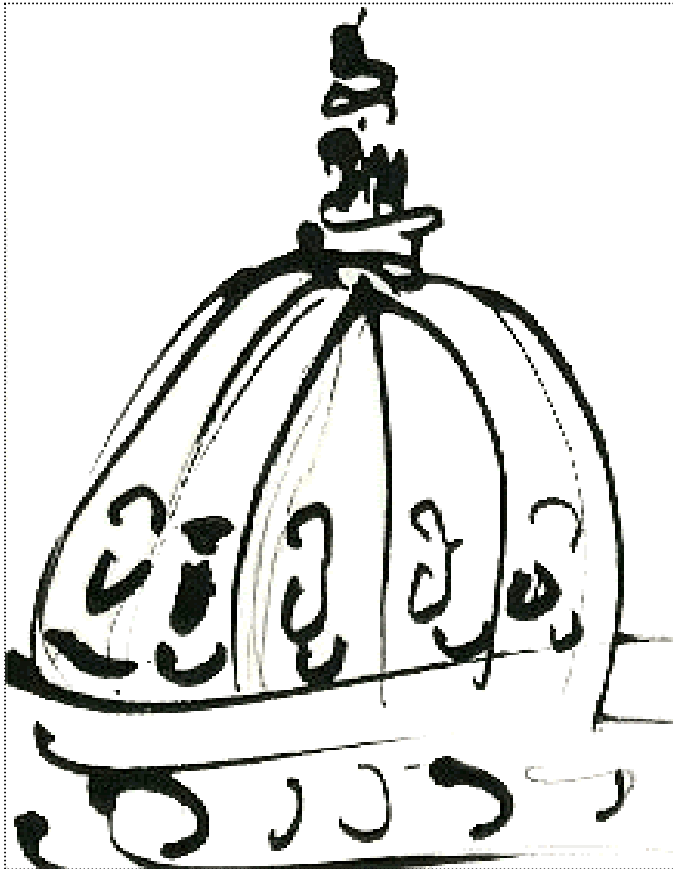




Information Use Management and Policy Institute
College of Information, Florida State University



Public Libraries and the Internet 2006: Study Results and Findings

John Carlo Bertot, Ph. D.
Associate Director and Professor

Charles R. McClure, Ph. D.
Director and Francis Eppes Professor

Paul T. Jaeger, Ph.D. and J. D.
Assistant Professor

Joe Ryan
Senior Research Associate

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IV. STUDY CONCLUSIONS: IMPACTS, ISSUES, AND POSSIBLE FUTURE STEPS FOR PUBLIC ACCESS COMPUTING

To a large degree, public access computing in the nation's public libraries is now taken for granted as an expected and reliable service. Since virtually all public libraries have some amount of public access computing available, key conclusions and findings from the 2006 study go beyond basic connectivity and the availability of public access computing. Of increasing interest are the impacts, issues, and possible future steps for public libraries that extend connectivity and public access.

Findings from both the national survey and the case site visits document the importance of public access computing and Internet access provided by public libraries. Public libraries are often the first choice for many people to access the Internet and engage in networked services such as applying for a job, applying for and engaging in government services, obtaining health information, and much more. But the need to continually enhance information technology, telecommunications, and networked services often puts considerable strain on already stressed library budgets. Moreover, there are new demands on public libraries in their role as providers of public access computing.

This section of the 2006 report identifies and discusses key impacts and issues, and describes several issues arising from the survey and the case site visits. As such, it highlights those impacts and issues that have significant importance for considering public library roles, responsibilities, and strategies for the future in relation to the networked environment. It is not possible to discuss all the significant topics here; instead, these provide a selection of those seen as most important by the study team.

Comparing Selected 2006 Findings to 2004 Findings

The final report of the 2004 *Public Libraries and the Internet* survey offered a number of findings. The study team believes it is useful to compare some of these findings to those from the 2006 study.

