest, which includes the states of Arizona, New Mexico, Oklahoma, and Texas; and
- West, which includes the states of Alaska, California, Hawaii, Nevada, Oregon, and Washington.

With this classification of states it is possible to look at public library Internet connectivity trends by areas of the United States.

Table 3-1 contains the breakdown of outlets by both population of legal service area and region. In reading the results provided through the additional analysis, readers should bear in mind the following:

- Each data set (region and population of legal service area) created required a complete re-weighting process to enable the data analysis process;
- The new weights required rounding to facilitate analysis. Rounding was set to the fourth decimal place; and
- SPSS (v. 10.0), the statistical analysis tool used by the authors, uses rounding in its analysis of weighted data.

As a result of the rounding that occurred throughout the analysis process, there are some slight differences in the percentages and outlet numbers in the tables as compared to the original analysis presented in Bertot and McClure (2000).

Population of Legal Service Area	Number and Percentage of Library Outlets	Region	Number and Percentage of Library Outlets
Greater than 500,000	2.1% n=322	Greatlakes	18.7% n=2,999
250,000-500,000	2.9% n=336	Middle Atlantic	15.0% n=2,408
100,000-249,999	2.3% n=374	New England	9.5% n=1,515
25,000-99,999	16.7% n=2,666	Plains	13.0% n=2,085
Less than 25,000	67.9% n=10,877	Rockies	3.8% n=657
Unknown	8.9% n=1,429	Southeast	20.8% n=3,329
		Southwest	7.7% n=1,232
		West	11.1% n=1,779
Overall	100.0% N=16,004	Overall	100.0% N=16,004

FINDINGS

Rather than duplicate all the analysis conducted for the original 2000 study (see Appendix A), this section presents selected findings that point to key differences in connectivity – either by population of legal service area or geographic region. The resulting analysis and presentation, therefore, highlights intentionally public library outlet connectivity issues.

Overall Connectivity and Speed of Public Internet Access Connectivity

Tables 3-2 and 3-3 indicates variations in connectivity by region as well as population served. Overall:

- Public library outlets are connected to the Internet and offer public access Internet services (range of 88.7% to 100.0% for connectivity and range of 84.9% to 100% for public access); and
- Nearly all outlets with Internet connectivity also provide public access Internet services, with the least public access Internet services in the Rockies states.

Table 3-2. Public Library Outlet Internet Connectivity by Population of Legal Service Area.

N=16,004	Connected to the Internet	Public Internet Access
Population of Legal Service Area		
Greater than 500,000	100.0% +/- 0.0%	100.0% +/- 0.0%
250,000-500,000	100.0% +/- 0.0%	100.0% +/- 0.0%
100,000-249,999	90.4% +/- 3.0%	90.4% +/- 3.0%
25,000-99,999	100.0% +/- 0.0%	98.5% +/- 1.2%
Less than 25,000	94.6% +/- 2.3%	93.2% +/- 2.5%
Unknown	96.2% +/- 1.9%	96.2% +/- 1.9%
Overall	95.7% +/- 2.0% (n=15,322)	94.6% +/- 2.3% (n=15,132)

Table 3-3. Public Library Internet Connectivity by Region.

N=16,004	Connected to the Internet	Public Internet Access
Region		
Greatlakes	96.0% +/- 2.0%	93.8% +/- 2.4%
Middle Atlantic	99.3% +/- .9%	98.7% +/- 1.1%
New England	90.6% +/- 2.9%	89.4% +/- 3.1%
Plains	91.2% +/- 2.8%	89.7% +/- 3.0%
Rockies	88.7% +/- 3.2%	84.9% +/- 3.6%
Southeast	97.9% +/- 1.4%	97.9% +/- 1.4%
Southwest	97.8% +/- 1.5%	95.6% +/- 2.1%
West	96.9% +/- 1.7%	96.9% +/- 1.7%
Overall	95.7% +/- 2.0% (n=15,315)	94.6% +/- 2.3% (n=15,132)

Note: These are weighted estimates based on a recalculation of the original weights for Metropolitan Status and Poverty to reflect Population of Legal Service Area categories. The weights and percentages are estimates and rounded during the analysis process. Therefore, there will be slight differences in both the calculated percentages and number of libraries represented through those calculations. For example, the original study estimated 15,128 connected public libraries that offer public Internet access. With the weight recalculations and rounding, the Population of Legal Service Area number of connected outlets that offer public Internet access is estimated at 15,134 for a difference of 6 outlets. With the weight recalculations and rounding, the Region number of connected outlets that offer public Internet access is estimated at 15,132 for a difference of 4 outlets.

	Maximum Speed				Total
	Less than 56kbps	56kbps dial-up	56kbps direct connect	Greater than 56kbps	
Population of Legal Service Area					
Greater than 500,000	-	-	-	100.0% +/- 0.0%	100.0% (n=322)
250,000-500,000	-	15.8% +/- 3.7%	10.4% +/- 3.1%	73.8% +/- 4.4%	100.0% (n=336)
100,000-249,999	-	-	3.6% +/- 1.9%	96.4% +/- 1.9%	100.0% (n=338)
25,000-99,999	1.0% +/- 1.0%	5.7% +/- 2.3%	17.1% +/- 3.8%	76.1% +/- 4.3%	100.0% (n=2,612)
Less than 25,000	7.9% +/- 2.7%	20.4% +/- 4.0%	31.2% +/- 4.6%	40.5% +/- 4.9%	100.0% (n=10,151)
Unknown	3.0% +/- 1.7%	6.9% +/- 2.5%	7.9% +/- 2.7%	82.2% +/- 3.8%	100.0% (n=1,375)
Overall	5.7% +/- 2.3% (n=867)	15.7% +/- 3.6% (n=2,369)	24.9% +/- 4.3% (n=3,770)	53.7% +/- 5.0% (n=8,128)	100.0% N=15,134

	Maximum Speed				Total
	Less than 56kbps	56kbps dial-up	56kbps direct connect	Greater than 56kbps	
Region					
Greatlakes	4.2% +/- 2.0%	16.6% +/- 3.6%	18.4% +/- 3.9%	61.8% +/- 4.9%	100.0% (n=2,813)
Middle Atlantic	6.6% +/- 2.5%	13.3% +/- 3.4%	27.3% +/- 4.5%	52.7% +/- 5.0%	100.0% (n=2,377)
New England	6.6% +/- 2.5%	25.0% +/- 4.3%	35.5% +/- 4.8%	32.9% +/- 4.7%	100.0% (n=1,355)
Plains	12.3% +/- 3.3%	39.4% +/- 4.9%	22.9% +/- 4.2%	25.4% +/- 4.4%	100.0% (n=1,870)
Rockies	6.6% +/- 2.5%	9.0% +/- 2.8%	26.7% +/- 4.4%	57.7% +/- 4.9%	100.0% (n=558)
Southeast	1.7% +/- 1.3%	8.2% +/- 2.7%	30.5% +/- 4.6%	59.7% +/- 4.9%	100.0% (n=3,259)
Southwest	2.3% +/- 1.5%	13.8% +/- 3.4%	19.5% +/- 4.0%	64.4% +/- 4.9%	100.0% (n=1,177)
West	8.9% +/- 2.9%	4.9% +/- 2.2%	18.7% +/- 3.9%	67.5% +/- 4.7%	100.0% (n=1,723)
Overall	5.7% +/- 2.3% (n=870)	15.8% +/- 3.6% (n=2,392)	24.9% +/- 4.3% (n=3,772)	53.5% +/- 5.0% (n=8,098)	100.0% N=15,132

Note: These are weighted estimates based on a recalculation of the original weights for Metropolitan Status and Poverty to reflect Population of Legal Service Area categories. The weights and percentages are estimates and rounded during the analysis process. Therefore, there will be slight differences in both the calculated percentages and number of libraries represented through those calculations. For example, the original study estimated 15,128 connected public libraries that offer public Internet access. With the weight recalculations and rounding, the Population of Legal Service Area number of connected outlets that offer public Internet access is estimated at 15,134 for a difference of 6 outlets. With the weight recalculations and rounding, the Region number of connected outlets that offer public Internet access is estimated at 15,132 for a difference of 4 outlets.

As Tables 3-4 and 3-5 show, there are some key differences in the maximum bandwidth for public library outlet Internet access services:

- As the population of legal service area decreases, in general, so too does the speed of connectivity. This is particularly noticeable for library outlets that serve population of legal service areas of below 25,000, and
- Library outlets in the New England and Plains states are less likely to have connectivity of greater than 56kbps than are library outlets in the rest of the nation. Indeed library outlets in those states have the highest percentage of 56kbps dial-up connections, with 25.0% in New England states and 39.4% in Plains states.

Funding Internet Connectivity

To fund their Internet activities and services, public libraries rely primarily on local funds (87.5%), followed by E-rate discounts (48.6%), and special grants (e.g., Bill and Melinda Gates Foundation) (30.7%), as Table 3-6 demonstrates. It is worth noting, but difficult to explain, that:

- Some regions rely less on E-rate than others – for example, only 21.0% of New England library outlets used E-rate discounts to fund their library’s Internet infrastructure. The next lowest percentage for E-rate use is the Plains states with 36.1% and Greatlakes states with 41.5%.
- New England states indicate a lower rate of federal funds to support their Internet infrastructure – 3.9% – than other regions. This, however, may be a result of respondents not indicating their receipt of LSTA grants in this category.
- Certain regions indicate substantial support from special grants for their Internet infrastructure. These correspond, for the most part, to Gates states. For example, 54.0% of Southwest libraries indicate Internet infrastructure support from special grants, followed by 49.8% of Southeast libraries and 33.3% of Rockies libraries.

Clearly, there are funding differences in key funding sources by region.

Public Access and Patron Internet Services

Public library outlets offer a number of public access and patron Internet services, including computer/Internet training, online database resources, and special hardware/software for persons with disabilities. In some cases, library outlets filter their patron’s access to Internet-based material.

Tables 3-7 and 3-8 demonstrate that, overall, public library outlets provide user technology training in their facilities:

Table 3-6. Public Library Outlet Funding for Internet-Related Technology and Infrastructure by Region.

Region	Funding Source for Internet-Related Technology and Infrastructure									
	Local Funds	State Library	State Grants	Federal Funds	E-rate	Library Foundation	Special Grants	Gifts	Fund Raisers	Other
Greatlakes	90.6% +/- 2.9%	23.6% +/- 4.2%	31.6% +/- 4.7%	20.8% +/- 4.1%	41.5% +/- 4.9%	4.2% +/- 2.0%	16.5% +/- 3.7%	17.9% +/- 3.8%	4.7% +/- 2.1%	12.7% +/- 3.3%
Middle Atlantic	89.4% +/- 3.1%	23.3% +/- 4.2%	40.0% +/- 4.9%	23.3% +/- 4.2%	67.3% +/- 4.7%	11.3% +/- 3.2%	32.7% +/- 4.7%	37.3% +/- 4.8%	14.0% +/- 3.5%	12.7% +/- 3.3%
New England	80.3% +/- 4.0%	11.8% +/- 3.2%	19.7% +/- 4.0%	3.9% +/- 1.9%	21.0% +/- 4.1%	9.2% +/- 2.9%	13.1% +/- 3.4%	25.0% +/- 4.3%	13.1% +/- 3.4%	13.1% +/- 3.4%
Plains	85.2% +/- 3.5%	13.9% +/- 3.5%	26.2% +/- 4.4%	15.6% +/- 3.6%	36.1% +/- 4.8%	8.2% +/- 2.7%	12.3% +/- 3.3%	35.2% +/- 4.8%	9.8% +/- 3.0%	5.7% +/- 2.3%
Rockies	93.4% +/- 2.5%	17.7% +/- 3.8%	28.9% +/- 4.5%	26.7% +/- 4.4%	53.4% +/- 4.9%	22.2% +/- 4.2%	33.3% +/- 4.7%	31.2% +/- 4.6%	6.6% +/- 2.5%	6.6% +/- 2.5%
Southeast	88.0% +/- 3.3%	38.2% +/- 4.9%	32.2% +/- 4.7%	19.7% +/- 4.0%	59.7% +/- 4.9%	3.9% +/- 1.9%	49.8% +/- 4.9%	19.3% +/- 3.9%	3.9% +/- 1.9%	6.4% +/- 2.5%
Southwest	83.9% +/- 3.7%	20.7% +/- 4.1%	31.1% +/- 4.6%	11.5% +/- 3.2%	52.9% +/- 4.9%	11.5% +/- 3.2%	54.0% +/- 4.9%	23.0% +/- 4.2%	8.1% +/- 2.7%	4.6% +/- 2.1%
West	87.8% +/- 3.3%	13.8% +/- 3.5%	17.1% +/- 3.8%	19.5% +/- 4.0%	43.9% +/- 4.9%	13.0% +/- 3.4%	31.7% +/- 4.7%	25.2% +/- 4.3%	8.9% +/- 2.9%	5.7% +/- 2.3%
Overall	87.5% +/- 3.3% (n=1,321)	22.9% +/- 4.2% (n=3,464)	29.5% +/- 4.6% (n=4,468)	18.1% +/- 3.9% (n=2,745)	48.6% +/- 4.9% (n=7,349)	8.4% +/- 2.8% (n=1,275)	30.7% +/- 4.6% (n=2,392)	25.8% +/- 4.4% (n=3,897)	8.2% +/- 2.7% (n=1,240)	8.9% +/- 2.8% (n=1,343)

*Will total to more than 100%, as respondents could select all funding sources that applied.

Note: These are weighted estimates based on a recalculation of the original weights for Metropolitan Status and Poverty to reflect Region categories. The weights and percentages are estimates and rounded during the analysis process. Therefore, there will be slight differences in both the calculated percentages and number of libraries represented through those calculations. For example, the original study estimated 15,128 connected public libraries that offer public Internet access. With the weight recalculations and rounding, the Region number of connected outlets that offer public Internet access is estimated at 15,132 for a difference of 4 outlets.

