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The Policy Implications of Internet Connectivity in Public Libraries

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Abstract

The provision of public Internet access and related networked services by public libraries is affected by a number of information policy issues. This article analyzes the policy dimensions of Internet connectivity in public libraries in light of the data and findings from a national survey of public libraries conducted by the authors of this article. After providing a summary of the study methodology and findings, this article examines key policy issues that include the nature of sufficient bandwidth and broadband, the perpetuation of the digital divide of Internet access in libraries, the role of libraries as e-government access points, the complexities of funding Internet access, the impacts and contradictions of filtering, and the chilling effect of homeland security legislation in public libraries. This article concludes with a discussion of how examining these policy issues can lead to a better understanding of public libraries and the Internet access they offer within the context of public policy.

1. Introduction

This article examines the policy implications from the data and findings of the *Public Libraries and the Internet 2004: Survey Results and Findings* study, which was funded by the Bill and Melinda Gates Foundation and the American Library Association.[1]

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Through a national survey, this study explored the availability of Internet access and related networked technologies in public libraries around the United States and at the state level. The 2004 survey continues the research of previous surveys conducted by John Carlo Bertot and Charles R. McClure, but it expands the scope of the areas studied.[2] An overview of the study method, goals, data, and findings are available at http://www.ii.fsu.edu/plinternet.

Since the early 1990s, the authors of this article have tracked a range of issues and trends related to public library Internet use, involvement, and issues associated with the provision of public access Internet services. Overall, the policy issues related to public libraries and the networked environment have remained consistent through these studies. Lists of key issues affecting public libraries in the networked environment that these studies identified between 1993 and 2000 are still valid today.[3] The policy issues identified in these reports that continue to confront policymakers and the public library community include but are not limited to sufficiency of connectivity, levels of public access, the need for training, continuing gaps in access, sources of funding for technology, and questions of public policy. Today, public libraries still struggle with these same issues, as well as more recent issues, continually working to obtain adequate resources and political support for the provision of information services through the Internet.

2. Study methodology in brief

The study employed a Web-based survey approach, with a mailed survey participation invitation letter sent to the directors of libraries in the sample. The letter introduced the study, provided information regarding the study sponsors and the research team, explained the study purpose and goals, provided instructions on how to access and complete the electronic survey, and provided contact information to answer any questions that participants might have. The letters also explained how libraries could respond to the survey in a print format if desired.

The designed survey actually deployed a two-stage approach that included questions regarding sampled outlets (branches) and questions regarding an entire library system. For roughly 85% of public libraries, there is no distinction between a branch and system, as these are single facility systems (i.e., one branch, one system). The other roughly 15% of public libraries, however, do have multiple branches. Thus, there was a need to separate branch and system-level questions.

For branch-level data, the survey asked respondents to answer questions about their branch and about the library system to which each respondent branch belongs. When the data collection period closed in February 2005, the survey received 5023 branch-level responses out of a sample of 6865 branches, for an overall response rate of 73.2%. The survey sampled 4537 systems and received responses from 3084 for a response rate of 68.0%. The responses received showed no distribution biases (i.e., skewed to rural libraries).

3. Study findings in brief

Perhaps the most prominent finding from the 2004 study is that public libraries provide Internet connectivity for almost all U.S. residents.[4] Compared to 1994 when only 20.9% of public libraries were connected to the Internet, 99.6% of all public library outlets are connected to the Internet in 2004. Moreover, as Fig. 1 demonstrates, 98.9% of those libraries connected to the Internet now provide public access Internet services, placing public Internet access at its highest level since it began to be measured.

This tremendous progress is largely due to three major areas of investment beginning in 1997:

- federal grants for technology and planning through the Library Service and Technology Act (LSTA);[5]
- E-rate discounts for telecommunications infrastructure and connectivity; and
- public and private support, including the Bill and Melinda Gates Foundation's U.S. Library Program.

E-rate, for example, provided libraries with more than $250 million in technology-related discounts between 2000 and 2003.[6] The expenditures of these funds have allowed public libraries, in a period of about a decade, to become nearly universal providers of Internet access.