Good Enough Connectivity

The 2004 study asked: "What constitutes 'good enough' connectivity?"¹¹ The 2006 data show that although public libraries continue to increase their connectivity speeds we are no closer to an understanding of what is "good enough" connectivity. Specifics include:

- In 2006, 34.4% of connected public library branches have connection speeds of 769kbps-1.5mbps compared to 27.4% in 2004.
- In 2006, 28.9% have connection speeds of greater than 1.5mbps compared to 20.3% in 2004.
- Bandwidth continues to increase, with 63.3% of public library branches having connection speeds of greater than 769kbps in 2006 compared to 47.4% in 2004.

¹¹ Bertot, J. C., McClure, C. R., & Jaeger, P. T. (2005). *Public libraries and the Internet 2004: Survey results and findings*. Tallahassee, FL: Information Institute. Available: <http://www.ii.fsu.edu/plinternet>. Pg. 8.

Indeed, the study team now believes that “good enough” connectivity should not be confused with sufficient and quality connectivity. Earlier in this report the study team noted that the quality and sufficiency of connectivity was dependent on a broad range of factors including the nature of the library’s information technology infrastructure, the number of workstations and wireless access points off the main connection, and the applications and types of services provided by the library or used by the patron (to name but some of the factors).

The study team arbitrarily uses 769kbps as “high speed” and computes the number of libraries that had 769kbps or greater connection speeds. But is 769kbps or greater really high speed, sufficient, and quality connectivity in a public access computing environment? While focusing on a specific number (whether approximate or arbitrary) is necessary for survey research, employing a specific number to indicate sufficient connectivity is not sufficient to truly gauge the quality and sufficiency of many public libraries’ public access connectivity. In short, given the demands now on public libraries for a range of networked services (uploading content, video, music downloads, e-government, etc.), many public libraries may incorrectly believe they have “good enough” connectivity—based on what was sufficient even just a few years ago—when in fact they may have neither sufficient nor quality connectivity. Nonetheless, little progress has been made between 2004 and 2006 in determining sufficient and quality connectivity for public access computing.

It is in this context that issues regarding quality public access computing and sufficient connectivity speeds to Internet access reside. Research questions to explore include:

- Is it possible to define quality public access computing and Internet access in a public library context?
- If so, what are the attributes included in the definition?
- Can these attributes be operationalized and measured?
- Assuming measurable results, what ways can the library, policy, research, and other interested communities employ to impact public library movement towards quality public access computing and Internet access?
- Should there be “standards” for sufficient connectivity and quality public access computing in public libraries?

These questions are a beginning point to a larger dialogue that needs to occur in the research, practitioner, and policy making communities. Public libraries are indeed connected to the Internet and do provide public access services and resources. It is time to move beyond connectivity type and speed questions and consider issues of adequacy, quality, and the range of networked services that should be available to the public from public libraries.

Wireless Connectivity

In 2004, 17.9% of public library branches offered wireless Internet access and in 2006 that number increased to 36.7%. This increase is significant. First, it signals a possible change in why people come to the library. Since users must have laptops that can access a wireless network, their choice for coming to the public library for connectivity may indicate that their primary reason to come to the library is to have public access computing and not to use more

traditional library services. Increased growth in wireless connectivity (and use) may signal the need for significant improvements in the library's overall information technology infrastructure.

In addition, one can speculate that this increase in wireless connectivity occurred in many instances without significant improvements in the library's basic connectivity from its provider – thus, as suggested above, degrading overall quality and sufficiency of the library's connectivity. Or, if libraries augmented their bandwidth to accommodate the wireless service, libraries incurred additional costs to provide the service – at a time when library budgets largely stayed the same from previous years (thus, in effect, a cut due to personnel costs and inflation).

Finally, in the case site visits, librarians reported an interesting phenomenon that “patrons” came to the library's parking lot or in close proximity to the library in order to access the free wireless connection being offered at that library. They did not come into the library itself, they did not come to check out a book or use a library computer. Rather, they simply came close enough to the library to access the wireless network. Implications of this new “service” being provided to library “users” are not well understood, except possibly the increased stress on the library's technology infrastructure, but such “library use” is likely to increase.

Training

The 2004 study asked: “Given the limited funding that is available to many public libraries, what priority should such [information technology] training activities receive?”¹² In 2004, 31% of library systems reported that they were unable to provide information technology training to patrons. In 2006, that number had dropped to 21%, suggesting that the amount of training in information technology had increased significantly during this time period.