Table 3-7. Public Library Outlet Provision of Internet Training Services by Population of Legal Service Area.

N=15,134	
Population of Legal Service Area	Outlet Provides Internet Training Services
Greater than 500,000	71.4% +/- 4.5%
250,000-500,000	89.6% +/- 3.1%
100,000-249,999	92.9% +/- 2.6%
25,000-99,999	70.5% +/- 4.6%
Less than 25,000	56.4% +/- 4.9%
Unknown	76.2% +/- 4.3%
Overall	62.5% +/- 4.8% (n=9,459)

Table 3-8. Public Library Outlet Provision of Internet Training Services by Region.

N=15,132	
Region	Outlet Provides Internet Training Services
Greatlakes	70.3% +/- 4.6%
Middle Atlantic	71.3% +/- 4.5%
New England	65.8% +/- 4.7%
Plains	44.3% +/- 4.9%
Rockies	60.0% +/- 4.9%
Southeast	56.6% +/- 4.9%
Southwest	66.6% +/- 4.7%
West	65.9% +/- 4.7%
Overall	62.7% +/- 4.8% (n=9,492)

Note: These are weighted estimates based on a recalculation of the original weights for Metropolitan Status and Poverty to reflect Population of Legal Service Area categories. The weights and percentages are estimates and rounded during the analysis process. Therefore, there will be slight differences in both the calculated percentages and number of libraries represented through those calculations. For example, the original study estimated 15,128 connected public libraries that offer public Internet access. With the weight recalculations and rounding, the Population of Legal Service Area number of connected outlets that offer public Internet access is estimated at 15,134 for a difference of 6 outlets. With the weight recalculations and rounding, the Region number of connected outlets that offer public Internet access is estimated at 15,132 for a difference of 4 outlets.

- A minimum of 70.5% of public library outlets offer user training above a population of legal service area of 25,000 (see Table 3-7).
 - Only 56.4%, however, of public library outlets below a population of legal service area of 25,000 offer user training.
- With regards to region, user training in outlets ranges from a low of 44.3% in Plains states library outlets to a high of 71.3% in Middle Atlantic states library outlets.

As such, the data indicate that public library outlets tend to offer user technology training services in their facilities

Public library outlets offer patrons a variety of online database services. This service, however, tends to decrease as the population of legal service area of the library outlet decreases (see Table 3-9). For example, 95.3% of libraries with population of legal service areas greater than 500,000 provide online database services on all their workstations, as compared to only 56.0% of outlets with population of legal service areas of less than 25,000. Moreover, 71.4% of libraries with population of legal service areas greater than 500,000 provide online database services to users remotely as compared to only 29.9% of outlets with population of legal service areas of less than 25,000.

Similarly, there are differences in the offering of online database services by public library outlets by region (see Table 3-10). Overall, library outlets in the Greatlakes, Middle Atlantic, Rockies, and Southeast offer more access to online database services (range of 63.7% to 70.0% for access on all public access workstations) as compared to library outlets in New England, the Plains, the Southwest, and West (range of 45.9% to 54.0% for access on all public access workstations).

The provision of special hardware and/or software for individuals with disabilities for public access Internet services varies within public library outlets (see Tables 3-11 and 3-12). Overall, public library outlets that serve population of legal service areas of 100,000 or greater tend to provide more access to hardware and/or software for persons with disabilities (combined range of 15.3% to 47.3% for all/some workstations) than do public library outlets that serve population of legal service areas of less than 100,000 (combined range of 25.6% to 29.0% for all/some workstations). The notable exception is library outlets that serve population of legal service areas of greater than 500,000, with 15.3% (combined all/some workstations). Regionally, library outlets in the Southeast and West are more likely to provide special hardware and/or software for individuals with disabilities for public access Internet services, with 43.8% and 30.1% respectively (combined all/some workstations).

Finally, some public library outlets do block and/or filter Internet content (see Tables 3-13 and 3-14). Overall, library outlets that serve population of legal service areas of less than 25,000 are less likely to block/filter Internet content (20.1% combined all/some workstations) than are library outlets that serve population of legal service areas of greater than 25,000 (combined range of 31.6% to 32.1% for all/some workstations). Library outlets in the Southeast and Southwest are less likely to block/filter Internet content (33.5% and 37.5% respectively combined range for all/some workstations) as compared to library outlets in other regions of the nation (combined range of 8.9% to 28.9% for all/some workstations).

SUMMARY

Overall, the additional data analysis demonstrates that there is some noteworthy variation in public library Internet connectivity, funding of Internet and technology infrastructure, and public access and patron Internet services by outlet region and population of legal service area (see Tables 3-2 through 3-14).

Chapter four provides a longitudinal review of public library Internet connectivity data through a review of previous public library Internet connectivity studies sponsored by NCLIS (and at times the American Library Association).

	Availability of Subscription Database Services				
	On all workstations	On some workstations	On no workstations	Total	Services offered remotely to off-site users
Population of Legal Service Area					
Greater than 500,000	95.3% +/- 2.1%	28.7% +/- 2.1%	-	100.0% (n=322)	71.4% +/- 4.5%
250,000-500,000	73.8% +/- 4.4%	21.1% +/- 4.1%	5.4% +/- 2.2%	100.0% (n=336)	52.7% +/- 5.0%
100,000-249,999	71.3% +/- 4.5%	28.7% +/- 4.5%	-	100.0% (n=338)	60.7% +/- 4.9%
25,000-99,999	64.8% +/- 4.8%	27.0% +/- 4.4%	8.3% +/- 2.8%	100.0% (n=2,612)	49.7% +/- 5.0%
Less than 25,000	56.0% +/- 5.0%	20.0% +/- 4.0	24.1% +/- 4.3%	100.0% (n=10,151)	29.9% +/- 4.6
Unknown	71.3% +/- 4.5%	14.8% +/- 3.6%	12.9% +/- 3.4%	100.0% (n=1,375)	40.6% +/- 4.9%
Overall	60.5% +/- 4.9% (n=9,150)	20.6% +/- 4.0% (n=3,118)	18.9% +/- 3.9% (n=2,854)	100.0% N=15,134	36.4% +/- 4.8% (n=5,503)

	Availability of Subscription Database Services				
	On all workstations	On some workstations	On no workstations	Total	Services offered remotely to off-site users
Region					
Greatlakes	63.7% +/- 4.8%	21.2% +/- 4.1%	15.1% +/- 3.6%	100.0% (n=2,813)	34.9% +/- 4.8%
Middle Atlantic	70.0% +/- 4.6%	19.3% +/- 3.9%	10.6% +/- 3.1%	100.0% (n=2,377)	38.0% +/- 4.9%
New England	53.9% +/- 5.0%	15.8% +/- 3.6%	30.3% +/- 4.6%	100.0% (n=1,355)	40.8% +/- 4.9%
Plains	45.9% +/- 5.0%	17.2% +/- 3.8%	36.9% +/- 4.8%	100.0% (n=1,870)	16.4% +/- 3.7%
Rockies	64.5% +/- 4.8%	24.4% +/- 4.3%	11.1% +/- 3.1%	100.0% (n=558)	33.3% +/- 4.7%
Southeast	67.8% +/- 4.7%	20.6% +/- 4.0%	11.2% +/- 3.1%	100.0% (n=3,259)	42.5% +/- 4.9%
Southwest	54.0% +/- 5.0%	16.1% +/- 3.7	29.9% +/- 4.6%	100.0% (n=1,177)	35.7% +/- 4.8%
West	52.1% +/- 5.0%	30.1% +/- 4.6%	17.9% +/- 3.8%	100.0% (n=1,723)	46.3% +/- 5.0%
Overall	60.4% +/- 4.9% (n=9,146)	20.5% +/- 4.0% (n=3,107)	18.9% +/- 3.9% (n=2,864)	100.0% N=15,132	36.6% +/- 4.8% (n=5,534)

Note: These are weighted estimates based on a recalculation of the original weights for Metropolitan Status and Poverty to reflect Population of Legal Service Area categories. The weights and percentages are estimates and rounded during the analysis process. Therefore, there will be slight differences in both the calculated percentages and number of libraries represented through those calculations. For example, the original study estimated 15,128 connected public libraries that offer public Internet access. With the weight recalculations and rounding, the Population of Legal Service Area number of connected outlets that offer public Internet access is estimated at 15,134 for a difference of 6 outlets. With the weight recalculations and rounding, the Region number of connected outlets that offer public Internet access is estimated at 15,132 for a difference of 4 outlets.

	Availability of Special Hardware/Software			Total
	On all workstations	On some workstations	On no workstations	
Population of Legal Service Area				
Greater than 500,000	4.7% +/- 2.1%	9.6% +/- 2.9%	85.7% +/- 3.5%	100.0% (n=322)
250,000-500,000	-	47.3% +/- 5.0%	52.7% +/- 5.0%	100.0% (n=336)
100,000-249,999	-	46.4% +/- 5.0%	53.6% +/- 5.0%	100.0% (n=338)
25,000-99,999	5.7% +/- 2.3%	23.3% +/- 4.2%	71.0% +/- 4.5%	100.0% (n=2,612)
Less than 25,000	9.0% +/- 2.9%	16.6% +/- 3.7	74.4% +/- 4.4%	100.0% (n=10,151)
Unknown	10.9% +/- 3.1%	27.7% +/- 4.5%	61.4% +/- 4.9%	100.0% (n=1,375)
Overall	8.1% +/- 2.7% (n=1,232)	20.0% +/- 4.0% (n=3,023)	71.9% +/- 4.5% (n=10,879)	100.0% N=15,134

	Availability of Special Hardware/Software			Total
	On all workstations	On some workstations	On no workstations	
Region				
Greatlakes	2.3% +/- 1.5%	22.6% +/- 4.2%	75.0% +/- 4.3%	100.0% (n=2,813)
Middle Atlantic	4.0% +/- 2.0%	19.3% +/- 3.9%	76.7% +/- 4.2%	100.0% (n=2,377)
New England	2.7% +/- 1.6%	15.8% +/- 3.6%	81.5% +/- 3.9%	100.0% (n=1,355)
Plains	4.1% +/- 2.0%	11.5% +/- 3.2%	84.4% +/- 3.6%	100.0% (n=1,870)
Rockies	6.6% +/- 2.5%	17.7% +/- 3.8%	75.6% +/- 4.3%	100.0% (n=558)
Southeast	19.3% +/- 3.9%	24.5% +/- 4.3%	56.2% +/- 5.0%	100.0% (n=3,259)
Southwest	10.4% +/- 3.0%	17.2% +/- 3.8%	72.4% +/- 4.5%	100.0% (n=1,177)
West	8.1% +/- 2.7%	22.8% +/- 4.2%	69.1% +/- 4.6%	100.0% (n=1,723)
Overall	7.9% +/- 2.7% (n=1,202)	19.9% +/- 4.0% (n=3,016)	72.1% +/- 4.5% (n=10,913)	100.0% N=15,132

Note: These are weighted estimates based on a recalculation of the original weights for Metropolitan Status and Poverty to reflect Population of Legal Service Area categories. The weights and percentages are estimates and rounded during the analysis process. Therefore, there will be slight differences in both the calculated percentages and number of libraries represented through those calculations. For example, the original study estimated 15,128 connected public libraries that offer public Internet access. With the weight recalculations and rounding, the Population of Legal Service Area number of connected outlets that offer public Internet access is estimated at 15,134 for a difference of 6 outlets. With the weight recalculations and rounding, the Region number of connected outlets that offer public Internet access is estimated at 15,132 for a difference of 4 outlets.

Population of Legal Service Area	Blocking of Internet Services			Total
	On all workstations	On some workstations	On no workstations	
Greater than 500,000	9.6% +/- 2.9%	-	90.4% +/- 2.9%	100.0% (n=322)
250,000-500,000	15.8% +/- 3.7%	15.8% +/- 3.7%	68.5% +/- 4.7%	100.0% (n=336)
100,000-249,999	10.7% +/- 3.1%	21.4% +/- 4.1%	67.8% +/- 4.7%	100.0% (n=338)
25,000-99,999	9.3% +/- 2.9%	22.8% +/- 4.2%	67.9% +/- 4.7%	100.0% (n=2,612)
Less than 25,000	8.7% +/- 2.8%	11.4% +/- 3.2	79.9% +/- 4.0%	100.0% (n=10,151)
Unknown	13.9% +/- 3.5%	25.7% +/- 4.4%	60.4% +/- 4.9%	100.0% (n=1,375)
Overall	9.5% +/- 2.9% (n=1,442)	14.7% +/- 3.5% (n=2,228)	75.7% +/- 4.3% (n=11,463)	100.0% N=15,134

Region	Blocking of Internet Services			Total
	On all workstations	On some workstations	On no workstations	
Greatlakes	6.1% +/- 2.4%	14.6% +/- 3.5%	79.2% +/- 4.1%	100.0% (n=2,813)
Middle East	4.0% +/- 2.0%	17.3% +/- 3.8%	78.7% +/- 4.1%	100.0% (n=2,377)
New England	6.6% +/- 2.5%	11.8% +/- 3.2%	81.5% +/- 3.9%	100.0% (n=1,355)
Plains	3.3% +/- 1.8%	5.7% +/- 2.3%	91.1% +/- 2.9%	100.0% (n=1,870)
Rockies	17.7% +/- 3.8%	11.1% +/- 3.1%	71.1% +/- 4.5%	100.0% (n=558)
Southeast	17.2% +/- 3.8%	16.3% +/- 3.7%	66.5% +/- 4.7%	100.0% (n=3,259)
Southwest	17.2% +/- 3.8%	20.7% +/- 4.1%	62.1% +/- 4.9%	100.0% (n=1,177)
West	7.3% +/- 2.6%	18.7% +/- 3.9%	74.0% +/- 4.4%	100.0% (n=1,723)
Overall	9.3% +/- 2.9% (n=1,405)	14.9% +/- 3.6% (n=2,250)	75.8% +/- 4.3% (n=10,913)	100.0% N=15,132

Note: These are weighted estimates based on a recalculation of the original weights for Metropolitan Status and Poverty to reflect Population of Legal Service Area categories. The weights and percentages are estimates and rounded during the analysis process. Therefore, there will be slight differences in both the calculated percentages and number of libraries represented through those calculations. For example, the original study estimated 15,128 connected public libraries that offer public Internet access. With the weight recalculations and rounding, the Population of Legal Service Area number of connected outlets that offer public Internet access is estimated at 15,134 for a difference of 6 outlets. With the weight recalculations and rounding, the Region number of connected outlets that offer public Internet access is estimated at 15,132 for a difference of 4 outlets.

