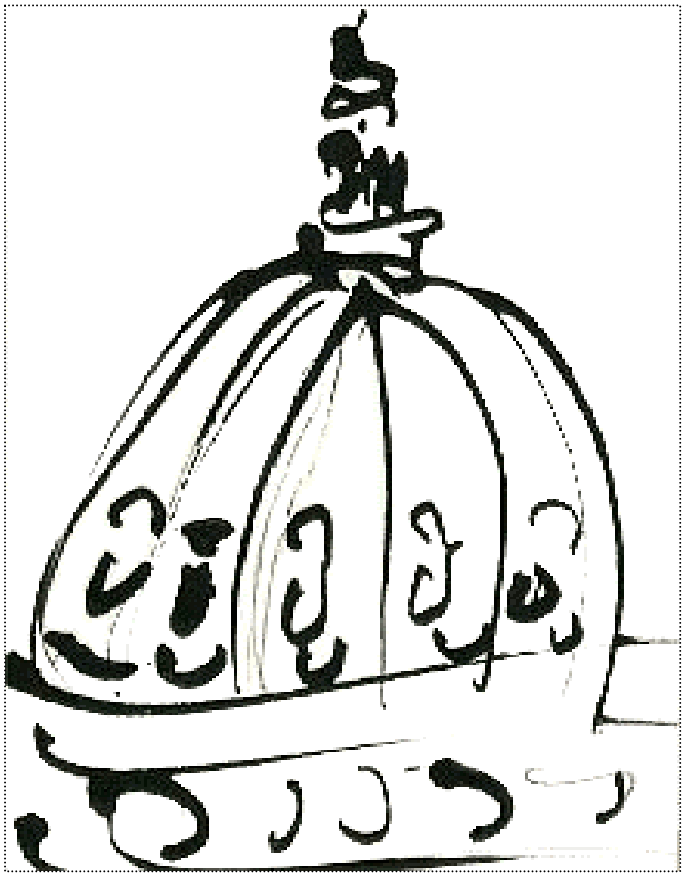
Information Use Management and Policy Institute
College of Information, Florida State University



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

September 2006

Information Use Management and Policy Institute
College of Information
Florida State University
Tallahassee, Florida 32306-2100
http://www.ii.fsu.edu/

Funded by the
Bill and Melinda Gates Foundation
and the American Library Association

APPENDIX 9: STATE LIBRARY ROLES

Internet Service Provider (ISP): Iowa and New Jersey State Libraries

By

Alan Schmitz <aschmitz@silo.lib.ia.us>
SILO Program Coordinator,
Rob Zangara <rzangara@njstatelib.org>
IT Director, New Jersey State Library
and

Joe Ryan

Two of the State Libraries visited found it important to assume the role of Internet Service Provider (ISP) early in the process of getting public libraries connected to the Internet. The State Library of Iowa was faced with hundreds of small telecommunication providers who were either unable or unwilling to provide broadband connections. But today, Iowa no longer serves as ISP to the state's public libraries now that there are commercial providers offering broadband connections throughout the state. The New Jersey State Library (NJSL) has successfully played the ISP role via 14 separate networks geographically dispersed throughout the state for over six years. NJSL recently decided to continue and expand this role. There has always been Internet access commercially available throughout New Jersey. But New Jersey libraries continue to want the low price, high quality and responsive technical support that NJSL has been able to offer.

Iowa's Experience

History

Iowa's telecommunication situation is quite different from New Jersey's. Iowa has roughly 10 traditional telecommunications companies and hundreds of independents. New Jersey has two: Sprint and Verizon.

The State of Iowa Libraries Online (SILO)[54] <http://www.silo.lib.ia.us/for-ia-libraries/SILO/index.html> "was established in 1995 through an HEA (Health Education Act) Title II-B grant from the U.S. Department of Education. The State Library of Iowa <http://www.silo.lib.ia.us/>, in partnership with the Iowa State University (ISU) Library <

[54] "SILO offers other services as well (from the SILO web site): "SILO Project staff created a statewide union catalog known as the Locator that currently includes holdings from 699 libraries. They also developed a web-based interlibrary loan application that is currently used by 712 Iowa libraries of all types. Approximately 25 libraries participated in a pilot project that supported searching remote catalogs via the Z39.50 protocol. The SILO program continues to support the Locator and interlibrary loan program, work with Iowa public libraries to facilitate high speed Internet access, and provide statewide access to electronic databases, including OCLC's FirstSearch and EBSCOhost."

http://www.lib.iastate.edu/>, was awarded a $2.5 million grant over two years to provide resource sharing services, access to electronic databases, and telecommunications technical support to Iowa's 543 libraries. The grant was to pay particular attention to better serving Iowa's rural residents. In 1997, the grant was extended for two years. The State Library provided management oversight, library consulting, and training for the grant's projects. The ISU Library provided office space, support staff, and automation system technical support. The State Library contracted with the university's computation center for server maintenance and telecommunications support.