One means of ensuring usage of these connections is training. A vast majority of public libraries provide information technology training to patrons. Moreover, the three prevalent audiences for patron training are seniors (57.3%), those patrons who do not have Internet access at home (52.6%), and adults seeking continuing education (51.2%). Thus, libraries play a significant role in providing access to Internet-based services and resources for those who would otherwise likely have no access. Of those libraries that do offer patron training, however, only 28% offer such training on a scheduled basis (either weekly or monthly). That percentage drops to approximately 16% for patrons served by rural libraries but increases to nearly 64% for patrons served by urban libraries.

While the study data indicate a high degree of Internet connectivity and public access to Internet services, the data also show that public libraries are reaching a plateau in terms of the

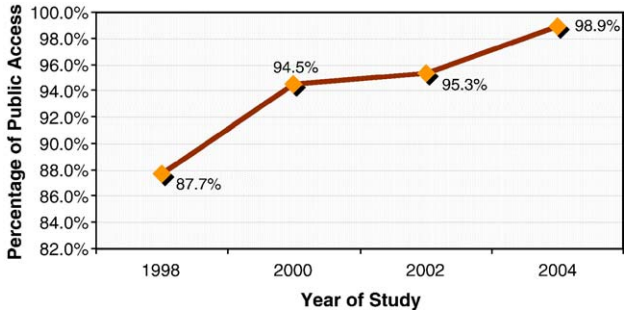

Fig. 1. Percentage of connected public library outlets that provide public Internet access from 1998 to 2004.

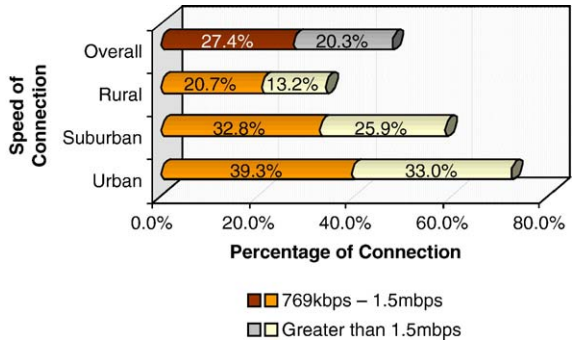

Fig. 2. Public library Internet connection speed over 769 kbps in 2004.

number of public access workstations available for use and that these workstations are not enough to meet demand, as indicated by nearly 85% of respondents. The number of workstations available to patrons varies by metropolitan status (urban, suburban, and rural) and poverty level, with patrons served by urban and high poverty library outlets having access to the most public access workstations (an average of 31).

Public libraries also continue to increase their bandwidth, with many now providing connections at 769 kbps or higher (see Fig. 2). However, high-speed connectivity is not evenly distributed across libraries or necessarily sufficient for increasingly bandwidth-intensive applications. While 48% of public libraries have connection speeds of 769 kbps or greater, 73% of urban libraries have connection speeds of greater than 769 kbps as compared to only 34% of rural libraries. Many libraries are also exploring wireless Internet connectivity for patrons, with nearly 18% of public libraries already having wireless Internet access, and 21% planning wireless access within the next year. Contrarily, in many public libraries, filters on public access workstations limit access to the Internet. Nearly 40% of all public libraries filter their public access Internet connectivity in some way, thus limiting access to a variety of Internet-based content and services.

In general, patrons served by rural libraries have less access to workstations, non-filtered workstations, high-speed connectivity, and wireless Internet services for patron-owned computer use. Patrons in high poverty areas have access to the highest levels of connectivity, bandwidth, and wireless access. However, the policy context in which public libraries provide Internet access has grown increasingly complex, as levels of connectivity have risen. Since 2000, libraries have been forced to juggle more and more policies, regulations, and legislation related to the networked environment.

4. Internet access, public libraries, and the current policy environment

This section identifies and discusses key policy issues raised by the data from the 2004 study. The article examines and analyzes these issues in terms of the data and the surrounding policy context that affects and shapes the provision of networked information services in public libraries.

4.1. Bandwidth

Since the authors have been conducting these national surveys, the average bandwidth that public libraries use for connecting to the Internet continues to increase; however, the demands and need for high bandwidth applications, such as interactive video and live digital reference, also continue to increase. The speed of connectivity most common is 769 kbps to 1.5 mbps with 27.4% of outlets having connectivity within that range. The lowest percentage of outlets (1.3%) has the lowest speed of connectivity at less than 56 kbps.