In this two-year time period, libraries appear to have allocated more resources to support patron training in the use of information technology. Thus, one might also ask now in 2006, from where did those additional resources come to support training? Or were resources reallocated from other existing library services? The impacts of this additional support for training, however, raise a range of interesting issues such as the degree to which the training resulted from increased demands on the library for such training, if such additional training results in increased use of library public access computing, and is the library filling a void in community services by providing such services?

Public Library Public Access Computing as Enabling the Digital Revolution

The 2004 report demonstrated that public libraries served as critical community-based access points to a wide range of digital content. The 2006 study reinforced and expanded on this vital role of public libraries to their communities. Indeed, it is possible to assert that public libraries serve as both the source of first resort as well as the source of last resort (safety net) for information. In response to the qualitative survey question, nearly three-quarters of libraries indicated that the most important social roles of the Internet access provided by public libraries

¹² Bertot, J. C., McClure, C. R., & Jaeger, P. T. (2005). *Public libraries and the Internet 2004: Survey results and findings*. Tallahassee, FL: Information Institute. Available: <http://www.ii.fsu.edu/plinternet>. Pg. 9.

remain access for those who would not otherwise have it and help for who need assistance with the Internet.

Qualitative data that describe public library services in the gulf coast states during the 2005 hurricane season provides strong evidence that the public library was not only a first choice, but often times the best source for a range of e-government information and services. Further, additional research on this topic suggests that federal, state, and local governments place significant demands on public libraries to provide a range of e-government services and support that go well beyond providing public access computers.¹³ Further, it is evident that governments provide minimal to no support to public libraries in meeting these demands. There is a need for additional research on the role of public libraries in e-government and national disasters.

Internet Access from the State Perspective

Comparing some of the findings from the state data between the 2004 and 2006 studies produces some interesting results. Some of the more interesting points are the continuities between the 2004 and 2006 results.

Most states had fairly similar, if not identical, percentages of library outlets offering public Internet access between 2004 and 2006. For the most part, changes were increases in the percentage of library outlets offering patron access. An exception, however, were the library outlets of Washington DC, where the percentage of outlets offering patron access declined steeply.

The average number of hours open per week in 2004 (44.5) and in 2006 (44.8) were very similar, as were the percentages of library outlets reporting increases in hours per week, decreases in hours per week, and no changes in hours per week. Data across the states indicate that physical space is the primary reason for the inability of libraries to add workstations.

In terms of overall operating budgets, two of the states with highest percentages of library systems with increases in total budget—Delaware and Rhode Island—were among the top states in 2006. On the other had, Ohio was one of the top three in terms of highest percentages of library systems with decreases in budgets in both 2004 and 2006.

There is also consistency in the findings related to upgrades and replacement schedules. In both 2004 and 2006, Delaware and Rhode Island were the states that had the highest percentage of libraries that are able to follow their replacement and upgrade schedules, while North Carolina was one of the states with the highest percentage of libraries not able to follow their replacement and upgrade schedules in both 2004 and 2006.

However, there were some clear areas of difference between 2004 and 2006, as well. For example, the percentage of library outlets with wireless access was an area of significant change among the states. In many states the increases in wireless access were quite large. Most of

¹³ Bertot, J. C., Jaeger, P. T., Langa, L. A., & McClure, C. R. (2006). Public access computing and Internet access in public libraries: The role of public libraries in e-government and emergency situations. *First Monday*, 11(9). Available: <http://www.firstmonday.org>.

leaders in percentage of library outlets offering wireless access changed in the period between the studies, with the exceptions of Kentucky and Virginia. West Virginia was also a consistent, being among the states with highest percentage of library outlets with no plans to add wireless access in both 2004 and 2006. The specific reasons for these differences is unclear, and may reflect budgetary, staffing, and various issues.

These similarities and differences among the states indicate that the evolution of public access to the Internet in public libraries is not necessarily an evenly distributed phenomenon, as some states appear to be consistent leaders in some areas and other states appear to consistently trail in others. While the national picture is one primarily of continued progress in the availability and quality of Internet access available to library patrons, the progress is not evenly distributed among the states.

