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Aggregating broadband demand: Surveying the benefits and challenges for public libraries☆

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ABSTRACT

Public libraries in the United States play an important role in their communities by providing free internet access to all residents. Research exists that discusses public library connectivity by investigating funding, technical aspects, and library mission, and that also promotes membership in regional or state consortia as a means of making broadband internet connections more affordable. The research discussed here builds upon these works by asking the question: Do the benefits of aggregation, or pooling demand, justify the investment of state library resources in establishing and maintaining a library cooperative to support internet access? It reports on a survey of Indiana public library directors on questions related to connectivity, E-rate funding, and participation in the Public Library Internet Consortium, a statewide cooperative established by the Indiana State Library. The survey was conducted by Dr. Mary Alice Ball, who was affiliated with Indiana University School of Library and Information Science, Indianapolis while conducting the relevant research. Dr. Ball chairs the Telecommunications Subcommittee of the American Library Association's Office for Information Technology Policy.

1. Introduction

Until recently, broadband connectivity was a topic unfamiliar to the general public, many policy makers, and most librarians. In spite of the fact that a telecommunications infrastructure underpins all access to the internet, and therefore plays an integral role in economic growth and technological innovation, broadband has been largely underappreciated. Nevertheless, even if public librarians in the United States do not know about broadband standards, bandwidth, or speed, they understand what happens to their computer systems during peak usage times — things slow to a crawl. Now that more and more government services and job applications require internet access, Americans are beginning to understand the impact broadband has on their daily lives. Increasingly, internet access is being recognized as an essential tool for individuals who wish to be fully functional in society. The public library, a community anchor institution and often the only place within an area where access is available at no cost, is experiencing a growing demand for it.

Public libraries have limited resources to dedicate to the infrastructure necessary to establish and maintain internet connections and they look to the state library or to regional library cooperatives for critical support and expertise. One approach advocated as a way to make internet access more affordable is for libraries to combine or aggregate their demand by joining consortiums where they can purchase connectivity at more competitive prices.

The research discussed here builds upon existing literature about public library connectivity by asking the question: Do the benefits of aggregation justify the investment of state library resources in establishing and maintaining a library cooperative to support internet access? It reports on a connectivity-focused survey of Indiana public library directors; E-rate funding; and participation in the Public Library Internet Consortium (PLIC), a statewide cooperative established by the Indiana State Library.

One goal of the research was to ascertain if PLIC membership results in noticeable advantages for participating libraries and their communities. Another was to lend support to state librarians and policy makers as they consider the allocation of limited public funds during the economic downturn. The research also may be valuable to state library personnel and public library directors in their attempts to more effectively assess the advantages or disadvantages that come with membership in a library consortium or regional library cooperative, and to consortium staff who hope to make the case more persuasively for their continued operations.

A great deal of the knowledge on public library connectivity derives from national surveys conducted by John Bertot, Charles McClure, and their associates since 1997 (Bertot & McClure, 1997, 1998, 2000; Bertot, McClure, & Thompson, 2002; Bertot, McClure, & Jaeger, 2005; Bertot, McClure, Jaeger, & Ryan, 2006; Bertot, McClure, Thomas, Barton, & McGilvray, 2007; Bertot, McClure, Wright, Jensen, &

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Thomas, 2008). Other pertinent writing discusses the E-rate program (Hudson, 2004; Jaeger, McClure, & Bertot, 2005) that was mandated as part of the Telecommunications Act of 1996, thereby extending the Universal Service Fund in order to provide schools and libraries with discounted internet and telephone services. No analysis of public library connectivity can occur without including the critical piece played by E-rate discounts and funding.

A side effect of offering free internet access is that the public's expectations of libraries are changing and, in response to changing expectations, library missions are evolving to encompass new services and programs. In their 2006 report, Bertot, McClure, Jaeger, and Ryan (2006) articulated the concept of the Successfully Networked Public Library (SNPL), one that not only presents traditional library services but also offers networked services and electronic resources that are delivered over an infrastructure of advanced technology. The goal of becoming an SNPL may be daunting to public libraries that are all too aware of their limited budgets, yet it may be an important one for libraries to consider as they strive to serve their communities during the current economic crisis and to justify their budgetary requirements to taxpayers who insist on greater accountability.

ALA's Office for Information Technology Policy examined models for public library connectivity through focus groups and site visits around the nation. Its 2007 report (Weingarten, Bolt, Bard, & Windhausen, 2007) concluded that no single model exists for promoting broadband deployment to libraries and called for a state-by-state analysis in order to better understand local conditions affecting public libraries and their ability to provide reliable and robust internet connectivity to their communities. A second publication that came out of the OITP study, Regional Library Cooperatives and the Future of Broadband (2008), pointed to the aggregation of demand as an important strategy for delivering high-speed connectivity, particularly to small and medium-sized libraries. It also pointed out that library cooperatives serve members by advising, helping manage their networks, and providing technical support and training (*Regional Library Cooperatives*). This study developed out of the knowledge created by this earlier research.