Comparing the responses related to bandwidth from the 2002 study[7] and 2004 study,

- the percentage of outlets with a 128-kbps or lower connection has dropped dramatically from 30.5% in 2002 to 12.8% in 2004;
- the percentage of outlets with a connection between 129 kbps and 1.5 mbps has increased slightly from 42.9% to 45.2%; and
- the percentage of outlets with a connection greater than 1.5 mbps has increased from 15.3% to 20.3%.

Thus, public libraries continue to increase their bandwidth.

Having connectivity is not the same as having *sufficient* connectivity (high enough bandwidth) to adequately use the Internet services that are available and that meet patron needs. The Federal Communications Commission considers broadband to be 200 kbps or more in at least one direction.[8] The International Telecommunications Union considers broadband to be 128 kbps or more in at least one direction.[9] Both of these definitions, though, may understate the speeds that are best associated with the notion of broadband, particularly for public access Internet points such as public libraries.

Another, more dynamic approach is not to link a specific speed to the notion of broadband, but to use a strategy proposed by the U.S. National Research Council:[10]

> Broadband services should provide sufficient performance – and wide enough penetration of services reaching that performance level – to encourage the development of new applications.

These are but a sampling of the ways in which it is possible to define broadband. Yet the implications of having "broadband" connectivity in a public library are significant.

In fact, there is no agreement on a definition of "broadband" connectivity for public libraries nor is there agreement on the "appropriate" bandwidth necessary to provide high-quality networked-based services in a public access context. To some degree, the notion of a dynamic definition in kbps that increases as the applications and demands increase can, at least, provide a measure of how well public libraries provide broadband connectivity. As it is, there is no clear sense of what is "good enough" connectivity for public libraries, nor is there agreement on what should be the goal for public libraries regarding bandwidth.

There does seem to be, however, an agreed notion that broadband connectivity – in general and in public libraries – is very important to the United States. As the global rankings of broadband usage have found the United States dropping from 4th to 13th between 2001 and 2004, some have argued this slippage in the rankings will have serious negative consequences

in terms of global competitiveness and educational and industrial capacity.[11] If the United States is to work to increase its access to and usage of broadband Internet, public libraries seem likely to be an essential part of any adopted strategy.

4.2. Digital divide versus digital inclusion

In a series of reports issued by the U.S. National Telecommunications and Information Administration (NTIA) from the mid-1990s to 2000, the federal government documented a range of disparities regarding access to the Internet in terms of geographic location, race, income, and other factors.[12] Further studies also identified many of the same factors that contributed to a "digital divide."[13] This focus on the digital divide placed the emphasis on what populations had low levels of access to the Internet, with the policy goal of bringing more of the people in these populations online. The emphasis of discussions of the digital divide was squarely on a need to improve access.

But, in recent years, government attention has shifted from the digital divide to a focus on "digital inclusion."[14] This new focus on digital inclusion emphasizes how many people are currently online. By making this shift, the policy direction has moved from working to increase Internet usage among entire populations to viewing the current levels of access as an accomplishment. By adopting a "mission accomplished" perspective, the policy has greatly reduced the urgency given to efforts promoting online participation. This change in policy direction has been accompanied by a reduction in the funds available for many programs related to increasing access to the Internet among underserved populations, such as funds for community technology centers from the Department of Education. In this spirit, the U.S. federal e-government Web site devoted to issues of the digital divide (http://www.digitaldivide.gov) was deactivated.

Findings from the 2004 study, however, suggest that there is still an identifiable digital divide in the United States. Indeed, there are significant disparities across the United States in public library access to the Internet, in terms of both geography and connectivity levels.

First, there are considerable differences between the Internet access in rural libraries and the access in other libraries. While the national average for number of access terminals is 10.4, rural libraries only average 6.7. Rural public libraries are much more likely to have lower levels of broadband connectivity than urban or suburban libraries. This means that residents of rural areas are being left behind in terms of speed of connectivity and the increased capacities that broadband access allows. Seventy-three percent of urban libraries have connection speeds of greater than 769 kbps as compared to only 34% of rural libraries; 18.6% of rural libraries have a connection speed of 128 kbps or lower. Rural libraries with an Internet connection are the most likely to not offer public access to patrons, with 8.9% of rural low poverty libraries and 6.4% of rural medium poverty libraries not providing patrons with Internet access.