Federal Information Policy

The 2004 and 2006 studies collected information on E-rate as well as views on other information policy issues that affect public access computing and technology deployment. The 2004 study concluded:

While the public library community has adopted more and greater networked technologies, it has yet to re-think the federal policy framework that supports libraries. Instead, with policy initiatives from (among others) CIPA, the Telecommunications Act of 1996, the E-Government Act of 2002, and the USA PATRIOT Act, a range of piecemeal policies have placed public libraries in a reactive rather than proactive position. For libraries to better advocate for their needs and the needs of their patrons, they must move from a reactive to a proactive stance in addressing issues of national policy. Viewing these legislative changes holistically, the public library community will be better able to reassess its priorities and abilities in the new policy environment.¹⁴

The study team finds that libraries are largely still reactive to a policy environment that has a substantial ability to impact the role of public libraries in the networked environment. Since the last study, for example:

- Congress reauthorized, and the President signed, the USA PATRIOT Act, which still permits access to library patron and other records with little oversight;
- Congress is considering a new telecommunications act which may discontinue the E-rate, among other things;
- DOPA, the Deleting Online Predators Act (H.R. 5319), requires schools and libraries to block access to a broad selection of web content such as MySpace from schools or libraries, as well as access to a wide array of other content and technologies such as instant messaging, online email, wikis, and blogs.

There is a need for an overall policy strategy that secures the roles of public libraries in the networked environment, and removes barriers that impede their ability to serve as unfettered

¹⁴ Bertot, J. C., McClure, C. R., & Jaeger, P. T. (2005). *Public libraries and the Internet 2004: Survey results and findings*. Tallahassee, FL: Information Institute. Available: <http://www.ii.fsu.edu/plinternet>. Pg. 13.

access to increasingly important digital content. If libraries remain passive, they will continue to face impediments to public access computing and Internet access.

Public Libraries and E-government

As shown from the findings from the qualitative question on the national survey, public libraries are a key provider of e-government access and services in the United States. Government agencies rely on the fact that public libraries provide access, people with alternative means of access rely on the public library for assistance with e-government interaction, people with no other means of access rely on the public library for access to e-government, and entire communities rely on the public library for access to e-government for every day services, e.g., prescription drug sign-up and applications, a range of social services, and benefits services/information, and in times of crisis, e.g. the 2005 hurricane season in the gulf coast.¹⁵ Ultimately, this provision of public access computing and Internet access makes public libraries one of the very few community-based public access points for e-government, but this effort needs recognition and support.

Public libraries serve three significant roles in meeting the e-government needs of their communities through their public access technology infrastructure: (1) individuals and communities in a crisis rely on public access computing and Internet access in public libraries as the first refuge for seeking assistance and beginning to rebuild; (2) individuals with no other means to access local, state, and federal e-government information and services rely on public access computing and Internet access in public libraries as the access point of last resort, the safety net for e-government access; and (3) individuals with access to computing technology and the Internet rely on the public library as a preferred place of access due to the capacity and support available.

These important roles remain unexplored and in wider considerations of the place of public libraries in a public policy and e-government context. Thus, a number of key research questions that require additional work include:

- What specific financial and personnel resources are the nation's public libraries currently allocating to emergency and e-government services?
- What is the extent to which federal, state, and local government agencies expect public libraries to provide access to e-government services?
- What are the specific roles and responsibilities that public libraries currently provide in support of various e-government programs and services?
- How can public libraries become better informed as to how best to provide these e-government services?
- How can public libraries better use their role in support of emergency services and e-government to advocate for increased funding?
- What is the current federal information policy related to the role of public libraries in emergencies and e-government and how should these policies evolve in the future?

¹⁵ Bertot, J. C., Jaeger, P. T., Langa, L. A., & McClure, C. R. (2006). Public access computing and Internet access in public libraries: The role of public libraries in e-government and emergency situations. *First Monday*, 11(9). Available: <http://www.firstmonday.org>.