CHAPTER 4: DATA TRENDS IN PUBLIC LIBRARY INTERNET RESEARCH

Much of the research regarding public libraries and their involvement with and use of the Internet began with the National Commission on Libraries and Information Science (NCLIS)-sponsored *Public Libraries and the Internet: Study Results, Policy Issues, and Recommendations* (McClure, Bertot, and Zweizig, 1994). Since the publication of that report, there have been few national studies that review the state of public library Internet connectivity, issues, and services. Indeed, the predominant studies include:

- *Public Libraries and the Internet: Study Results, Policy Issues, and Recommendations* (McClure, Bertot, and Zweizig, 1994). This study examined public library system Internet connectivity issues, and was sponsored by NCLIS.
- *The 1996 National Survey of Public Libraries and the Internet: Progress and Issues* (Bertot, McClure, and Zweizig, 1996). This study examined public library system Internet connectivity issues, and was sponsored by NCLIS.
- *The 1997 National Survey of U.S. Public Libraries and the Internet: Final Report* (Bertot, McClure, and Fletcher, 1997). This study examined public library system Internet connectivity issues, and was co-sponsored by NCLIS and the American Library Association.
- *The 1998 National Survey of U.S. Public Library Outlet Internet Connectivity: Final Report* (Bertot and McClure, 1998). This study examined public library outlet Internet connectivity issues and was co-sponsored by NCLIS and the American Library Association.
- *Public Libraries and the Internet 2000: Summary Findings and Tables* (Bertot and McClure, 2000). This study examined public library outlet Internet connectivity issues and was sponsored by NCLIS.
- *Kids and the Internet: The Promise and the Perils* (1998). Hearings held by NCLIS on issues regarding children and their use of and involvement with the Internet.
- *Survey of Internet Access Management in Public Libraries* (Library Research Center, Graduate School of Library and Information Science, University of Illinois, 2000). This study used a survey approach to assess the extent to which and mechanisms through which public libraries manage their public access Internet services (e.g., through acceptable use policies, filtering, or other approaches).

Additional studies related to issues of Internet connectivity in general that may not have direct public library application include several reports on the Digital Divide by the National Telecommunications and Information Administration (as discussed in Chapter 2):

- *Falling Through the Net: A Survey of the "Have Nots" in Rural and Urban America* (1995);
- *Falling Through the Net II: New Data on the Digital Divide* (1998);
- *Falling Through the Net: Defining the Digital Divide* (1999);

- *Advanced Telecommunications in Rural America: The Challenge of Bringing Broadband Service to All Americans* (2000); and
- *Falling Through the Net: Toward Digital Inclusion* (2000).

This chapter identifies and reviews selectively a number of public library and related Internet studies so as to provide a baseline perspective of public library Internet data. The chapter then identifies issues remaining regarding the continued study of public library Internet activities.

CONNECTIVITY

Public libraries increased their Internet connectivity steadily since 1994 (see Figure 4-1). At that time, 20.9% of public library *systems* had an Internet connection of some type. Though the point of data collection shifted to the *outlet* level in 1998, public libraries continued to increase their connectivity. Indeed, as of June 2000, 95.7% of public library outlets have an Internet connection of some type.

At the same time that public libraries increased their Internet connectivity, they augmented their Internet connection speeds (see Figure 4-2). For example, 82.9% of public library *systems* had Internet connection speeds of less than 56kbps in 1997. Less than 3% (2.7%) of public library *systems* had Internet connection speeds greater than 56kbps in 1997. This compares to 53.6% of *outlets* that have Internet connection speeds of greater than 56kbps in 2000, and 21.3%

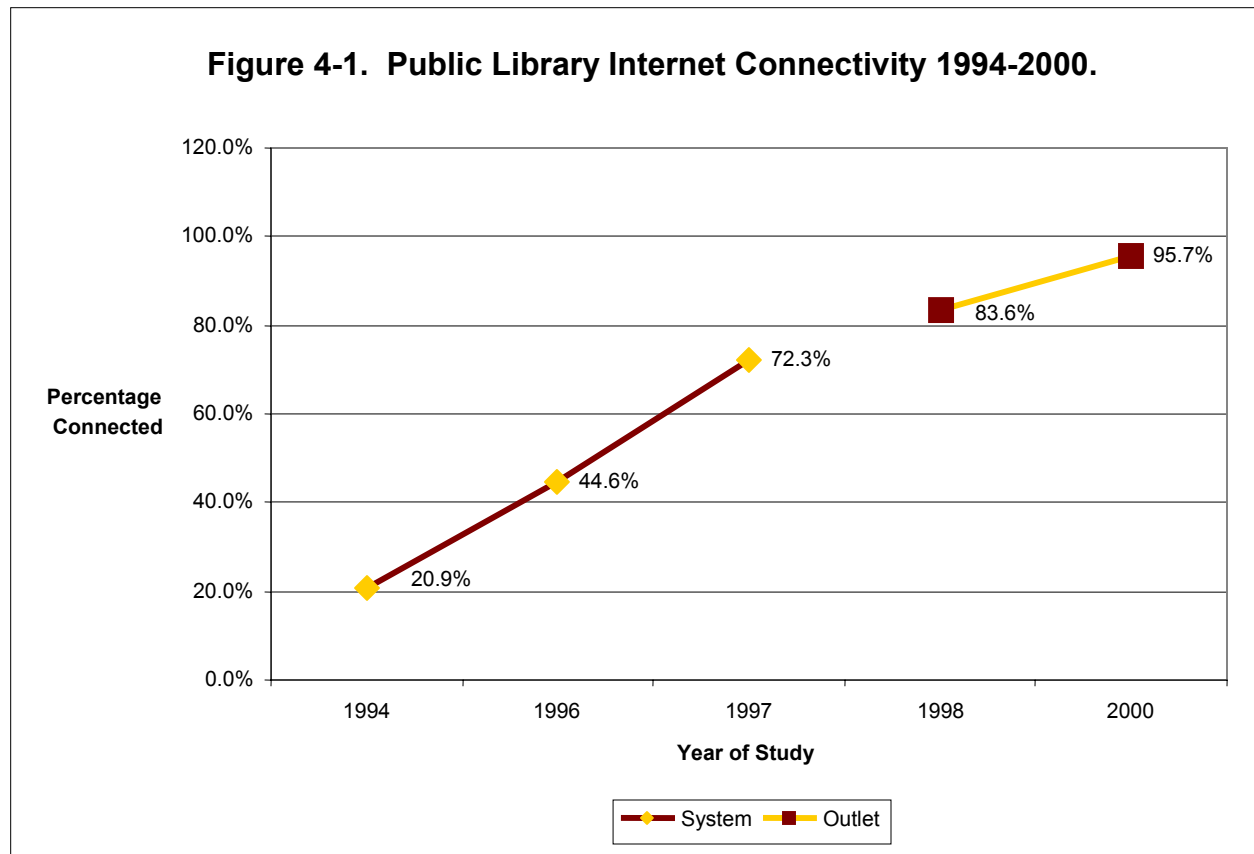
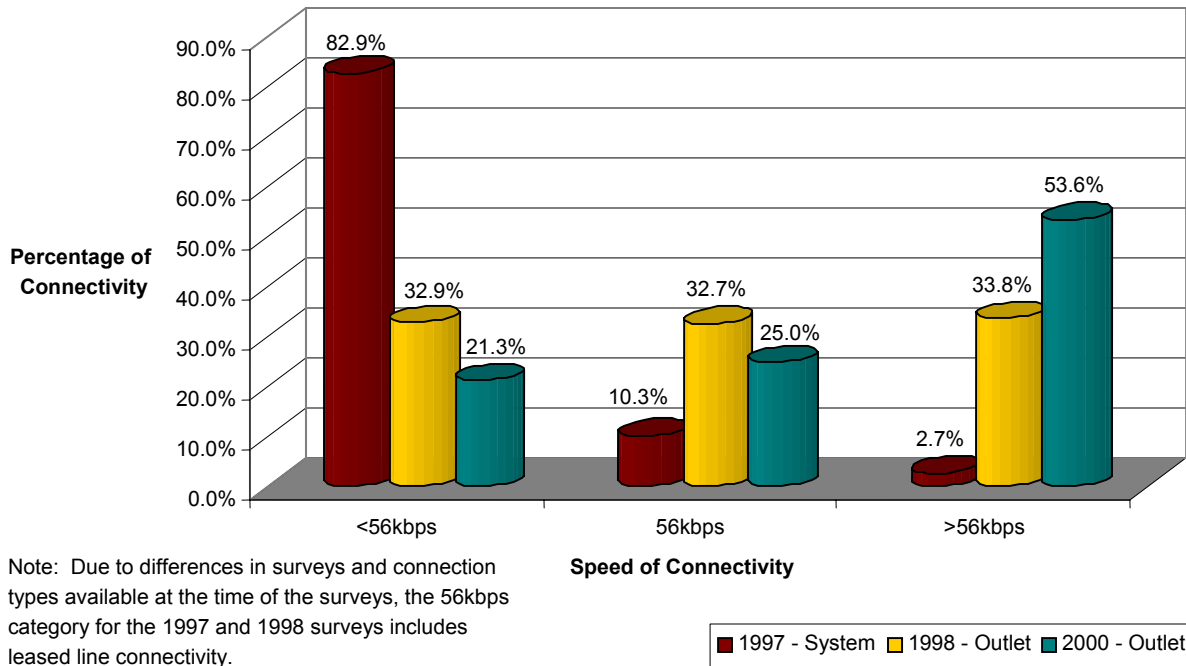


Figure 4-2. Maximum Speed of Public Access Internet Connectivity.



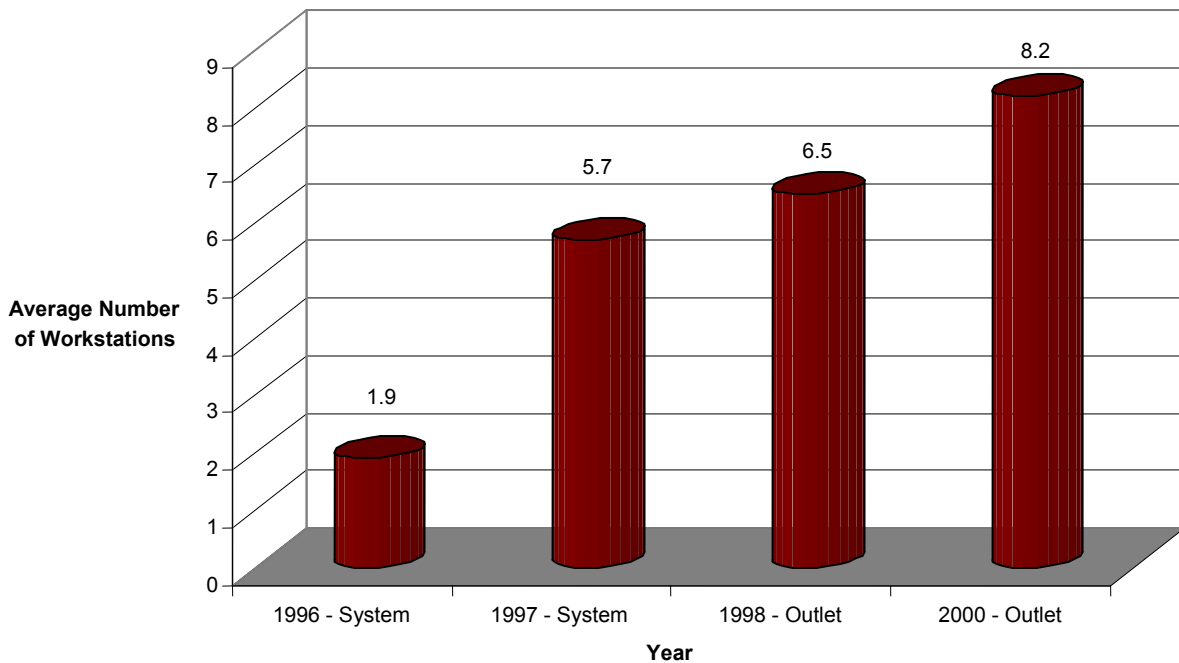
of public library *outlets* that have Internet connection speeds of less than 56kbps in 2000 (readers can find the details of the variation in connectivity speed in Chapter 3 and Appendix A of this report).

Public libraries also increased the average number of public access workstations that they provide for public access Internet services. As Figure 4-3 shows, public libraries provide an average of 8.2 workstations per *outlet* in 2000 – this compared to just 1.9 workstations per library *system* in 1996.