Second, access and bandwidth vary considerably on a state-by-state basis. Some states have much better access and bandwidth than others. Between 2.4% and 5.2% of libraries in Arkansas, California, Idaho, New Hampshire, Virginia, and West Virginia still do not offer

patron access to the Internet. This represents a significant number of patrons who do not have Internet access in their local libraries. In five states – California, DC, Florida, New Mexico, and Oregon – more than 30% of libraries reported fewer workstations than patrons needed on a consistent basis, whereas 100% of DC libraries reported that there were fewer workstations than patrons needed on a consistent basis. More than 30% of libraries in Arkansas, Nevada, and Wyoming have a connection speed between 56 and 128 kbps. All of these gaps among the public libraries in various states function as digital divides between the populations of the different states.

Third, and perhaps most significantly, 85% of public libraries responded that there are times of the day when there are an inadequate number of workstations available for those who want to use them. As Fig. 3 demonstrates, 70.2% have insufficient terminals to meet patron needs at certain times of the day, whereas 15.7% have insufficient terminals to meet patron needs on a consistent basis. The lack of adequate workstation access is particularly prominent in high poverty (96.5% have insufficient terminals) and urban public libraries (93.4% have insufficient terminals). As such, libraries serving the populations that may have the greatest need for Internet access are the least able to meet demand for it.

For a number of people, as well as for a number of public libraries that provide access to patrons, significant disparities exist as to *whom* has access and *where* adequate public access to the Internet is possible. At issue are (1) the degree to which it should be, or should not be, national policy to reduce these disparities and work toward providing equal access to Internet information and services; (2) the "rights" of citizens to adequate access of the Internet and the range of information and services the Internet allows; and (3) the societal or financial costs associated with being digitally inclusive versus digitally exclusive.

4.3. The expectation of public libraries as universal access point

The 2004 study suggests that many public libraries are providing a significant amount of public access to the Internet through public access workstations, that some public libraries are running out of space to provide additional public access workstations, and that these libraries

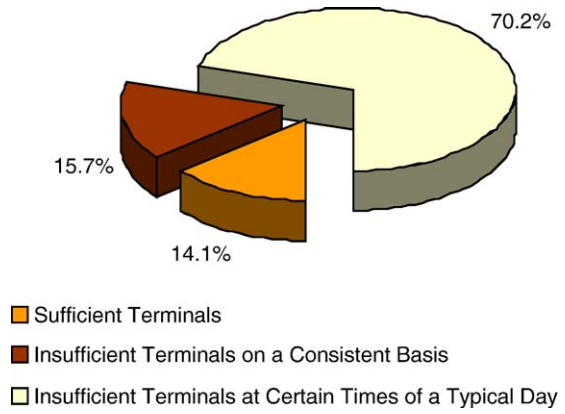

Fig. 3. Public access workstation availability in 2004.

have minimal resources to maintain and/or upgrade the workstations they currently have. Although 66% of U.S. citizens regularly use the Internet as of January 2005, many still lack access from home.[15] Moreover, many of those who have home access lack connectivity beyond dial-up speeds.

Federal and state governments increasingly encourage citizens to communicate and conduct business with their government electronically and also increasingly see public libraries as a provider of Internet access for those who would otherwise lack it. For many people living in the United States who have no other means of Internet access, or only have access at a low-end connection speed, the public library is an important link between them and the networked environment. In the Telecommunications Act of 1996, provisions of the law emphasized the importance of public libraries serving as an Internet access point for the communities they serve.[16] That scope and the importance of that role in terms of citizen access to the government is expanding sharply as more government information and services have moved into the online environment. Electronic government (e-government) is becoming an essential interaction between citizens and their government; there is evidence of this trend as many government information and services are available exclusively online.[17]

The E-government Act of 2002 reiterated and reinforced the importance of public libraries providing citizen access to e-government.[18] As such, public Internet access in public libraries acts as a point of interaction that ensures citizens will have the ability to reach e-government. A further level of responsibility may be placed on libraries as more voting in elections is performed via the Internet. If Internet-based voting becomes commonplace, it is likely that public libraries likely will be expected to serve as a main access point where citizens can cast their "I-votes."[19] In these ways, libraries are becoming a safety net for e-government and are taking on added responsibilities that are tied to the Internet access they provide. Thus, for many people living in the United States, the public library is an important link between them, the networked environment, and the government.