These are but a sample of possible areas for additional research. But overall, public libraries have responded to a number of unfunded government mandates to support public access computing for a range of e-government services.

A Divide by Any Other Name

Though the discussion of the “digital divide” has become much less frequent, the state data from this study seem to indicate that there are gaps in levels of access between libraries in different states. While every state has very successful individual libraries in terms of providing quality Internet access and individual libraries that could be doing a better job, the state data indicate that library patrons in different parts of the country generally have different levels and quality of access available to them.

Higher percentages of library outlets in states that have more rural populations or more diffuse populations have lower connection speeds for their Internet access, have fewer average workstations, have lower levels of wireless access, and are more likely to connect to the Internet using an Internet Service Provider. Together, these characteristics indicate that residents of more rural, less populous states generally may not be able to receive the same kinds of Internet access as residents of more densely populated states.

Gaps in access are also evident between different regions of the country. For example, the highest percentages of library systems with increases in total operating budgets were concentrated in states in the Northeast, while the highest percentages of library systems relying on E-rate funding were concentrated in the Midwest and the Southeast.

Similarly, the leading states in adoption of wireless technology are concentrated in the Northeast and mid-Atlantic, while the libraries with the lowest levels of wireless were located in the Southeast. Southern states, particularly Arkansas, Louisiana, and Mississippi, also had the highest percentages of libraries not offering any Internet training to patrons. In contrast, libraries in the Northeast and mid-Atlantic had the highest percentages of libraries planning to add more Internet workstations. It is important to note with data from the Gulf States that the effects of Katrina may impact the results reported.

While the experience of individual patrons in particular libraries will vary widely in terms of whether the access available is sufficient to meet their information needs, the fact that the state data indicates a general divergence in the levels and quality of access between some states and regions of the country is worthy of note. An important area of subsequent research will be to investigate these differences, determine the reasons for them, and develop strategies to alleviate these apparent gaps in access.

Demands for Enhanced and Expanded Networked Services

Given the widespread connectivity now provided from most public libraries, there continue to be increased demands for more and better networked services. These demands come from governments that expect public libraries to support a range of e-government services, from residents who want to use free wireless connectivity from the public library, and patrons that

need to download music or view streaming videos (to name but a few). Simply providing more or better connectivity will not, in and of itself, address all of these diverse service needs.

For example, in the Fall and Winter of 2005-2006 many public libraries provided assistance to seniors on selecting and applying for the part D Medicaid drug prescription plan. Many seniors did not know how to use or access the Internet; many were not familiar with interactive forms and applications; and librarians reported that many did not understand the particulars of the plan and application process. In short, public librarian support for this service went well beyond provision of Internet connectivity. Rather, the support services required significant and serious personal training and knowledge. The same conclusions are true with librarian services in the gulf coast states to support FEMA forms and related services during the 2005 hurricane season.

Increasingly, public access computing support will require additional public librarian knowledge, resources, and services. Examples of these services from the Medicaid prescription drug plan and the 2005 hurricane season are clear indications that public access computing will lead to increased demands for enhanced and expanded services. The degree to which public libraries can provide such enhanced networked services and maintain the traditional services is unclear. Without better local public library resource support it is unlikely that both enhanced and expanded public access computer services and traditional services can continue.

Increased Complexity of the Networked Environment

The networked environment continues to increase in scope, service and resource possibilities and capabilities, and complexity:

- The networked environment is such that there are multiple uses of bandwidth – public Internet access, staff access, wireless access, integrated library system (ILS) access, etc.
- Public access computers can provide access to the Internet, while some are only for online catalog (OPAC) use, and some are shared by staff (i.e., reference) and patrons.
- Licensed resources might be made available by the library itself – but it is equally likely that a library provides access to resources licensed by a regional consortium or state library agency.
- We are now in the Web 2.0 environment, which is an interactive Web that allows for content uploading by users (e.g., blogs, YouTube.com, MySpace.com, gaming).
- Streaming content, not text, is increasingly the norm.
- There are portable devices which allow for text, video, and voice messaging.
- Increasingly, users desire and prefer wireless services.