Though not related to public library Internet connectivity, the Digital Divide series of reports conducted by the National Telecommunications and Information Administration (NTIA) and the Bureau of the Census demonstrate that computing and Internet connectivity in the home continue to increase, though there are disparities by race and income (as detailed in Chapter 2). Speed of home Internet connectivity also improved, but differs by geography – with rural household connections being slower than urban household connections. For example (National Telecommunications and Information Administration, 2000):

- Households with computers rose to 51.0% from 42.1% between December 1998 and August 2000;
- Households with Internet access rose to 41.5% from 26.2% between December 1998 and August 2000;

Figure 4-3. Average Number of Public Access Workstations.



- Only 10.7% of households had broadband-speed Internet access (defined as a minimum of 200kbps by the Federal Communications Commission and discussed in Chapter 2), with a range of 12.2% in urban (central city) areas to 7.3% in rural areas.

Thus, as public libraries enhance their Internet connectivity so do U.S. households. Discrepancies do exist, however, by geography (urban/rural) and other library and household demographics.

PUBLIC ACCESS AND PUBLIC ACCESS SERVICES

Public library outlets have a strong tradition of providing public access to the Internet. In 1998, 87.7% of connected public library outlets provided public access to the Internet. In 2000, 94.5% of public library outlets provided public access to the Internet. Over time, public libraries added a number of public Internet access services for patrons. Some of the trends in service provision are discussed below.

Services to Special Populations

Persons with Disabilities

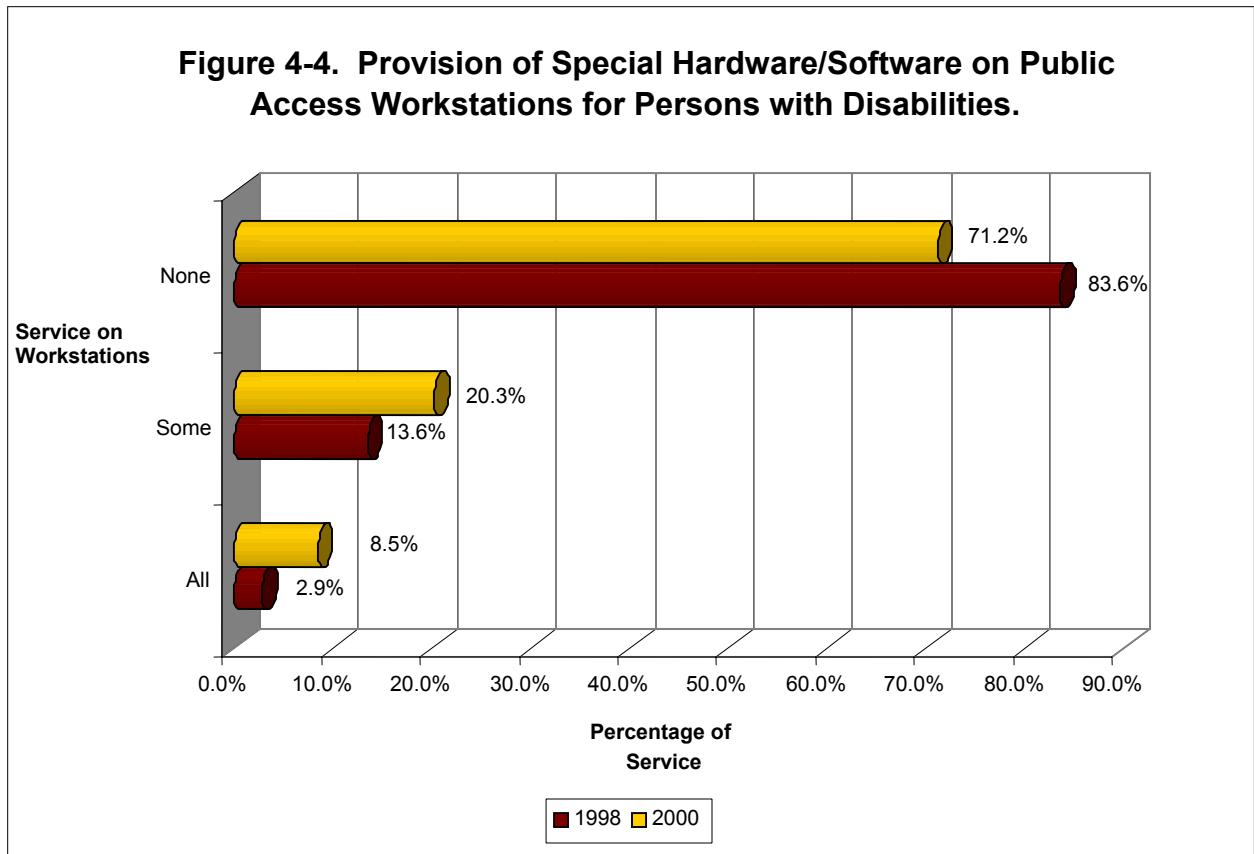
Beginning with the 1998 public library Internet study, the national survey included a question regarding the provision of special hardware/software on public Internet access workstations for

persons with disabilities. As Figure 4-4 shows, the provision of special hardware/software for persons with disabilities improved in public library outlets since 1998, but the overall percentage is low – as of June 2000, 71.2% of public library outlets provide no special hardware/software for persons with disabilities on their public access Internet workstations.

The 2000 NTIA *Toward Digital Inclusion* study provides information regarding Internet access and computer use among people with disabilities (NTIA, 2000). The data from that study indicate that:

- Households with individuals with disabilities are half as likely to have Internet access as non-disability households, with 21.6% and 42.1% respectively, and
- Internet access in households with individuals with disabilities differs by the type of disability.⁶ 31.2% of households with learning disabled individuals have Internet access as compared to just 16.0% of households with individuals with walking problems.

It is important to note that individuals with disabilities are not likely to have Internet access outside the home (e.g., through place of employment). Indeed, 71.6% have no access to the Internet at all, with a range from 67.8% for individuals with learning disabilities to 81.5% for individuals with walking problems.



Children and Youth

Little is known about Internet-specific programs and services for children and youth within public libraries. NCLIS did hold a hearing in 1998 regarding Children and the Internet that resulted in the publication *Kids and the Internet: The Promise and the Perils* (NCLIS, 1998). While the forum provided an excellent opportunity to identify, define, and consider issues regarding children/youth and the Internet, no national data emerged regarding public library Internet services regarding children/youth. Among the issues identified and discussed during the forum were the:

- Ability of public libraries to equalize access to network-based services and resources;
- Ability of libraries to serve as gateways to knowledge that goes beyond the walls of the libraries and the communities in which the children/youth reside;
- Potential erosion of the privacy of children when using online services and resources;
- Peril of accessing and viewing potentially offensive material through public access Internet services;
- Need for parental supervision of children/youth as they use library public access Internet services;
- Physical access to public equipment – adequate number of workstations and other issues; and
- Numerous other topics.

The above serve to illustrate the nature and content of the hearing, but readers should note that the hearing engaged numerous stakeholder groups, librarians, policy makers, researchers, and others during the sessions. The hearing also offered a number of solutions to the issues raised throughout the sessions

Internet Instruction

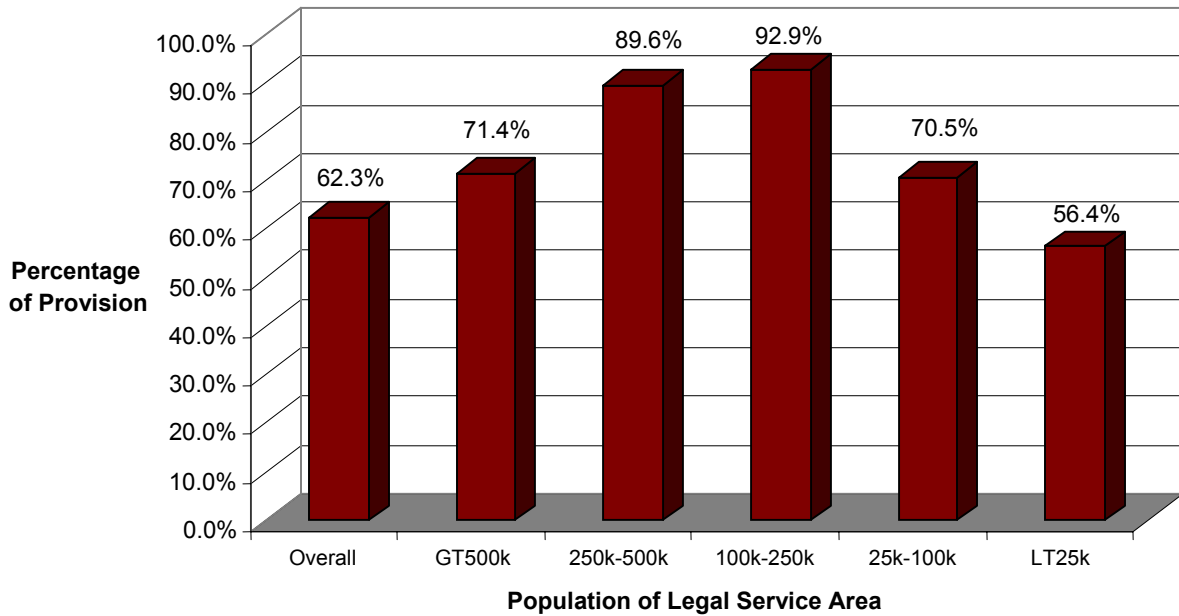
A substantial percentage of public library outlets provide Internet training services. As indicated in Figure 5-5, 62.3% of public library outlets provide Internet training services. Training services vary by the size of the outlet, with very large (greater than 500,000 with 71.4%) and small outlets (less than 25,000 with 56.4%) providing fewer training services overall than other outlets.

Libraries provide training services to a number of targeted populations that include:

- Adult public, with 55.1%;
- Library staff, with 44.3%;
- Children/youth public, with 43.7%;
- Local business, with 11.0%;
- Local government, with 9.1%; and

⁶ Readers should review the NTIA report for the definitions used for the various types of disabilities.

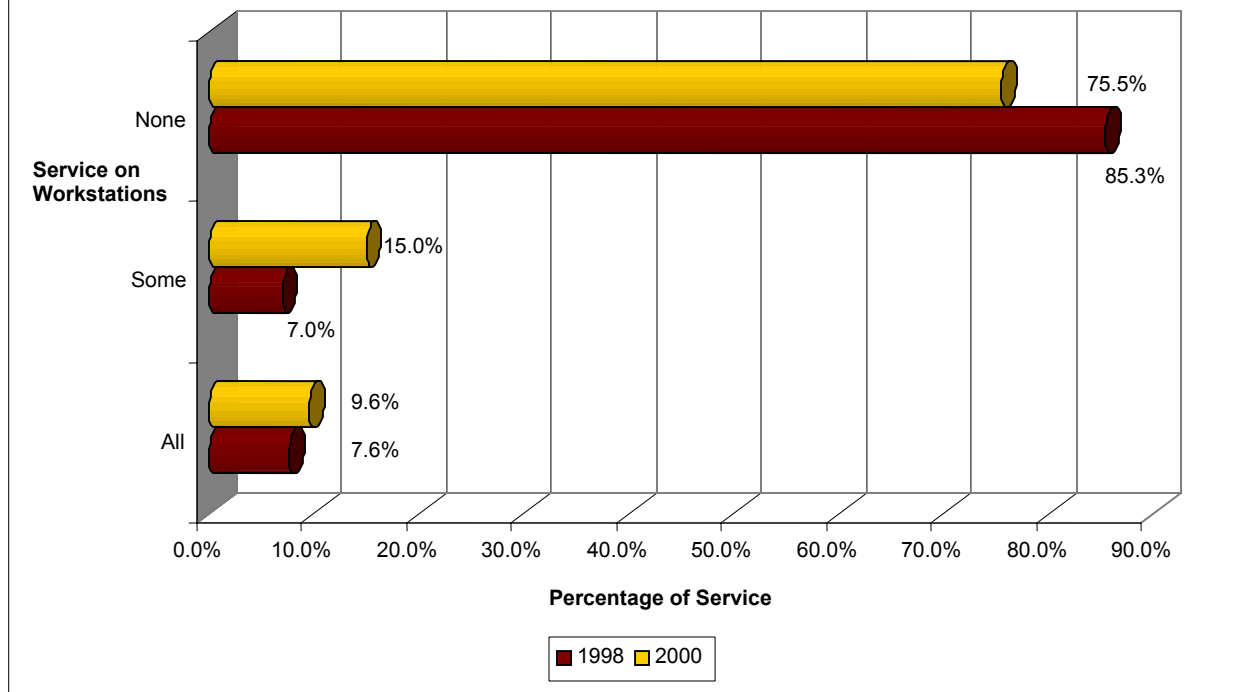
Figure 4-5. Public Library Outlet Provision of Internet Training by Population of Legal Service Area (2000).



- Other targeted populations, with 14.3%.

Thus, public library outlets provide training to a number of different populations within their communities.

Figure 4-6. Provision of Internet Blocking on Public Access Workstations.



Filtering/Blocking of Internet Content

Overall, public library outlets (75.5%) do not block/filter their public access Internet services (see Figure 6). This is, however, an increase in blocking/filtering from 1998, when 85.3% of public library outlets did not filter/block their public access Internet services. In the 2000 study, 15.0% of public library outlets reported blocking/filtering on *some* of their public access Internet workstations, while 9.6% block/filter on *all* of their public access Internet workstations.

A study conducted by the Library Research Center in the Graduate School of Library and Information Science at the University of Illinois (Library Research Center, 2000) found similar results from a 1999 survey of public libraries. In particular, the study found that 83.2% of responding libraries did not filter their public access Internet workstations and 16.8% of responding libraries use filtering software on some or all of their public access Internet workstations.