Since the grant ended in July 1999, the State Library has continued SILO as a sponsored program through ISU. The program was most recently renewed in a three-year contract signed in 2004. The State Library has sustained the program with LSTA and state funds, and ISU regards its participation in the program as a significant outreach opportunity"[55]

History of ISP Role[56]

SILO got into the ISP business as part of its original U.S. Department of Education HEA Title II-B grant. The grant included a small, pilot project to provide high-speed Internet service to the State Library, Library Service Areas (LSA were regional libraries), and a small number of public libraries. The Iowa Communications Network (ICN) <http://www.icn.state.ia.us/> was just coming online, when the pilot project started in early 1997. SILO acted as an aggregation point for public libraries that wanted to connect to the Internet through the ICN. Libraries purchased 56K and T1 data circuits to SILO, and SILO routed their network traffic onto the Internet. During the grant period, 1997 through 1999, SILO provided on-site installation and 8x5 technical support. After 1999, SILO continued to provide 8x5 technical support, but libraries had to hire their own contractor to install and configure their router.

The ICN originated all of the frame-relay connections for SILO, but very few public libraries and none of the LSAs were directly connected to the state-wide fiber optic network. There were only around 60 public libraries that had direct access to the ICN. Less than 40 of those have ever used the ICN and SILO for Internet access. Connecting through the ICN and SILO was expensive, because services usually had to be provisioned from the ICN and a local carrier. A 56K frame-relay circuit typically ran from $150 to $300 per month. A 56K frame-relay circuit typically ran from $150 to $300 per month. A T1 frame-relay circuit typically ran from $1200 to $2000 per month. The circuit costs only included what the public libraries were charged for their end of the connection. The State Library still had to subsidize the network by covering the Internet port charges for everyone.

With hundreds of potential public library ISPs including telecommunications companies, cable and DSL providers SILO developed what became known as SILO's High-speed ISP Database to track local public library broadband ISP options. SILO was regularly asked by local

[55] The extended quote is from the SILO web site, about SILO section: <http://www.silo.lib.ia.us/for-ia-libraries/SILO/about/index.html>.
[56] The following section is based on a February 22, 2006 e-mail interview with Alan Schmitz, SILO Program Coordinator.

public libraries to help them make sense of their connectivity options. Initially, Alan Schmitz developed the database to determine the extent of broadband coverage in Iowa. "I wanted to know if there were any patterns to the coverage. I also wanted to know if libraries would have better luck asking their local telco, cable companies, or wireless providers for connectivity. After I loaded the first batch of data, I was able to make a few observations that I could pass on to State Library and LSA staff. 60% of libraries had some kind of broadband option available, so it was certainly worth asking local providers about access. Most small towns, especially those with populations of between 500 and 2500, had better broadband options than those in larger communities. One traditional phone company (Iowa Telecom) was far behind everyone else, but they were starting to roll out broadband in specific parts of the state."

"We used the database to track the progress of companies like Iowa Telecom and Mediacom as they rolled out broadband coverage state-wide. We also used the database to tell libraries who they should contact, if they were interested in broadband service."

"Mary Wegner, the Iowa State Librarian, regularly reported numbers from the database at the Iowa Telecommunications Alliance meetings. She focused on three numbers: libraries that were using broadband, libraries that had a broadband option but didn't have broadband in the library, and libraries that didn't have a broadband option available. Eventually the data and repetition at the Iowa Telecommunications Alliance meetings paid off. Mediacom offered broadband access for all public libraries in communities they serve at one of these Alliance meetings. Other telcos followed, making their own offers of broadband access to libraries."

"Currently we're using the database to focus on those libraries that don't have broadband installed yet. We don't use it for one on one consulting much any more, but it does help us keep track of the last 20% of libraries that don't have broadband yet."

Today

When SILO got into the ISP business, it was really was the only viable alternative to dial-up. The only other public libraries with dedicated connections connected directly to the ICN and paid their own Internet port charges. When DSL and cable services became widely available in Iowa, it became clear that libraries would be able to get faster and less expensive service through local service providers. Why should a library pay $150 per month for 56K service, and the State Library subsidize the service, when the libraries could get a 256K connection from their local phone company for $40 per month? The State Library decided to start shutting down SILO's frame-relay network in July of 2004. The shutdown was essentially complete in July of 2005. Eight public libraries continue to use the frame-relay network, but six of those have plans to move to DSL or cable service from local providers. Alan Schmitz notes, "We didn't want to continue to subsidize Internet connectivity for a small number of libraries. We also didn't want to promote expensive 56K service when faster, less expensive options were available locally."