2. Background

The issue of public library connectivity is a complex one that can only be fully understood when viewed within the broader political and economic environments of nation and state. It is interwoven with information policy surrounding broadband development and internet access because those policies, or lack of policies, influence the current conditions for libraries. The previous administration in Washington gave short shrift to broadband and, rather than articulate a clear policy for it, left its development to market forces (Mark, 2008). A content analysis of President George W. Bush's eight State of the Union address supports this viewpoint because it reveals that the words, "broadband," "internet," and "digital" were never mentioned.

According to multiple measures from a number of impartial organizations that evaluate broadband deployment around the world, the United States' rankings declined during the Bush Administration. As part of its overall ICT (information and communication technology) development index, the International Telecommunication Union (ITU), a United Nations agency, ranked the U.S. at 11 in 2002 and only 17 in 2007 (ITU, 2009). During the same time period, the U.S. also slipped in its rankings on the ITU's three separate ICT development sub-indexes: 1) access, from 16 to 22; 2) use, from 10 to 16; and 3) skills, from 5 to 11. In its *2008 ITIF Broadband Rankings* the Information Technology & Innovation Foundation (2008) ranked the U.S. fifteenth when using the criteria of household penetration, speed, and price. In April 2007 the Organization for Economic and Cooperative Development ranked the U.S. fifteenth in broadband use, down from twelfth six months previously, and fourth in 2001 (Benton Foundation, 2007).

The lack of attention to broadband in the United States was so great in recent years that the Federal Communications Commission, the agency charged with regulating internet communications, did not even have an accurate definition of broadband. In spite of the rapidly changing telecommunications environment, the FCC continued to define broadband as a speed of 200 kbps at a time when the marketplace touted significantly higher speeds (FCC Under Fire, 2007). Finally, in late 2008, the FCC updated its definition to 768 kbps, still fairly slow in the opinion of many experts (Dixon, 2009), and articulated five tiers of broadband service:

- First Generation data: 200 k up to 768 k
- Basic Broadband: 768 k to 1.5 Mbps
- 1.5 Mbps to 3.0 Mbps
- 3.0 Mbps to 6.0 Mbps
- 6.0 Mbps and above (Albanesius, 2008)

The change in presidential administration launched a new strategy for broadband, firmly placing it within overarching government plans to revitalize the U.S. economy. On February 17, the United States Congress passed the American Recovery and Reinvestment Act of 2009 (ARRA) (P.L. 111–5, 2009), an economic stimulus bill crafted by the newly inaugurated Obama Administration. The ARRA includes funding for broadband deployment through two agencies, the National Telecommunications and Information Administration (NTIA) within the Department of Commerce and the Rural Utilities Service (RUS) of the Department of Agriculture, $4.7 billion and $2.5 billion respectively. Some of this money will be available to public libraries so the findings of this survey may be particularly timely for states that hope to capture a portion of this federal funding.

By passing the ARRA legislation so quickly, Congress put deadlines and funding in place before the nation has a formally agreed upon broadband agenda. The ARRA mandates the completion of a national broadband policy by February 2010, but at the time of this writing in April 2009 the FCC has barely begun the process of formulating it (Federal Communications Commission, 2009). With broadband funding going through NTIA and RUS, a strategic plan being developed by a third agency, and the economic and societal implications affecting a wide range of stakeholders, the lobbying and jockeying at the federal level is intense (Dixon, 2009; Kang, 2009).

What then is the situation in the State of Indiana? During the last decade, circumstances influencing broadband deployment changed dramatically, and lawmakers required libraries to switch from public to private internet service providers. These conditions, described below, make it an interesting candidate for investigating the role of a library cooperative in promoting internet connectivity and in supporting efforts within a state to increase the number of SNPLs. The Public Library Internet Consortium evolved differently than consortia that were formed around a shared automated library system. The Indiana General Assembly chartered the Intelenet Commission in 1986 to oversee a single telecommunications network supporting public sector agencies and organizations throughout Indiana, including public libraries. Intelenet then contracted with the Indiana Higher Education Telecommunication System (IHETS) to operate and manage the Indiana Telecommunication Network (ITN), in effect making IHETS the state-supported internet service provider.

In 2004, administrative irregularities were noticed and traced to an IHETS employee who subsequently was found guilty of wire fraud related to equipment purchases tied to the federally funded E-rate program. After this was discovered, the Indiana state government disbanded Intelenet and reimbursed the federal government 8.3 million dollars. At the same time, IHETS reverted to its primary mission of serving higher education institutions. Effective July 1, 2006, all public libraries were required to shift their service providers from the publicly-funded ITN to commercial vendors. Technical and administrative support, including assistance with internet billing and the E-rate application process, previously managed by ITN had to