ISSUES AND CONCLUSIONS

The above selective longitudinal analysis of public library and related Internet connectivity, use, and access data reflect a number of issues that require attention:

- There exists no comprehensive, coordinated approach to public library Internet connectivity research. At best, the research conducted concerning public library involvement with and use of the Internet is ad hoc, sporadic, and lacking in consistency. Other than the NCLIS studies, there are no comparable longitudinal data available.
- There is no coordination across studies. NTIA conducts its *Falling Through the Net* series in isolation from the NCLIS/ALA-sponsored public library Internet studies, for example. One has to consider the potential benefits of collaboration for such studies.
- There is little coordination across groups. Related to the coordination of ongoing studies is the collaboration and/or coordination across stakeholder groups and organizations. While each organization may have a different emphasis, there is clearly overlap in interests regarding library Internet activities between NCLIS, ALA, and the Institute of Museum and Library Services (IMLS) to name a few. It should be noted that NCLIS and ALA did co-sponsor the 1997 and 1998 public library Internet studies.
- Existing data, though limited, is not always comparable. Although 1994-2000 series of NCLIS public library Internet studies do yield some longitudinal data, the approaches changed (e.g., from systems to outlets) to better meet the needs of the research questions and policy environment. Thus, even within this series, there is a limit to the ability to make longitudinal comparisons. The ability to compare data across different studies and research is more difficult as the various research groups use different sampling techniques, approaches, questions, and analysis techniques.
- The studies provide an incomplete picture of public library Internet connectivity. To date, the studies conducted provide limited snapshots of public library Internet connectivity.

Internet connectivity in public libraries, and related issues, are complex topics that require a number of approaches and studies to ascertain in a meaningful and comprehensive way. While the studies conducted to date do provide valuable data regarding public library Internet connectivity, these issues point to the need for the development of a research agenda and infrastructure that can provide a better and more robust understanding of public library Internet connectivity and connectivity-related issues.

Based on the issues identified in this chapter and throughout this report, Chapter 5 makes specific recommendations to NCLIS regarding the future of public library Internet connectivity research, the library policy environment, and the role of NCLIS in coordinating a research agenda that informs policy makers, professionals, and researchers as to the public library Internet context.

CHAPTER 5: RESEARCH ISSUES AND STRATEGIES

This chapter discusses a number of key research issues and strategies that require attention if the role of libraries, and especially public libraries in the evolving networked environment are to be better understood, financially supported, and integrated into library services to support a range of possible national goals and objectives. The topics discussed here are based, in part, on the previous material and background information provided in Chapters 1-4. Overall, this chapter suggests the importance and need for a nationally coordinated effort to support research broadly related to libraries and library services.

ISSUES RELATED TO RESEARCH AND DATA COLLECTION ACTIVITIES

This study identified a number of data collection activities and research needs for policy makers, the library profession, and other communities. Initial areas of research and data needs include:

- Issues related to the digital divide. While the National Telecommunications and Information Administration (NTIA) has conducted a number of studies related to the digital divide that provide key data regarding home computer technology and Internet access along a number of demographic variables (e.g., income, race, gender, urban/rural, and persons with disabilities), there is a need to further explore issues regarding the digital divide. Key research questions regarding the digital divide that require additional exploration are:
 - Are there digital divide issues that apply to special populations (e.g., seniors, persons with disabilities, other)? If so, what are those issues?
 - What roles do libraries play in the digital divide in general and in meeting the needs of special populations in particular?
 - What are the critical success factors for libraries to engage in digital divide resolution activities?
 - What are the barriers that prevent libraries from engaging in successful digital divide resolution activities (e.g., computing technology, bandwidth, trained staff)?
- Moving beyond connectivity data. Although the Public Library Internet studies provided first time, longitudinal, and important data regarding public library Internet connectivity, they focused primarily on the Internet connectivity infrastructure of public libraries – Internet connection, workstations, bandwidth, and funding issues. With the 2000 study finding that 95.7% of public libraries have an Internet connection, it is time to move beyond public library connectivity to Internet-based library services – e.g., training, services to special populations (e.g., seniors, persons with disabilities, children, Native Americans), filtering/content blocking, outcomes, and service quality, to name a few. As with the leadership NCLIS demonstrated by conducting the first studies of public library

Internet connectivity, the Commission has an opportunity to establish leadership in the study of critical areas of Internet involvement and use in public libraries.

One such area is continuing the research role of the Commission, in partnership with the authors and IMLS, in the area of public library network statistics and performance measures. As libraries increase their use of and reliance on network-based services and resources, such statistics will describe the use of and involvement with library networked services. This key area of research and data collection requires continued development, support, and innovation.

- Broadening the scope of Internet studies beyond libraries. There are a number of community technology centers – boys and girls clubs, community centers, senior centers, for example – that provide access to network-based services such as training, computer technology, and Internet connectivity. It is important to study the role(s) that such centers play in the connectivity mosaic of users, the relationship of libraries in the connectivity of users, and the interrelationship between the library and other community-based organizations in providing access to network-based resources and services to users.
- Conducting longitudinal studies where possible. While it is important to collect one-time data that meet the needs of particular research interest or policy issues, it is also important to provide a longitudinal perspective regarding research areas that inform policy makers, researchers, and others as to the changes over time in connectivity-related issues. Such data can inform various parties about trends, key issues, and evolving services over time.
- Coordinating the data collection activities of various regular and on-going library (and other, where possible) surveys. NCLIS, in its relationship with the library statistics program managed by the NCES/U.S. DOE, plays a critical role in a number of library-related data collection efforts – academic, public, and school media. To the extent possible, there is a need to create a core set of survey questions that cut across the various survey instruments so as to compare various connectivity and other data of interest across library types and communities.
- Need for a national geo-based database of public library statistics and other information. Currently, there is no comprehensive and integrated national database of public library statistics and other information that would be important to describe and analyze a number of U.S. public library attributes. A nationwide inventory of data related to public library outlets and administrative entities has existed for several years through the Federal-State Cooperative System (FSCS) and National Center for Education Statistics, U.S. Department of Education (NCES/U.S. DOE). But the inventory cannot be utilized for any substantive decision making purpose at the local, regional, or national levels as this inventory is not tied to any usable external data (e.g., socioeconomic, population projections, relevant library related research, geo-based data, etc.).

Furthermore, information-related professionals continually find themselves in the position of debating and advocating a range of policy issues related broadly to the access to, management of, and use of the information. Oftentimes, they are not prepared to enter these policy debates because of an inadequate body of knowledge, data, and evidence related to those issues. Examples of such issues include filtering, E-rate, access to electronic government information, impact and use of Library Services and Technology

Act (LSTA), Internet development, telecommunications and technology infrastructure, and others.

Of particular need is the timely release of available public library data. While NCES strives to reduce the time lag between data submission and data release, there is still a substantial gap (two years, on average) between when states submit their data and when NCES releases the compiled data. There are a number of factors that contribute to this delay in data release. The final result, however, is often data that are simply too old to be useful in informing the library-related policy debates.

The above indicate several key roles that NCLIS can play in the development, continuation, and maintenance of a broad ranging research agenda. Such endeavors would provide the Commission with important and valuable data to inform policy makers, researchers, and librarians along a number of topics.

A key issue in the ability of the Commission to engage in these research activities is the funding and maintenance of the Commission's library statistics program. There is a need to fund the statistics program adequately to engage in these activities, provide adequate support and professional staff, and enhance the Commission's library statistics program infrastructure to meet the challenges that such research and data collection activities will require.

ISSUES RELATED TO EDUCATION AND TRAINING

To a large degree issues related to education and training of information professionals have not received adequate attention. While schools of library and information studies (as well as other programs) continue to evolve in their training of professionals to work in the networked environment, there are significant numbers of staff currently working in libraries that have received little to no ongoing instruction related to deploying and using technology; assisting users in networked and telecommunications services; integrating networked-based services with traditional services; planning and evaluating networked services; and others.

At issue is who or what is responsible for ongoing training and education of library staff to stay current with networked services and information technology developments? Where are resources to support such programs? How can a national program of training and education be developed such that every library does not need to re-create training programs for its staff? How can national training efforts be deployed such that training does not need to be localized in terms of delivery mechanisms?

The issues of education and training raised in this section have less to do with the training of new information professionals at the graduate level and more to do with how to keep existing staff versed in technology and network developments and applications. The Commission may wish to consider if it has a role to play in assessing educational and training needs in this area and the degree to which strategies can be developed to address these needs.

ISSUES AND STRATEGIES RELATED TO COMMUNICATION, COORDINATION, AND DISSEMINATION

The policy analysis and review of research activities indicate that there are a number of areas in which there is a need to coordinate, exchange findings, and review and develop policy recommendations, strategies, and approaches. These include the:

- Holding of issue/topical hearings. In the past, NCLIS has conducted a number of policy hearings on a wide range of topics. These include hearings on Kids and the Internet, ADA, status of schools and school libraries, and others, all of which resulted in overall key issue and stakeholder issue identification, testimony, research needs identification, and/or policy recommendations. There is a need to convene such a hearing on the policy research needs for library Internet-related activities.
- Holding of regional “town hall” meetings. Such meetings would enable the identification of key policy issues related to library Internet use and involvement facing communities across the country. Rather than formal hearings, such meetings would present a forum through which key stakeholder communities, as well as the general public, could engage in an exchange of issues, ideas, and considerations with the library, policy making, and other constituencies.
- Conducting of regular policy forums. NCLIS has the legislated mandate to hold forums and bring various constituency groups together on information policy-related issues. Such forums, targeted to specific topics, could serve as a means through which to bring together key stakeholder groups (e.g., the American Library Association, community-based organizations, policy making representatives) to discuss policy issues, generate policy recommendations, and develop policy implementation action plans. Sample topics might include the Digital Divide, ADA-related Internet access issues, and E-government proposals related to digital government information activities (as per the proposed E-Government Act of 2001 (S. 803).
- Conducting research and data forums. A number of different agencies and organizations – Census, National Telecommunications and Information Administration (NTIA), Department of Education, Schools and Libraries Division, Institute of Museum and Library Services, Federal Communications Commission, NCLIS, and the American Library Association, to name a few – have data and research needs on a number of common topics. These topics include the Digital Divide, digital literacy, Internet connectivity by community technology centers (e.g., public libraries, community centers), broadband, and technology use and needs by special populations (e.g., persons with disabilities). Bringing these groups together, though they may have differing uses for research findings and data, to collaborate, coordinate, and pool resources to conduct studies will result in a select number of focused, well funded, and thorough studies that can serve to inform policy makers, agencies, the library community, and others on a wide range of topics and issues.
- Developing various publications/products and a multi-faceted method for distributing research findings and data to a wide range of groups that include policy makers, library organizations, and agencies. These products, some print, some electronic, and of various types (e.g., reports, brochures, bookmarks, broadsides, etc.) can serve a number of purposes that include the education of policy makers and others regarding a particular

topic, summary study findings, policy awareness, and key issue identification. Such products can demonstrate the involvement of NCLIS with a number of policy- and research-related activities.

As evidenced, there are a number of communication, coordination, and dissemination activities in which the Commission can play a central role. The Commission will need to consider which of the above activities best fit its resources, goals, and objectives.

NEED TO CLARIFY NATIONAL GOALS FOR PUBLIC LIBRARIES

A key message in the 1987 publication, *Planning and Role Setting for Public Libraries* (Chicago: American Library Association) was that public libraries cannot be all things to all people all the time. In fact, public libraries continue to find themselves in the position that the local community and federal programs expect libraries to be all things to all people all the time. The limited funding available to most public libraries requires that priorities be set and that libraries support only the “most important” services and activities.

Is the public library expected to be a national mechanism in the fight on illiteracy? Is the public library expected to be the doorway to E-government services for those without equipment and training elsewhere? Are public libraries to serve as local training centers for those to learn how best to use the Internet and the networked environment as suggested in the E-Government Act of 2001. Should they also serve as an after school resource center where national educational priorities and goals can be better supported?

While state and local determination of public library roles and goals is important, equally important is some clarification as to national public library roles and goals. The sense that public libraries provide national benefits to society also suggests that some better clarification of national goals and priorities for public libraries may also be necessary. To some degree public libraries receive “unfunded mandates” to support a range of societal goals – such as literacy programs. Should there be national goals for public libraries, there is a need to make those goals explicit and engage in activities and resource provision that supports those goals.

ESTABLISH AN EFFECTIVE LIBRARY PRESENCE IN THE DEVELOPMENT OF INFORMATION POLICY

A key activity of the Commission is to provide advice to Congress and the President regarding libraries and information services in this country. But the library presence in national information policy debates is limited and has nowhere near the resource support that other interest groups such as the telecommunications industry has. Thus, the Commission may wish to consider possible mechanisms by which the library community can have a greater impact and a more visible presence in the development of information policy.

A number of the communication strategies offered earlier in this report can play an important role in developing such a presence. But too often there are conflicting points of view among the

various library groups as to a particular policy position. Key stakeholders include ALA and its various member groups, a range of other national and state library associations, IMLS, COSLA, ULC and others. For the library community to have a better impact on policy development some type of coordinating mechanism may be necessary, because policy makers respond better to consensus. However, that doesn't mean there aren't real differences between various groups. How to resolve is a vital question.

In addition to coordinating mechanisms, there needs to be a clear, coherent set of policy recommendations as to what, specifically, the Commission (and others) recommend be done about individual policy issues. Such recommendations require study, data, analysis, input from other stakeholder groups, etc. Given the limited resources and staff of the Commission, choices and priorities may need to be made as to which policy areas are most important for the Commission and which policy areas best lend themselves to consensus building among other interested parties in the library community.

DEVELOP NEW MEASURES TO DESCRIBE THE IMPACT AND USE OF NETWORKED SERVICES IN PUBLIC LIBRARIES

To some extent, the federal government lacks a coordinated and coherent approach for policy analysis, research, and statistics related to library and information services. Library program funding for collecting national library statistics largely falls under the Department of Education through the National Center for Education Statistics (NCES), administered by NCLIS.