SILO has provided e-mail hosting service for libraries from the beginning of the Title II-B grant to the present. The service was limited to libraries that connected to the Internet through

SILO. As part of the Gates Staying Connected grant,[57] SILO will be opening its e-mail hosting service to any library with a high-speed connection. SILO will also be offering web hosting services. From the start, SILO offered Iowa public libraries extensive technical support and advice.

New Jersey's Experience[58]

History

The New Jersey State Library (NJSL) has maintained the Hub program for about eight years with 340 libraries participating.[59] The Hub consists of 14 separate networks geographically dispersed throughout the state offering frame relay 76kbs to T1 connections and e-mail. The 14 networks were created more for political rather than technical reasons. Use of the hub services is free to local libraries but they must pay for the local loop connection between library and the nearest hub network. There are only two principal providers in New Jersey: Sprint[60] and Verizon, unlike Iowa where there are hundreds. Each New Jersey public library connects to one of the 14 networks via Verizon Access NJ <http://www.accessnewjersey.net/anj/> using a three year renewable contract at an average rate of between $100 and $300 per month. To purchase a T1 Hub equivalent service would cost on average $1800 per month.

Currently NJSL spends $800,000 to maintain the existing hub annually. Internet access was available to all New Jersey public libraries from the start. From the start, NJSL's ISP role was based on public library demand for the service from NJSL. Public libraries participated in the program largely due to lower cost, familiarity and trust, and extensive, quality, technical support (not offered by commercial providers).

Today

NJSL found that, while the existing configuration was effective in delivering core services, it did not do so in the most stable, practical or cost effective manner.[61] Further, the existing Hub did position NJSL and associated public libraries for future growth or to strategically take advantage of current opportunities or emerging technologies. Commercial

[57] See: Iowa Public Libraries and the Gates Staying Connected Grant <http://www.silo.lib.ia.us/news/news/News-2005/gates-staying-connected-grants.htm>.

[58] The following is based on a February 22, 2006 telephone interview with Rob Zangara <rzangara@njstatelib.org> IT Director, New Jersey State Library.

[59] Technically New Jersey in not an Internet Service Provider but a provider of continuation of service. A commercial telco, most often Verizon, provides a connection form the library to the nearest hub. NJSL then provides the connection to other New Jersey libraries, NJSL and to the Internet beyond.

[60] Sprint's participation in this market lags due to the Sprint/Nextel merger. Discounted rates for public libraries have been announced but are presently unavailable.

[61] Rob Zangara noted that there was no one network, no redundancy, may points of potential failure, duplication of effort, no vender leverage, no uniformity of service, no mechanism for measuring quality of service.

alternatives exist. For example, Verizon Access NJ offered deeply discounted rates[62] to libraries and schools until 2014 for connections ranging from 56k to OC12-48 plus free equipment (routers and switches) and services (videoconferencing). It was a good time to revisit NJSL's ISP role. Should NJSL continue on as an ISP or drop this service? If the ISP role should continue, what infrastructure should be created and what services should be offered to local public libraries?

NJSL brought New Jersey library leaders and Hub participants together in September 2004[63] to explain the situation and pose two options, either:

- Now that the goal of access had been achieved set new goals related to networks services, stability and efficiency. Thus, continue NJSL's ISP role with more efficient and effective network infrastructure; or,
- End the Hub program and rely on commercially available services. Adopting the no NYSL ISP role option would mean that NJSL would send each public library a check and the library would purchase its broadband connection from a commercial provider (Sprint, Verizon, or a cable or DSL Internet connection from various providers).

The public library managers were assured that whatever option was chosen each public library's existing Hub service would be continued until any changes were made and complete. NJSL's position was neutral. Rob Zangara, NJSL IT Director commented, "There were good reasons pro and con for both options." The group strongly advised NJSL to continue its ISP role.

NJSL has not become over confident. Was the endorsement of NJSL's ISP role simply to go with the familiar? The cost savings is arguable. Did the local libraries want to avoid having to go to the Freeholders to ask for the change to a commercial provider? The sense was that a key persuader was that local libraries did not want to lose the extensive technical support and hand holding that NJSL provides (and commercial providers would not provide).