If the federal government continues to expand its policies of bringing more information and services into the e-government environment, through policies such as the E-government Act of 2002, how will Americans access e-government services if they have no home computing facilities or very low-speed dial-up connections? To what degree, then, are governments relying on public libraries to provide these services and to what degree do governments assist public libraries to perform in this role?

An additional impact on the public Internet access is that the level of technology in some libraries may be reaching a plateau. Over the past ten years, the trend for network-based resources, services, workstations, and bandwidth has risen substantially throughout the years with the diffusion of new innovations, such as video-based technologies. The data from the 2004 study indicate, however, that libraries may be reaching a plateau when it comes to providing certain services, such as public access workstations and the speed of bandwidth. Fig. 4 displays this potential plateau in terms of the number of public access workstations.

While this may be occurring for a number of reasons – including the endless upgrade cycle, technical support and maintenance costs, building limitations, and space limitations – the days of continual growth in some public library network-based services may indeed be over. As such, assessing the level of government reliance on libraries as a source of Internet

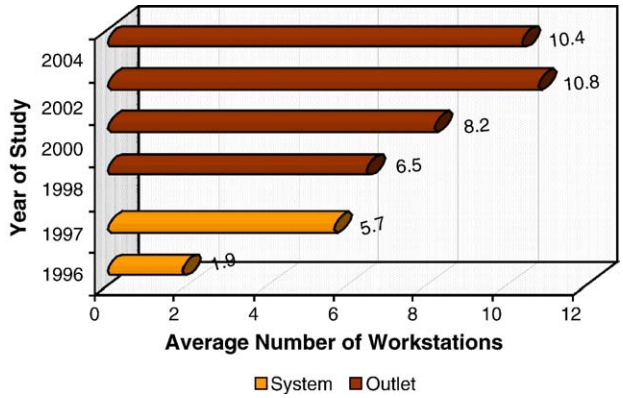

Fig. 4. Average number of public access workstations from 1996 to 2004.

access for citizens becomes even more important. Due to these limitations, the public library may not be able to play the role of safety net for e-government access for all citizens.

4.4. Funding Internet access

Internet connectivity, public access services, and other Internet-related services and resources are not a one-time investment on the part of public libraries. Based on the findings of the 2004 study, there is a need for ongoing and continuing sources of funding to assist public libraries in their provision of public access Internet services and resources:

- Most libraries receive the majority of their funding for computers and Internet access from federal, state, and local sources. However, sustaining this critical service will require commitment and investment from the entire community, including government entities, businesses, and nonprofits.
- 13.3% of libraries reported a decrease in their budgets for technology in the previous year, whereas 50.6% indicated that their technology budget stayed the same from the previous year.
- Nearly 70% of libraries have no set upgrade schedule for hardware, 77.4% have no set upgrade schedule for software, and 96.4% have no set upgrade schedule for connection speed. Additionally, of those libraries that have a public access workstation replacement schedule (approximately 50%), only 39% are able to maintain that schedule.
- Some libraries are struggling to keep the doors open to provide public access computing. In 7.6% of libraries, the total hours the library computers were available decreased in the previous year. Nearly 12% of urban libraries are now open fewer hours.
- Many libraries continue to rely on the E-rate program. 26.4% of public libraries receive E-rate funds for Internet connectivity, 37.7% of public libraries receive E-rate funds for telecommunications services, and 7.6% of public libraries receive E-rate funds for internal connections.

In all, therefore, the data demonstrate a "one-time" or ad hoc approach to Internet connectivity and the provision of network-based services and resources. And yet the data also demonstrate the provision of Internet-based services and resources are an integral service to the communities that public libraries serve.

The sources and amounts of continued funding are, therefore, extremely important issues of public policy. One of the main sources of technology funding for public libraries, the E-rate program, was actually temporarily suspended for several months in 2004 as a result of management and oversight issues. Due to the temporary moratorium, 80% of applicants in 2004 faced delays in the decisions about their requests.[20] Though now resolved, any disruptions in such funding have the potential to cause financial problems and disruptions in Internet access in many public libraries.[21] Between 2000 and 2003, the E-rate program provided public libraries with over $250 million in funds toward Internet access, with decisions on over $75 million in requests from that time period still pending.[22] The loss of availability of such funds, even temporarily, could have had a dramatic impact on the availability of Internet access in many public libraries.