The *Museum and Library Services Act of 1996* moved research and related programs to the Institute of Museum and Library Services. The role of the Department of Education regarding national data collection efforts and how it interacts with NCLIS and IMLS is not clear. The original wording to the act passed some of the responsibility of guidance to NCLIS, but the future of this agency is not clear since the President's FY2002 budget did not recommend funding. So the responsibility of library program evaluation and collecting national statistics at this time is unclear.

Role of Federal Agencies

NCLIS has some responsibility for the evaluation of federal library service programs. Public Law 91-345, *An Act to Establish a National Commission for Library and Information Sciences*, established the U.S. National Commission for Library and Information Science (NCLIS) as an independent agency within the executive branch. This agency is to recommend plans for providing the U.S. with library and information services to meet the needs of U.S. citizens. NCLIS is to promote research and develop activities to extend the Nation's library and information handling capacity. If, however, NCLIS is not funded for FY 2002 it is not clear whom or what will assume the responsibilities currently held by NCLIS.

In addition to federal government studies generating library statistics, most states have state library agencies conducting a range of research and evaluation studies as well. IMLS oftentimes provides support for the state library agencies to conduct such research through LSTA funds.

Part of the stipulation for receiving IMLS funding is that the states must have an information plan in place that includes an evaluation process. A number of the state library agencies post these studies and reports on their websites. Oftentimes, however, there is only limited coordination and integration of the work done by the state library agencies in terms of a national context.

Lack of Coordination

The American Library Association (ALA) and other information-related professional associations continually find themselves in the position of debating and advocating a range of policy issues broadly related to the access to, management of, and use of information in the United States. Oftentimes, the information professions are ill prepared to enter these policy debates as they lack an adequate body of knowledge, data, and evidence related to these issues. At present, typical policy topics affecting the information professions include filtering, E-rate, access to electronic government information, impact and use of Library Services and Technology Act (LSTA), reauthorization of the Paperwork Reduction Act (PRA), copyright and intellectual property rights, Internet development, long-term preservation of electronic records, role of the Depository Library Program, and others described in this section of the report.

At present there is no coordinated effort to investigate and study these policy issues so as to inform the profession in a timely, accurate, and ongoing manner as to the nature of the issues and their impacts on libraries and information centers, the broader information professions, and the citizens of this nation. Simply stated, there may be a need for information professionals, information-related organizations, policy makers, and others to support, advise, and have access to a research institute and/or clearinghouse that can provide a stable and high quality policy research presence in the broad areas of federal information policy.

Need for a National Conference

Information science researchers, policy makers, and others to explore a range of topics related to research needs regarding federal information policy issues. More specifically, such a conference could:

- Identify existing knowledge and data sources related to current and future information policy issues that affect the profession and the citizens;
- Discuss and describe specific information and research needs necessary to address the various information policy issues; and
- Consider possible strategies to establish a mechanism for conducting ongoing policy research, for informing the information professions on the status and impact of selected information policy issues, and for providing a clearinghouse of information and data for use in debating these issues.

Overall, the purpose of the conference would be to determine how the information professionals and related organizations can best establish an ongoing formal means (and presence) to conduct policy research and engage successfully in national information policy debates. Other outcomes would

include proposals for establishing some formal structures and programs to conduct information policy research and a listing of key information policy topics/issues requiring research attention.

Benefits of a National Conference

The library and information professions regularly find themselves unable to respond quickly and accurately to both threats and opportunities in terms of a range of policy issues broadly related to library/information policy. A number of professional associations including the American Library Association, the Association of Research Libraries, the American Society for Information and Technology, and the American Association of Law Librarians (to name a few) either have offices or committees that follow selected policy areas. But these efforts are rarely coordinated and in most instances there is inadequate research available to support particular positions.

The proposed conference would be a step in recent times to develop a strategy to better initiate and respond to federal library/information policy initiatives. It would promote improved coordination and cooperation among the various stakeholders in assessing and responding to these policy initiatives. And perhaps most importantly, the conference might provide a research base by which ongoing research and policy analysis can be in place, providing information professionals with data that inform various policy debates, issues, threats, and opportunities affecting the library/information professions. The key issue with this topic is how best to coordinate, research, and better understand the range of the information policy issues that affect libraries and related information centers.

Suggested Venue and Cost Estimate

The consultants suggest using the leadership and sponsorship of the Information Institute at Florida State University (FSU), NCLIS, ALA, and selected funding agencies, the Information Institute at FSU would organize such a conference at FSU during the summer of 2002. Approximately 20-40 individuals representing policy researchers, government officials, professional associations, and other experts would be invited to attend the conference. The conference would include a combination of structured and unstructured meetings and discussion sessions.

In addition, the Information Institute would commission three-five white papers to inform the conference proceedings that would (1) summarize existing data and knowledge on selected information policy topics, (2) identify specific information and research needs related to these issues, and (3) offer formal organizational approaches to better coordinate availability to policy information and research efforts regarding these issues. The conference would conclude with developing a set of “next steps” to build on conference findings and recommendations.

The consultants estimate a budget of \$50,000 to \$75,000 would be necessary to manage/ conduct the conference, obtain necessary conference facilities, support travel for selected invitees, commission the white papers, and obtain the services of a conference facilitator who

would also produce a summary of conference results and recommendations. Dissemination of conference activities would be supported via a website as well as presentations at various professional associations and meetings as appropriate.

ENHANCING LIBRARY SERVICES IN THE NETWORKED ENVIRONMENT

This report identifies a range of topics, policy issues, data, findings, and recommendations that the Commission may wish to consider as it reviews and proposes policy and strategies to enhance library services in the networked environment. As suggested throughout the report, libraries have a number of challenges and opportunities to consider as they make the transition into the networked environment. It is possible to facilitate this transition with:

- A federal information policy environment that recognizes the importance of and supports the multiple roles that libraries play in the American society;
- Better coordination across federal agencies in terms of their policies, program goals, and procedures for implementing those programs (e.g., E-rate) – to better support libraries in general and public libraries in particular;
- The maintenance of a timely and accurate national database – or collection of databases – of information (more than just statistics) that describes public library services and resources and can serve as a base from which to conduct meaningful and ongoing analysis and evaluation of library activities and services;
- Enhanced national programs such as E-rate, LSTA, ESEA, the Depository Library Program, etc. that provide direct support to libraries to assist them promote E-government initiatives at the federal, state, and local levels; and
- The development of valid, reliable, and standardized statistics and measures that describe use, users, uses, outcomes, and quality of library services in the networked environment.

The last strategy is especially important as the Commission cannot offer accurate and timely policy advice to Congress and the President without useful descriptive data.

These suggestions, of course, are only a beginning – other strategies and issues appear throughout this report. Clearly, the Commission cannot attack all the policy issues and opportunities to enhance libraries offered here. The Commission can, however, identify a strategic initiative and marshal its limited resources on specific priorities over the next three years. Agreement on a set of strategic initiatives will allow the Commission to tackle those issues and opportunities that appear to have the greatest payback to improve libraries so that libraries can better meet the needs of the American public as the networked environment continues to grow and evolve.

**APPENDIX A:
PUBLIC LIBRARIES AND THE INTERNET 2000 REPORT**

**PUBLIC LIBRARIES AND THE INTERNET 2000:
SUMMARY FINDINGS AND DATA TABLES**

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INTRODUCTION

The U.S. National Commission on Libraries and Information Science (NCLIS) commissioned a *Public Libraries and the Internet* study for the year 2000. This study both updated previous NCLIS-sponsored studies (1994, 1995, 1996, 1997, and 1998)¹ and explored new territory regarding public library involvement with and use of the Internet.

In particular, the 2000 *Public Libraries and the Internet* study sought to (see Appendix B for a copy of the survey form):

- Provide longitudinal data regarding the percentage of public libraries connected to the Internet;
- Provide longitudinal data regarding the percentage of public libraries that provide graphical public access Internet services;
- Provide longitudinal data regarding the speed of library public access Internet services;
- Explore the funding sources that support public library Internet connectivity and information technology infrastructure development;
- Explore the level of use of online database resources, blocking technologies, and special software/hardware for individuals with disabilities by public libraries that provide public Internet access services;
- Explore the extent and nature of library public access Internet acceptable use policies; and,
- Explore the extent and nature of library Internet training services offered by libraries to various types of library users and staff.

These areas formed the basis for the survey form developed by the consultants in conjunction with NCLIS staff.

STUDY APPROACH AND METHOD

The 2000 study updated and re-geocoded all public library outlets using the 1997 public library dataset produced by the National Center for Education Statistics (NCES) through the Federal-State Cooperative System (FSCS). The 1997 file was the most current release available to the consultants. Using geographic information system-based techniques, a research team at Florida State University was able to successfully geocode 16,004 public library outlets in terms of their poverty (defined as less than 20%, 20%-40%, and greater than 40%) and metropolitan status (urban, suburban, and rural) using the same techniques as for the 1998 *Public Library Internet* study.² From the 16,004 geocoded outlets,³ the consultants drew a sample of 1,500 outlets in proportion to their percentages in the poverty and metropolitan status categories.

The consultants developed and pre-tested a number of survey questions for inclusion on the 2000 survey form. These pre-test methods included:

- Distributing and discussing the draft survey with state data coordinators at the FSCS professional development conference in March 2000;
- A focus group during the Public Library Association meeting in March 2000 with approximately 15 public librarians, state librarians, state data coordinators, and others knowledgeable in the area of public library Internet activities; and,
- Distributing draft copies of the survey to library school faculty and public librarians.

Based on the comments provided by the various survey reviewers, the consultants and NCLIS staff developed a final version of the survey for distribution to the sample of 1,500 public library outlets.

The consultants mailed the surveys to the 1,500 outlets in May 2000.⁴ At the same time, the consultants distributed the sample list to the state data coordinators to apprise them of the library outlets sampled in their states. The consultants and NCLIS staff attempted to correct surveys returned due to incorrect addresses. When it was not possible to correct the address, or the library outlet closed, the consultants selected a replacement outlet in the same poverty and metropolitan status category. Survey collection occurred through June 2000, with a final response rate of 73.9%. The state data coordinators provided tremendous support to the data collection effort, assisting the consultants and NCLIS staff achieve such a high response rate in a month's time.

READING THE FIGURES

The consultants used a weighted analysis approach to analyze the data and generate national estimates. As such, the analysis uses the actual responses from the 1,108 library outlets from which a completed survey was received to estimate to all [geocoded] outlets.

For example, Hawkins Memorial Library in La Porte City, Iowa, is coded as a suburban library outlet with less than 20% poverty. Hawkins Memorial Library's responses (and all others designated suburban with less than 20% poverty) are weighted by 14.251 to generate an estimate for all suburban outlets with less than 20% poverty.⁵

Figures 3 through 13 present the *weighted* study findings. Thus, the data presented in the figures represent the *national estimates* of connectivity, public access, and other presented analysis. Readers should note that, due to the type of analysis and weight generation process, rounding occurs in the weights used, number of estimated outlets for a particular response, percentages/averages generated, and confidence intervals.

KEY SURVEY FINDINGS

Public libraries continue to connect to the Internet, enhance their connectivity, and provide a variety of public access Internet services. The sections below describe public library outlet Internet connectivity as of June 2000 and, where possible, identifies significant changes from the 1998 Public Libraries and the Internet study findings. The figures referenced in the following sections are in Appendix A of this report.

Connectivity and Public Access

Nearly all public library outlets – 95.7% – have an Internet connection (see Figure 3). This is an increase from 83.6% in 1998. The most notable increases in connectivity occurred in suburban and rural library outlets. Suburban library connectivity increased from 88.1% in 1998 to 98.5% in 2000, and rural library connectivity increased from 78.4% in 1998 to 93.3% in 2000.

Most library outlets also provide public access to the Internet, with 94.5% doing so (see Figure 4). This is up substantially from the 73.3% of library outlets that provided public access to the Internet in 1998. Significant increases in public access services occurred across all types of outlets by poverty and metropolitan status. Of particular interest is that all outlets in the poverty designations moved from the 72.8% to 79.5% range of public access service provision in 1998 to the 93.5% to 95.8% range in 2000.

The 1998 *Public Libraries and the Internet* study asked libraries if they expected to be connected to the Internet for public and staff access by June 1999. Overall, 47.6% of libraries responding that they were not currently connected expected to be by June 1999. Clearly, the overall increase in public library connectivity by more than 21% is a result of libraries being successful with Internet connectivity plans.

Of the outlets that provide public access Internet services, there is an average of 8.3 workstations per outlet (see Figure 5). Not surprisingly, rural libraries have fewer workstations (4.9) as compared to urban libraries (17.3). Since 1998, however, library outlets have nearly doubled the number of public access workstations available to the public (see Figure 6). For example:

- 25% of public library outlets now have two (2) or fewer workstations as compared to one (1) workstation in 1998;
- 50% of public library outlets now have four (4) or fewer workstations as compared to three (3) in 1998; and,
- 75% of public library outlets now have eight (8) or fewer workstations as compared to four (4) or fewer in 1998.

Thus, public library outlets are providing more public access workstations to the populations that they serve.

Speed of connectivity for public access Internet services also increased since 1998. Of particular interest is that:

- 36.2% of outlets now have T1 (1.45mbps) service as their maximum speed of connectivity for public access services, as compared to 21.9% in 1998;

- 53.6% of outlets have greater than 56kbps (direct connect) service as their maximum speed of connectivity for public access services, as compared to 33.7% in 1998; and
- 35.4% of rural outlets have greater than 56kbps (direct connect) service as their maximum speed of connectivity for public access services, as compared to 22.2% in 1998.