New Infrastructure

The new IT infrastructure set as a goal a stable, scalable infrastructure from which to deliver and expand technology services to libraries. The new design includes three points of presence (POPs), one POP in each of the three NJ local access transport areas (LATAs), redundant connections between POPs, three different ISP backbones to the internet with close to 100% expected network uptime. Core services included: Internet access, web site hosting,[64] e-

[62] See <http://www.accessnewjersey.net/anj/anj_rates.asp> for Verizon rate structure.
[63] For (2004, September 23) PowerPoint presentation used see <http://www.njstatelib.org/LDB/Technology/NPL_Hub_Mtg_9-23.ppt>.
[64] Domain choice: library can register/keep its own or use njlibraries.org domain for e-mail/web; web hosting on Red Hat Linux servers with MySQL databases supported, 1 GB size limit; Windows web hosting option will be available; complete web site access via FTP; with each library receiving an initial 8 public IP addresses.

mail hosting,[65] anti-virus protection and technical support. Expanded core services include: anti-spam protection, domain name services, router maintenance/insurance and firewall/Intrusion protection. Planned optional services (offered at subsidized rates) include:[66] help desk, network management and reporting, domain registration, dial-up access, data storage and backup, disaster recovery, technology consulting and project management.[67] Rob Zangara stressed the scalability of the new infrastructure – in both directions. The new infrastructure can be expanded if demand for service increases. The new infrastructure can also be reduced if interest in these services decline.

Libraries will have a menu of services from which they may choose. Most of these services will not be interdependent and a direct connection to the POP is not necessary for most services. For example, a public library can get free cable internet access cheaper and faster than connecting through the new Hub. If the library decides to connect via a third-party provider (because it is free) instead of directly to the new Hub, the library may still take advantage of most of the new Hub's service offerings, such as email and web site hosting, anti-virus and anti-spam protection, and paid services like technology consulting. A local public library may choose what works best for the particular library. "We expect the new network to be in place in the first quarter of 2006. At that time we will begin to migrate libraries that choose to take advantage of the new service offerings." The upgrade to a new infrastructure was aided by a $1.75 million grant from the Verizon Access New Jersey program announced June 20, 2005.

The new Hub has a mission subtly, but profoundly different from the old – ensuring connectivity is not enough. The new hub creates a statewide library network remarkably like one that might exist at a well run statewide corporation. The new hub will provide a platform to launch new statewide electronic resources and services be they initiated by the state library, the regional libraries or an individual library. The new hub will provide the underpinning for the introduction of new content and services to better serve New Jersey.

Conclusion

Iowa and New Jersey's experience illustrate a couple of key points related to State Libraries' roles in assisting local libraries to become successfully networked:

[65] E-mail accounts for staff with up to 10 generic aliases, 100MB mailbox size. Choice of managed or unmanaged e-mail administration. Anti-spam and anti-virus protection on all e-mail accounts.

[66] 24/7 monitoring for device and circuit faults; intrusion protection system will block malicious traffic, hacking, attacks on network; network management modules can isolate network problems to the device level; bandwidth utilization reports can be provided for library's circuit; alerts can be provided via e-mail when a router or circuit is down; and discounted server hosting available by arrangement.

[67] Taken from (2004, September 23) PowerPoint presentation used see <http://www.njstatelib.org/LDB/Technology/NPL_Hub_Mtg_9-23.ppt>.

- There is no one right way for State Libraries or external state or national level funders to assist local public libraries to become successfully networked. What is "right" in Iowa may not be right in New Jersey. Flexibility and attention to local needs matter.
- Yet all successfully networked public libraries must address two inter-related issues: How to obtain a safe, reliable, redundant, broadband Internet connection at an affordable price? How to solve the IT staffing needs, in this case does the local library solve IT staffing locally, rely on a commercial provider, rely on a State Library solution? The goal of the New Jersey solution is to remove resolution of Internet connection and LAN troubleshooting and repair from a local library's concern. Thus also, reducing the need for local IT staff as well.
- Most public libraries have not solved the local IT support issue. They need and value state level IT assistance and "hand holding." Iowa's commercial solution would not work as well as it has if the State Library of Iowa had not continued to supply good regional level technical support to local public libraries when it stopped providing Internet service.
- Clearly articulating options to local library managers and then,
- Listening to customer demand, in this case from local libraries within a state, is essential;
- Having an exit strategy, having a scalable infrastructure, when providing an Internet service to local libraries may be as important as how a new service is introduced. The newly adopted New Jersey ISP model features a scalable design that can expand with local library demand or shrink should local libraries migrate to commercial services.
- Public and private partnerships make Internet service provision. As well as other Internet services provision, work. Iowa worked closely with the Iowa Communications Network (another state agency), the Iowa State University Library and a number of local telecommunications providers to enable public library Internet connections throughout the state. New Jersey works closely with Verizon, Sprint and cable and DSL service providers to ensure that local libraries have the most appropriate, cost effective and reliable Internet connections available.

A reliable way to gain entrée into the library market and in to the best ways to assist a state's local public libraries is to start with the State Librarian and library development team.