This situation with the E-rate program demonstrates how fragile the ability to provide Internet access is in many libraries, particularly those that are reliant on one specific type or source of funding for networked technologies. As there are significant governmental and societal expectations of Internet access in public libraries, public policy needs to support libraries in accomplishing this role by finding further ways to ensure that libraries have sufficient funds for such access to remain available.

4.5. Filtering, CIPA, E-rate, and library network services and information provision

Some of the federal funds that have been so central to the growth of Internet connectivity in libraries now are accompanied by requirements that affect how libraries can provide Internet access. The Children's Internet Protection Act (CIPA) requires a library that receives certain types of E-rate and LSTA funds to filter Internet access in the library.[23] CIPA was originally passed in 1998, but its constitutionality was only upheld in 2003.[24] CIPA is intended to prevent minors from being able to access certain types of online content that is considered potentially harmful to young minds through computers in public libraries. The breadth of what is covered by the law (i.e., all computers in a library), and the inadequacy of the technology that is used to filter Internet content, however, makes CIPA a limitation on access to a greater range of information than the law is meant to cover.[25] The requirements of CIPA also misjudge many of the roles of public libraries by reducing much of what libraries do to mere document delivery.[26]

Although the law is intended to prevent children from accessing some forms of Internet content, the requirements of CIPA dictate that the access of all patrons must be filtered, with the filters only being disabled if an adult patron requests so. However, CIPA creates many problems for the libraries that must comply with it, including issues related to the following:

- unreliability of filtering products;
- potential inability to disable filters when a patron requests it;

- potentially high costs of compliance;
- possible need for extra staff or extra staff training;
- subsequent, broader filtering laws some states have passed or are considering; and
- the fact that filtering is often seen as contrary to the traditional values of providing access to all that are associated with public libraries.[27]

Since the Supreme Court upheld CIPA as constitutional, public libraries that do not filter access to the Internet can be denied E-rate discounts as well as other federal funding such as LSTA grants. As such, the relationships between CIPA, its filtering requirements, and obtaining E-rate discounts are very complex for public libraries.

One specific finding from the 2004 study is that almost 40% of all public libraries employ some type of filtering in their access to Internet services and information. Without reviewing the various arguments for and against filtering in public libraries, filtering unquestionably does affect access to a range of information resources available within a library. Health information provides a telling example of the problems that can arise as a result of CIPA's filtering requirements.

The National Commission on Libraries and Information Science recently issued a news release that read in part:

> The U.S. National Commission on Libraries and Information Science (NCLIS) today called on President George W. Bush and Congressional leaders to support libraries as health information distribution centers. This specific role for libraries – already successful in many communities – will position libraries as the central resource for providing citizens with consumer health information, particularly when they require health information in a critical or unusual situation, and for helping citizens learn how to live a healthy lifestyle.[28]

This call to the federal government to support public libraries as health information distribution centers includes the goal of establishing "libraries as the logical resource for consumer health information and for promoting a healthy lifestyle for all Americans."[29] This goal for public libraries, however, could be significantly undermined by the filtering requirements of CIPA with which many libraries now must comply. As the 2004 study indicates that 40% of public libraries currently filter patron access to the Internet, and the requirements of CIPA may cause that number, due to the ties to E-rate funding, to increase in coming years.

Filters can block large amounts of general health information – up to 63% of general health sites and up to 91% of sites related to sexual health – when set to block sexually related materials.[30] Under the guidelines of CIPA, minors will not be allowed to view these blocked sites, whereas adults will have to request unfiltered Internet access from library staff. This situation, however, can produce very significant dilemmas for library patrons. Many patrons may be hesitant to expose themselves to questions from the library staff about why they wish to use the unfiltered Internet, even if their information needs are genuine, such as pressing health concerns.[31] In many cases, the individual seeking health information may opt not to do such research rather than explain the intended area of research to a librarian. These problems will continue to mount in the near future, as more people raised on the Internet as a primary resource will reach adulthood and no longer have Internet access at school, meaning that more patrons will be reliant on the public library as their sole or primary means of Internet access.