The data demonstrate an overall increase in speeds of connectivity and a shift away from dialup connections. It is valuable to recognize that even rural libraries and those with poverty levels greater than 40% are able to provide T1 access. The data show an increase of 10.1% for rural libraries, an increase of 7.6% for libraries with more than 40% poverty, and an overall increase of connectivity at T1 speeds by 14.3%. As such, public libraries continue to augment the bandwidth available for their public access services.

Funding Connectivity and Information Technology Infrastructure

Public libraries combine a variety of funding sources to support their Internet services and information technology infrastructure (see Figure 8):

- 87.7% make use of operating funds from local governments and/or tax districts;
- 48.9% make use of Education-rate (E-rate) discounts; and,
- 23.6% to 31.4% make use of state library grants, state grants, gifts, and special grants (e.g., Gates Library Initiative).

Of particular interest is that 62.1% and 69.6%, respectively, of library outlets with 20-40% poverty and more than 40% poverty designations make use of the E-rate discount to support their Internet connectivity services.

Internet Services Provision and Implementation

The survey form queried public libraries as to their provision and implementation of public access online databases, disability, and training services. The study found that:

- 60.4% of public library outlets offer access to online database subscription services on all of their workstations (see Figure 9);
- 36.1% of public library outlets offer remote access to their online database services (see Figure 9);
- 71.2% of public library outlets do not provide special hardware/ software on their public access workstations for individuals with disabilities (see Figure 10);
- 75.5% of public library outlets do not block and/or filter Internet content on their public access workstations (see Figure 11);
- 95.5% of public library outlets have acceptable use policies for their public access Internet services, and 43.6% differentiate between users (e.g., children, adults) in their policies (see Figure 12); and,

- 62.3% of public library outlets offer Internet training services, of which 55.1% that provide training to the adult public, 44.3% to library staff, and 43.7% to children/youth public (see Figure 13).

In general, therefore, public library outlets offer online database services, do not filter and/or block Internet content, do not provide special hardware/ software for individuals with disabilities to use the Internet, have acceptable use policies in place, and offer the public Internet training services.

NOTES AND REFERENCES

1. See McClure, C. R., Bertot, J. C., and Zweizig, D. L. (1994). *Public libraries and the Internet: Study results, policy issues, and recommendations*. Washington, D.C.: National Commission on Libraries and Information Science; McClure, C.R., Bertot, J.C., and Beachboard, J.C. (1995). *Internet costs and cost models for public libraries*. Washington, D.C.: National Commission on Libraries and Information Science; Bertot, J. C., McClure, C. R., and Zweizig, D. L. (1996). *The 1996 national survey of public libraries and the Internet: Progress and issues*. Washington, D.C.: National Commission on Libraries and Information Science; Bertot, J. C., McClure, C. R., and Fletcher, P. D. (1997). *The 1997 national survey of U.S. public libraries and the Internet: Final report*. Washington, D.C.: American Library Association, Office for Information Technology Policy; U.S. National Commission on Libraries and Information Science. (1998). *Moving toward more effective public Internet access: The 1998 national survey of public library outlet Internet connectivity*. Washington, D.C.: National Commission on Libraries and Information Science.

2. For a detailed discussion of the geocoding process, see Appendix C of U.S. National Commission on Libraries and Information Science. (1998). *Moving toward more effective public Internet access: The 1998 national survey of public library outlet Internet connectivity*. Washington, D.C.: National Commission on Libraries and Information Science.

3. According to the National Center for Education Statistics, there were 16,925 public library outlets in 1997. Of those, many have P.O. boxes for mailing addresses and several are bookmobiles. It is not possible to geocode bookmobiles nor some service outlets with P.O. boxes as these are not fixed locations. With the techniques available in April 2000, it was possible to geocode 16,004 of the 16,925 outlets. CITE NCES.

4. Respondents also had the option of completing the survey form online via a web-based survey.

5. By multiplying the weight of 14.251 by the total number of respondents in the suburban with less than 20% poverty outlets (14.251x311 – see Figure 2), one should get the total number of outlets for that cell in Figure 1 (4,332).

APPENDIX A.1 – SUMMARY FIGURES OF SURVEY FINDINGS

Figure 1. Public Library Outlets by Metropolitan Status and Poverty.				
	Poverty			Overall
	Less than 20%	20%-40%	More than 40%	
Metropolitan Status				
Urban	10.1% (n=1,614)	5.7% (n=905)	1.4% (n=223)	17.1% (n=2,742)
Suburban	27.7% (n=4,432)	2.0% (n=316)	0.1% (n=16)	29.8% (n=4,764)
Rural	42.5% (n=6,801)	10.1% (n=1,611)	0.5% (n=86)	53.1% (n=8,498)
Overall	80.3% (n=12,847)	17.7% (n=2,832)	2.0% (n=325)	100.0%* (n=16,004)

Based on geocoding of 16,004 outlets.

Figure 2. Response Rate of 2000 Outlet Study by Metropolitan Status and Poverty.

	Poverty			Overall
	Less than 20%	20%-40%	More than 40%	
Metropolitan Status				
Urban	11.4% (n=126)	5.3% (n=59)	1.9% (n=21)	18.6% (n=205)
Suburban	28.1% (n=311)	1.7% (n=19)	0.4% (n=4)	30.1% (n=334)
Rural	42.2% (n=468)	8.4% (n=93)	0.6% (n=7)	51.3% (n=568)
Overall	81.7% (n=905)	15.4% (n=171)	2.9% (n=32)	100.0%* (n=1,108)

Based on 1,108 responses out of 1,500 for a total response rate of 73.9%.

Figure 3. Public Library Outlets Connected to the Internet by Metropolitan Status and Poverty.

Base=16,004	Poverty			Overall
	Less than 20%	20%-40%	More than 40%	
Metropolitan Status				
Urban	98.4% +/- 1.3% (n=1,588)	100.0% +/- 0.0% (n=905)	90.5% +/- 2.9% (n=202)	98.3% +/- 1.3% (n=2,695)
Suburban	98.4% +/- 1.3% (n=4,361)	100.0% +/- 0.0% (n=316)	100.0% +/- 0.0% (n=16)	98.5% +/- 1.2% (n=4,693)
Rural	93.1% +/- 2.5% (n=6,336)	93.5% +/- 2.5% (n=1,507)	100.0% +/- 0.0% (n=86)	93.3% +/- 2.5% (n=7,929)
Overall	95.6% +/- 2.0% (n=12,285)	96.3% +/- 1.9% (n=2,728)	92.8% +/- 2.6% (n=302)	95.7% +/- 2.0% (n=15,317)

Figure 4. Connected Public Library Outlets that Provide Public Access to the Internet by Metropolitan Status and Poverty.				
Base=16,004	Poverty			Overall
	Less than 20%	20%-40%	More than 40%	
Metropolitan Status				
Urban	98.4% +/- 1.3% (n=1,588)	98.3% +/- 1.3% (n=890)	90.5% +/- 2.9% (n=202)	97.7% +/- 1.5% (n=2,680)
Suburban	97.1% +/- 1.7% (n=4,304)	100.0% +/- 0.0% (n=316)	100.0% +/- 0.0% (n=16)	97.3% +/- 1.6% (n=4,636)
Rural	91.5% +/- 2.8% (n=6,220)	93.5% +/- 2.5% (n=1,507)	100.0% +/- 0.0% (n=86)	91.9% +/- 2.7% (n=7,813)
Overall	94.3% +/- 2.3% (n=12,112)	95.8% +/- 2.0% (n=2,713)	93.5% +/- 2.5% (n=304)	94.5% +/- 2.3% (n=15,128)

Figure 5. Average Number of Public Library Outlet Graphical Public Access Internet Terminals by Metropolitan Status and Poverty.				
Base=15,128	Poverty			Overall
	Less than 20%	20%-40%	More than 40%	
Metropolitan Status				
Urban	13.7 range: 1-191	24.9 range: 1-700	11.9 range: 2-32	17.3 range: 1-700
Suburban	8.9 range: 1-220	6.5 range: 1-23	3.5 range: 2-5	8.7 range: 1-220
Rural	4.6 range: 1-41	6.1 range: 1-38	5.9 range: 1-19	4.9 range: 1-41
Overall	7.3 range: 1-220	12.3 range: 1-700	7.2 range 1-32	8.3 range: 1-700

Figure 6. Frequency Analysis of Public Library Outlet Number of Graphical Public Access Workstations.	
Quartile	Number of Graphical Workstations Per Outlet
1 (25%)	2
2 (50%)	4
3 (75%)	8
Base=15,128	

Figure 7. Public Library Outlet Maximum Speed of Public Access Internet Services by Metropolitan Status and Poverty.

Base=15,128	Metropolitan Status			Poverty Level			Overall
	Urban	Suburban	Rural	Less than 20%	20%-40%	More than 40%	
Maximum Speed							
Less than 56kbps	1.0% +/- 0.1% (n=26)	2.5% +/- 1.5% (n=114)	9.4% +/- 2.9% (n=738)	6.7% +/- 2.7% (n=808)	2.6% +/- 1.6% (n=69)	0.0% +/- 0.0% (n=0)	5.8% +/- 2.3% (n=877)
56kbps dial-up	1.0% +/- 0.1% (n=26)	7.4% +/- 2.6% (n=344)	25.3% +/- 4.3% (n=1,975)	17.7% +/- 3.8% (n=2,141)	7.5% +/- 2.3% (n=155)	16.2% +/- 3.7% (n=49)	15.5% +/- 3.6% (n=2,345)
56kbps direct connect	10.0% +/- 3.0% (n=269)	25.6% +/- 4.4% (n=1,184)	29.8% +/- 4.6% (n=2,331)	24.4% +/- 4.3% (n=2,995)	27.6% +/- 4.5% (n=749)	26.3% +/- 4.4% (n=80)	25.0% +/- 4.3% (n=3,784)
64kbps – 128kbps	7.9% +/- 2.7% (n=211)	9.0% +/- 2.7% (n=417)	6.9% +/- 2.5% (n=543)	7.1% +/- 2.6% (n=863)	10.4% +/- 3.1% (n=282)	8.3% +/- 2.7% (n=25)	7.7% +/- 2.7% (n=1,171)
128kbps – 1.5mbps	15.7% +/- 3.6% (n=420)	6.6% +/- 2.5% (n=304)	3.8% +/- 1.9% (n=296)	6.0% +/- 2.4% (n=727)	10.8% +/- 3.1% (n=293)	0.0% +/- 0.0% (n=0)	6.7% +/- 2.5% (n=1,020)
T1 (1.5mbps)	56.9% +/- 4.9% (n=1,524)	45.6% +/- 4.9% (n=2,115)	23.4% +/- 4.2% (n=1,831)	35.3% +/- 4.8% (n=4,272)	39.5% +/- 4.9% (n=1,072)	41.6% +/- 4.9% (n=126)	36.2% +/- 4.8% (n=5,471)
Greater than 1.5mbps	7.7% +/- 2.6% (n=205)	3.4% +/- 1.8% (n=157)	1.3% +/- 1.1% (n=99)	2.9% +/- 1.7% (n=346)	3.4% +/- 1.8% (n=92)	7.5% +/- 2.6% (n=123)	3.0% +/- 1.7% (n=461)

Figure 8. Public Library Outlet Funding for Internet-Related Technology and Infrastructure by Metropolitan Status and Poverty.

Base=15,128	Metropolitan Status			Poverty Level			Overall
	Urban	Suburban	Rural	Less than 20%	20%-40%	More than 40%	
Funding Source							
Operating funds from local government/tax districts	96.2% +/- 1.9% (n=2,579)	90.1% +/- 2.9% (n=4,176)	83.3% +/- 3.7% (n=6,507)	87.2% +/- 3.3% (n=10,560)	91.1% +/- 2.8% (n=2,472)	75.5% +/- 4.3% (n=229)	87.7% +/- 3.3% (n=13,262)
Operating funds from state library	19.7% +/- 3.9% (n=529)	19.6% +/- 3.9% (n=908)	27.2% +/- 4.4% (n=2,126)	21.1% +/- 4.1% (n=2,559)	34.8% +/- 4.8% (n=943)	20.1% +/- 4.0% (n=61)	23.6% +/- 4.2% (n=3,563)
State grants	33.6% +/- 4.7% (n=899)	27.2% +/- 4.4% (n=1,261)	29.6% +/- 4.6% (n=2,312)	29.1% +/- 4.5% (n=3,526)	30.5% +/- 4.6% (n=826)	39.6% +/- 4.9% (n=120)	29.6% +/- 4.6% (n=4,472)
Federal government funds (LSTA, TIAPP)	23.3% +/- 4.2% (n=626)	12.6% +/- 3.3% (n=583)	19.9% +/- 4.0% (n=1,558)	17.8% +/- 3.8% (n=2,153)	19.8% +/- 4.0% (n=537)	25.3% +/- 4.4% (n=77)	18.3% +/- 3.9% (n=2,767)
Education Rate (E-rate) discount	58.9% +/- 4.9% (n=1,580)	44.1% +/- 5.0% (n=2,043)	48.2% +/- 5.0% (n=3,769)	45.4% +/- 5.0% (n=5,496)	62.1% +/- 4.9% (n=1,684)	69.6% +/- 4.6% (n=211)	48.9% +/- 5.0% (n=7,392)
Library foundation funds	20.5% +/- 4.0% (n=549)	2.8% +/- 1.6% (n=128)	7.4% +/- 2.6% (n=577)	7.1% +/- 2.6% (n=857)	13.1% +/- 3.4% (n=355)	14.0% +/- 3.5% (n=32)	8.3% +/- 2.8% (n=1,255)
Special grant funding (e.g., Gates Library Program)	45.5% +/- 5.0% (n=1,220)	25.9% +/- 4.3% (n=1,119)	29.8% +/- 4.6% (n=2,331)	26.1% +/- 4.4% (n=3,162)	53.1% +/- 5.0% (n=1,440)	48.4% +/- 5.0% (n=147)	31.4% +/- 4.6% (n=4,749)
Gifts, contributions, donations	17.9% +/- 3.8% (n=480)	21.7% +/- 4.1% (n=1,006)	30.0% +/- 4.6% (n=2,342)	26.9% +/- 4.4% (n=3,259)	18.2% +/- 3.9% (n=494)	24.7% +/- 4.3% (n=75)	25.3% +/- 4.3% (n=3,828)
Local fund raisers	4.7% +/- 2.1% (n=126)	7.5% 2.3% (n=347)	9.2% +/- 2.9% (n=719)	8.5% +/- 2.8% (n=1,028)	4.3% +/- 2.0% (n=118)	15.1% +/- 3.6% (n=46)	7.9% +/- 2.7% (n=1,192)
Other income sources	5.8% +/- 2.3% (n=155)	9.9% +/- 3.0% (n=460)	8.8% +/- 2.8% (n=691)	9.7% +/- 2.9% (n=1,172)	3.6% +/- 1.9% (n=98)	11.8% +/- 3.2% (n=36)	8.6% +/- 2.8% (n=1,306)

Percentages will not total to 100.0% as respondents could select multiple funding options.