It is in this context that public libraries offer their public access computing services and resources.

This is the now the environment in which libraries provide public access to networked services and resources. It is an enabling environment that puts users fully in the content seat – from creation to design to organization to access to consumption. And users have choices, of which the public library is only one, regarding the information they choose to access. It is an

environment of competition, advanced applications, bandwidth intensity, and high quality computers necessary to access the graphically intense content.

The impacts on libraries of this new and substantially more complex environment are potentially significant, and effect library service and resource provision, staff skills, training requirements, and public access computing and Internet access requirements. As user expectations rise, combined with the provision of high quality services by other providers, libraries are in a competitive and service/resource rich information environment. Providing "bare minimum" public access computing and Internet access can have two detrimental effects: 1) relegate libraries to places of last resort, and 2) further digitally divide those who only have PAC and Internet access through their public libraries.

Changing Priorities

The 2006 study may mark an important point in the development of public access computing in public libraries. Future key issues are likely to revolve around:

- Increasing the quality and sufficiency of connectivity rather than having some kind of connectivity that might be perceived as good enough.
- Developing new strategies to manage expanded and enhanced public access computing services.
- Managing the regular and ongoing upgrades of the public library's information technology infrastructure.
- Marketing networked programs and implementing local advocacy strategies that better demonstrate the role of public libraries in providing public access computing.
- Grappling with new expectations of public libraries, such as provider of e-government access and community lifeline in times of disasters.
- Obtaining technically savvy and service oriented librarians who excel in both the traditional and networked environment.
- Assessing, understanding, and incorporating new networked and interactive technologies into ongoing library services.

How public libraries continue to change and make the transition into a complex political, electronic, and service environment will have considerable impact on their long-term viability in tomorrow's society.

Planning to become a successfully networked public library, as shown earlier in this report, is no small task. But leadership, planning, working the political environment, having a stable and adequate funding stream, and employing high quality technical literate staff are essential. The public access computing services provided by the nation's public libraries are now a core service that will likely only expand over time. How that expansion and the degree to which libraries become successfully networked are key topics to monitor in the years ahead

Implications for Future Studies

As the complexity of the networked environment impacts public library services, roles, and demands on librarians, any assessment of public library public access computing and Internet access must also account for the increased complexity of the actual environment. Thus, another major impact of the complexity of the networked environment is the ability of studies such as these to adequately measure library connectivity, public access computing, the range and type of networked services provided, and the depth and extent of the library's information technology infrastructure. The increased complexity is replete with measurement challenges such as:

- Determining actual library bandwidth. Increasingly, libraries have multiple lines/services in operation within the library (e.g., for the ILS, public Internet access, wireless access). Moreover, bandwidth within a library facility may vary (wired versus wireless) and bandwidth between buildings (system versus branches) may vary. Capturing bandwidth accurately, therefore, is a substantial challenge.
- Capturing the full bandwidth picture. Should a library subscribe to DLS, for example, download speeds are greater than upload speeds. Thus, it is important to know the full picture of connectivity.
- Determining adequacy of bandwidth. Given the bandwidth picture, bottlenecks in throughput may exist in any number of places. Thus, determining adequate and quality bandwidth benchmarks may prove elusive.
- Access to services. It may be the case that libraries would like to upgrade their connectivity speeds (or other aspects), but simply do not have access to appropriate telecommunications services. For example, a library may only be able to subscribe to DSL services. Or, perhaps there is only one provider in the area which charges substantial rates for broadband capacity.
- Nature of networked services. The type, scope, and extent of networked services that libraries now provide and are likely to provide in the future are increasingly complex. Identifying these services, understanding impacts from the services on library management and users, and determining the impacts on the library's information technology infrastructure will only become more complex.
- The local context. Time and again, the qualitative data demonstrated that there were a number of local situational factors that impact a public library's public access computing and Internet access suite of services/resources. National surveys tend to average out these local factors due to their need to capture data across a large number of libraries.

All of these factors, and more left unsaid, point to challenges in describing and measuring the public library networked environment. And yet, it is essential to capture the current state of public library network service provision as well as explore how libraries are meeting tomorrow's needs.