Even if patrons are not self-conscious about the material they are seeking, the process of requesting unfiltered Internet access could still limit usage. Many patrons express anxiety about using computers in public libraries, often due to inexperience with computer technology.[32] For those patrons already anxious about using a computer, having to request access to a particular site risks simply turning them away from the Internet altogether. CIPA has no set procedure for requesting the removal of filters, so the process will vary considerably between libraries, with some requiring only a verbal request and others requiring a written request and possibly a justification of the reasons. The experiences of some patrons even indicate that an adult with a good reason for having the filters disabled may not be granted such access in some libraries.[33]

The degree to which public libraries filter Internet access will affect this goal of NCLIS noted above, as filtering software removes access to a range of general health and sexual health information.[34] This news release is an excellent example of the government providing diametrically opposed goals for public libraries: On one hand, provide outstanding health information services, but on the other hand, do so with filters if you want to retain E-rate discounts.

More importantly, however, is the impact that filtering has on patron access to a wide range of government services and resources. For those individuals who rely on the public library for access to Internet-based government information or services, it is quite possible that they will be unable to access legal, health, or other government content that filters will automatically block. Also, the blockage of health information, such as that promoted by NCLIS and its partners, is not limited to access from within a public library facility. Some states (e.g., Georgia) employ statewide filters that can block content even if individuals access library resources from their homes. Many states have also passed or are considering "son-of-CIPA" laws that create further, broader filtering requirements in public libraries.[35]

One possible implication is that public libraries may decide that obtaining E-rate discounts is so important that they must accept and implement the filtering requirements of CIPA, thus they may maintain or increase filtering to insure that they can continue receiving E-rate discounts. Such decisions will reduce access to a range of Internet services and information for both children and adults.[36] To date, however, the relationships among these federal policies in terms of how they affect one another and how they affect information services in public libraries are not well understood. Nonetheless, many public libraries must now choose between reduced access to Internet services or reduced E-rate funding.

4.6. Homeland security and public libraries

Perhaps the most significant change in the policy environment since the 1990s has resulted from political and legislative responses to the September 11 terrorist attacks. These responses, especially the USA PATRIOT Act,[37] have created new dilemmas in the public library community's attempts to enhance public access to networked information services.[38] First, libraries have to address new issues of record-keeping, patron privacy, and patron apprehension that can affect what patrons wish to do in

terms of networked information and services. Second, many librarians may feel they have been forced into a position of having to choose between supporting patron rights to free expression and trying to monitor what patrons are doing in the online environment. Third, national priorities now focus on security and terrorism, and scarce resources are being channeled to support those activities instead of public resources, such as funding for libraries.

Times of crisis have previously resulted in limitations of access to information and to the monitoring of public libraries by law enforcement agencies.[39] However, the provisions of the USA PATRIOT Act have wide-ranging implications for libraries, including increases in the circumstances and the scope of surveillance and investigations in libraries, greatly expanded definitions of records that can be searched, the allowance of tracing and searching through electronic communications, and the gag order placed on investigations. The main goal of the law as it relates to libraries seems to be the collection of large quantities of information.[40] These changes in the law have affected the policies in many libraries.

An area that has been particularly hard hit is the collection of usage statistics and other records in libraries.[41] The types of records that various libraries are no longer keeping include the following:

- items checked out;
- overdue items;
- nature of library fines;
- searches on library catalogs, in the library or through remote access;
- searches on public access databases, in the library or through remote access;
- interlibrary loan requests;
- Web browsing activities, i.e., sites visited;
- e-reference questions;
- sign-up sheets;
- guest logs; and
- attendees at library functions and training sessions.[42]

Such records have a number of extremely important uses in libraries, from collection development to justification of funding, but many libraries have decided that protecting patron privacy is more important.

The USA PATRIOT Act continues to generate significant unease in the library community, particularly when libraries are directly confronted with investigations under the law, such as an order to produce the list of patrons who have checked out a particular book.[43] Not surprisingly, these changes have made many librarians extremely uncomfortable about the new roles they are expected to play.[44] Librarians, in fact, have been central to the movement to have the USA PATRIOT Act modified in order to reduce its impacts on information-seeking behaviors of patrons.[45] Such efforts have produced no tangible results, yet, as the numerous bills introduced in the 108th Congress related to information collection in libraries range from proposals to end such information gathering to proposals to increase the power to engage in such activities.[46]

5. Discussion and conclusions

Given these issues discussed above, public libraries may be edging towards digital exclusion, not inclusion, due to a host of factors, some of which are federally mandated, others due to limitations within public libraries themselves. A key policy question raised by the results from the 2004 study is, *What constitutes quality public Internet access service in public libraries*?