Figure 9. Public Library Outlet Public Access Database Subscription Services by Metropolitan Status and Poverty.

Base=15,128	Metropolitan Status			Poverty Level			Overall
	Urban	Suburban	Rural	Less than 20%	20%-40%	More than 40%	
Subscription Database Services							
On all workstations	77.3% +/- 4.1% (n=2,071)	63.9% +/- 4.8% (n=2,960)	52.6% +/- 5.0% (n=4,108)	59.1% +/- 4.9% (n=7,161)	66.6% +/- 4.7% (n=1,807)	56.2% +/- 5.0% (n=171)	60.4% +/- 4.9% (n=9,139)
On some workstations	19.8% +/- 4.0% (n=532)	25.2% +/- 4.3% (n=1,168)	18.2% +/- 3.8% (n=1,426)	20.7% +/- 4.1% (n=2,511)	20.1% +/- 4.0% (n=545)	22.8% +/- 4.2% (n=69)	20.7% +/- 4.0% (n=3,125)
On no workstations	2.9% +/- 1.7% (n=77)	10.9% +/- 3.1% (n=508)	29.0% +/- 4.5% (n=2,265)	20.0% +/- 4.0% (n=2,425)	13.3% +/- 3.4% (n=360)	21.0% +/- 4.1% (n=64)	18.8% +/- 3.9% (n=2,849)
Subscription services offered remotely to off-site users	59.6% +/- 4.9% (n=1,598)	43.9% +/- 5.0% (n=2,036)	23.4% +/- 4.2% (n=1,831)	35.6% +/- 4.8% (n=4,314)	39.0% +/- 4.9% (n=1,059)	30.6% +/- 4.6% (n=93)	36.1% +/- 4.8% (n=5,465)

Figure 10. Public Library Outlet Public Access Provision of Special Hardware/Software for Individuals with Disabilities by Metropolitan Status and Poverty.

	Metropolitan Status			Poverty Level			Overall
	Urban	Suburban	Rural	Less than 20%	20%-40%	More than 40%	
Base=15,128							
Hardware/ Software for Persons with Disabilities							
On all workstations	8.7% +/- 2.8% (n=233)	7.0% +/- 2.6% (n=325)	9.3% +/- 2.9% (n=725)	5.8% +/- 2.3% (n=706)	20.4% +/- 4.0% (n=554)	7.5% +/- 2.6% (n=23)	8.5% +/- 2.8% (n=1,284)
On some workstations	26.6% +/- 4.4% (n=713)	23.9% +/- 4.3% (n=1,109)	6.1% +/- 3.7% (n=1,256)	18.5% +/- 3.9% (n=2,242)	29.6% +/- 4.6% (n=804)	10.5% +/- 3.1% (n=32)	20.3% +/- 4.0% (n=3,078)
On no workstations	64.7% +/- 4.8% (n=1,734)	69.1% +/- 4.6% (n=3,201)	74.6% +/- 4.4% (n=5,832)	75.7% +/- 4.3% (n=9,163)	49.9% +/- 5.0% (n=1,355)	82.0% +/- 3.9% (n=249)	71.2% +/- 4.5% (n=10,767)

Figure 11. Public Library Outlet Public Access Internet Blocking of Internet Services by Metropolitan Status and Poverty.

Base=15,128	Metropolitan Status			Poverty Level			Overall
	Urban	Suburban	Rural	Less than 20%	20%-40%	More than 40%	
Blocking of Internet Services							
On all workstations	10.7% +/- 3.1% (n=287)	8.4% +/- 2.8% (n=390)	9.9% +/- 3.0% (n=770)	9.5% +/- 2.9% (n=1,154)	9.9% +/- 3.0% (n=270)	7.5% +/- 2.6% (n=23)	9.6% +/- 2.9% (n=1,446)
On some workstations	18.5% +/- 3.9% (n=495)	21.8% +/- 4.1% (n=1,012)	9.7% +/- 3.0% (n=758)	14.6% +/- 3.5% (n=1,767)	16.7% +/- 3.7% (n=453)	14.5% +/- 3.5% (n=44)	15.0% +/- 3.6% (n=2,265)
On no workstations	70.8% +/- 4.4% (n=1,898)	69.8% +/- 4.6% (n=3,234)	80.4% +/- 4.0% (n=6,285)	75.9% +/- 4.3% (n=9,191)	73.3% +/- 4.4% (n=1,990)	77.9% +/- 4.2% (n=237)	75.5% +/- 4.3% (n=11,417)

Figure 12. Public Library Outlet Acceptable Use Policies for Public Access Internet Services by Metropolitan Status and Poverty.

Base=15,128	Metropolitan Status			Poverty Level			Overall
	Urban	Suburban	Rural	Less than 20%	20%-40%	More than 40%	
Acceptable use policy in place for public access Internet Services	96.8% +/- 1.8% (n=2,595)	97.1% +/- 1.7% (n=4,504)	94.0% +/- 2.4% (n=7,345)	94.7% +/- 2.2% (n=11,469)	99.4% +/- 0.7% (n=2,695)	91.7% +/- 2.8% (n=279)	95.5% +/- 2.1% (n=14,443)
Acceptable use policy differentiates between users (e.g., children, adults)	31.4% +/- 4.6% (n=841)	41.1% +/- 4.9% (n=1,906)	49.2% +/- 5.0% (n=3,842)	43.2% +/- 5.0% (n=5,234)	43.9% +/- 5.0% (n=1,191)	53.8% +/- 5.0% (n=163)	43.6% +/- 5.0% (n=6,589)

Figure 13. Public Library Outlet Internet Training Services Provision by Metropolitan Status and Poverty.

	Metropolitan Status			Poverty Level			Overall
	Urban	Suburban	Rural	Less than 20%	20%-40%	More than 40%	
Base=15,128							
Library outlet offers Internet Training Services	75.9% +/- 4.3% (n=2,033)	69.6% +/- 4.6% (n=3,228)	53.4% +/- 5.0% (n=4,169)	62.4% +/- 4.8% (n=7,556)	60.9% +/- 4.9% (n=1,651)	73.1% +/- 4.4% (n=222)	62.3% +/- 4.8% (n=9,430)
Training Audiences							
Library Staff	47.9% +/- 5.0% (n=1,283)	50.1% +/- 5.0% (n=2,321)	39.7% +/- 4.9% (n=3,099)	44.4% +/- 5.0% (n=5,379)	43.7% +/- 5.0% (n=1,184)	46.2% +/- 5.0% (n=140)	44.3% +/- 4.9% (n=6,704)
Local Business	13.4% +/- 3.4% (n=359)	9.6% +/- 3.0% (n=447)	10.9% +/- 3.1% (n=851)	10.3% +/- 3.0% (n=1,250)	13.8% +/- 3.4% (n=373)	11.0% +/- 3.1% (n=34)	11.0% +/- 3.1% (n=1,657)
Adult Public	68.9% +/- 4.6% (n=1,846)	62.5% +/- 4.8% (n=2,895)	46.0% +/- 5.0% (n=3,593)	55.1% +/- 5.0% (n=6,676)	54.2% +/- 5.0% (n=1,470)	61.5% +/- 4.9% (n=187)	55.1% +/- 5.0% (n=8,334)
Local Government	11.3% +/- 3.2% (n=302)	8.6% +/- 2.8% (n=399)	8.6% +/- 2.8% (n=671)	9.2% +/- 2.9% (n=1,119)	8.9% +/- 2.9% (n=242)	3.5% +/- 1.8% (n=11)	9.1% +/- 2.9% (n=1,372)
Children/ Youth Public	59.4% +/- 5.0% (n=1,592)	46.5% +/- 5.0% (n=2,158)	36.6% +/- 4.8% (n=2,859)	42.7% +/- 5.0% (n=5,175)	45.6% +/- 5.0% (n=1,238)	64.3% +/- 4.8% (n=195)	43.7% +/- 5.0% (n=6,608)
Other Targeted Populations	21.9% +/- 4.1% (n=586)	12.9% +/- 3.4% (n=597)	12.5% +/- 3.3% (n=975)	13.6% +/- 3.4% (n=1,648)	16.2% +/- 3.7% (n=439)	23.6% +/- 4.3% (n=72)	14.3% +/- 3.5% (n=2,158)

APPENDIX A.2 – 2000 STUDY SURVEY FORM

(Note: the original survey was one page, front and back. The front contained the survey questions, the back contact information and a glossary of terms)

National Survey of Public Library Outlet Internet Connectivity

Instructions: The U.S. National Commission on Libraries and Information Science is surveying a national sample of public libraries regarding their connectivity to the Internet. Please respond to the questions that follow for the outlet or library listed on the backside of this survey form. There is a glossary of terms on the back of the survey form to assist you complete the survey. Thank you for your participation! PLEASE RETURN THE QUESTIONNAIRE BY Friday, June 16, 2000.

1. Is this library outlet **currently connected** to the Internet in any way? (FILL IN ONE ● ONLY)

- No (please return the survey. **THANK YOU!**)
- Yes, staff access only (please return the survey. **THANK YOU!**)
- Yes, public and staff access (please go to question 2)

2. Please indicate the **number of GRAPHICAL public access Internet workstations** provided by this library outlet:

(FILL IN ONE ● ONLY)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19 or more (please indicate): _____

3. Please indicate the **maximum speed** of this **library outlet's public access Internet service connection**: (FILL IN ONE ● ONLY)

- Less than 56kbps
- 56kbps **direct connect**
- More than 128kbps but less than 1.5 mbps
- 56kbps **dial-up**
- 64kbps-128kbps
- 1.5 mbps (T1)
- More than 1.5 mbps

4. Please indicate this library outlet's **sources of funding** for Internet-related technology and infrastructure (e.g., space, wiring, telecommunications services, workstations, servers, furniture, etc.): (FILL IN ALL ● THAT APPLY)

- Operating funds from local government/tax districts
- Library foundation funds
- Operating funds from state library Program)
- Special grant funding (e.g., Gates Library Program)
- State grants
- Gifts, contributions, donations
- Federal government funds (LSTA, TIAPP)
- Local fund raisers
- Education Rate (E-rate) discount
- Other income sources

5. Please complete the following questions about this library outlet's **public access Internet services**: (FILL IN ALL ● THAT APPLY)

	On all workstations	On some workstations	On no workstations	Service offered remotely to off-site users
This library outlet offers public access to subscription databases (e.g., EbscoHost, InfoTrac, SIRS, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This library outlet provides special hardware/software to assist access for individuals with disabilities (e.g., large print display, oversized keyboards, voice conversion software)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
This library outlet uses technology measures (e.g., filtering software) to block users from accessing various Internet services (e.g., e-mail, chat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

6. Does this library outlet have an **acceptable use policy for public Internet access** in place? (FILL IN ALL ● THAT APPLY)

- Yes No If yes, does the policy differentiate between users (e.g., children, adults)? Yes No

7. Does this library outlet offer **Internet training services**: (FILL IN ONE ● ONLY):

- Yes No (If no, please return the survey. **THANK YOU!**)

If yes, to whom does this outlet offer Internet training services? (FILL IN ALL ● THAT APPLY)

- | | | |
|--------------------------------------|----------------------------------------|--------------------------------------------------|
| <input type="radio"/> Library staff | <input type="radio"/> Adult public | <input type="radio"/> Children/youth public |
| <input type="radio"/> Local business | <input type="radio"/> Local government | <input type="radio"/> Other targeted populations |

Survey glossary and contact information are on the other side

For questions concerning the survey, please contact:

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GLOSSARY OF SURVEY ABBREVIATIONS/KEY TERMS	
Outlet	A library facility. In the case of some public libraries, there is only one facility or outlet. Other public libraries have several outlets or facilities sometimes referred to as branches.
Graphical Workstation	A workstation and/or computer that is capable of displaying graphical images, pictorial representations, or other multi-media formats.
Public Access Internet Workstations	Those library outlet graphical workstations that provide public access to the Internet, including those that provide access to a limited set of Internet-based services such as online databases.
KBPS	Kilobits per second.
MBPS	Megabits per second.
Dial-up Internet Connection	Internet connection using a modem and a phone line.
Direct Internet Connection	Internet connection using a dedicated connection such as a leased line (e.g., T1, 56kbps, ISDN, DSL) or cable.
Service Offered Remotely to Off-Site Users	Internet-based services such as online databases (e.g., EbscoHost) the library offers that users can access via the Internet from home, office, school, or other non-library locations.
Acceptable Use Public Access Policy	A formal, written statement that governs the use of public access Internet workstations by the users.
Internet Training Services	Formal training sessions with developed curriculum modules that cover specific topics (e.g., web browser basics, Internet searching, basic computing skills).