Public libraries began connecting and offering public Internet access services in the early 1990s. A strategy that early adopter public libraries embraced was one of free and unfettered access to Internet-based information for the communities that the libraries served.[47] Indeed, public libraries served as a critical community access point to the Internet, and in many cases, even as the first community location to have an Internet connection.[48] Through the public library's connection, members of a community are able to gain access to the Internet, access online content, communicate with family, access government services, and engage in a wide range of network-based services and resources.

Government programs – at the local, state, and federal levels – very often in partnership with a number of community-based organizations, assisted public libraries in their goal of creating a level, digitally inclusive, playing field. As discussed, these included LSTA and E-rate at the national level, a variety of public access programs through the Bill and Melinda Gates Foundation, and a number of programs at the state and local levels (e.g., California's InfoPeople project, Maryland's Sailor network). Increasingly, however, legal requirements and mandates – most notably the USA PATRIOT Act and the Children's Internet Protection Act – are in direct opposition to the spirit of open access to Internet-based information, services, and resources through U.S. public libraries. As discussed previously in this article, the USA PATRIOT Act and CIPA either directly limit access to information through public libraries through the use of filtering software or have a chilling effect on the use of public access Internet services due to potential surveillance activities that law enforcement agencies may engage in regarding patron behavior in public libraries.

The ability of public libraries to serve as both *first* and *last* resort public Internet access points, however, is hampered by legislated mandates. The study shows that public libraries may be reaching their maximum capacity in certain areas of public access Internet services. Two such infrastructure limitations are the number of public access workstations and bandwidth. The data demonstrate that there appears to be a leveling off of the continued growth of public access workstations in public libraries. Discussions with a number of public librarians, state library personnel, and regional cooperative staff indicate that libraries are literally running out of space and can no longer accommodate more workstations. Discussions also indicate that in libraries where space is not yet an issue, they cannot accommodate more workstations due to the limited availability/affordability of increased bandwidth. Said differently, libraries do not want to degrade their existing public access services by adding more workstations. Finally, another reason for the plateau in workstations, again from follow-up discussions, is the need for continual upgrades, and other maintenance requirements, of workstations. Workstations require funds, staff, and other ongoing support; every additional workstation increases the amount of funding, staffing, and support required.

One strategy being adopted by libraries that cannot add more workstations due to space limitations appears to be wireless (WiFi) connectivity within the library facility(ies). Wireless enables an expansion of public access services, while not affecting space requirements. To guard against digital exclusion, it appears that some public libraries offer users the ability to check out laptops while in the building so as to be able to take advantage of the wireless connectivity while simultaneously reducing the reliance on often-booked workstations.

Finally, it is worth reiterating that the study shows that public libraries – either consistently or at certain times of each day – cannot meet the demand for public access workstations. To some extent, therefore, public libraries will never be able to accommodate all public access needs within their communities, either due to space constraints or other infrastructure limitations. The ramifications of this situation are important to all patrons of libraries, but are especially poignant for members of underserved populations who have no means by which to access the Internet other than their local public library. Government reliance on the public library as a conduit for e-government information and services must also account for the fact that public libraries may not be able to accommodate all public access needs in every community.

Related to the availability of workstations is bandwidth. The more bandwidth-intensive Internet applications become, the more workstations public libraries add, the more wireless access points public libraries install, the more digital library resources public libraries provide, and the more users rely on public libraries to access a wide range of e-government services and resources, the more bandwidth public libraries will need. Some communities will likely *never* have adequate access to broadband. Others may have access to broadband, but may not be able to afford it, particularly as this study shows that public library technology budgets are by and large stagnant and, in some cases, decreasing. The fact that Internet bandwidth may eventually be negatively affected by insufficient funding raises very serious questions about priorities in public policy.

Given the all of the issues identified above, it is essential to define *quality* public Internet access service provision within the public library context. Such a definition will assist policymakers, advocates, and researchers to better understand the extent to which public libraries can serve as critical public access points to online information, e-government, and a host of other network-based services and resources. Defining quality of access in public libraries is also the first step toward determining how to ensure and continually improve that level of quality through public policy. As public libraries continue to evolve in the age of the Internet, public policy related to public libraries must also evolve to ensure that libraries are able to meet the needs of patrons and communities in providing access to online information and services from e-mail to e-government.

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