Libraries as Universal Service Providers

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In the twentieth century, public libraries deployed a number of creative means such as mobile and outdoor libraries, packhorse rural delivery, literacy training, and reading to the blind to ensure that everyone in their communities was served. Similarly, today's public libraries provide access to the Internet, ensuring equal opportunity and leveling the playing field for all Americans. 2/3 of Americans use a public library at least once every year, either in person, by phone, or by computer. These numbers hold for Americans of all groupings and ethnicities. Thanks to the Universal Service provisions of the Telecommunications Act of 1996, the Gates Foundation, and local, state and federal investments, 99% of public libraries are now wired—many with broadband and wireless services—and offer free public access to the Internet. Libraries are now the number one point of access for the public outside the home, school, and work, leveling the playing field for those left behind in the digital age. But universal service programs need increased funding, better coordination, policy changes, and service improvements if every American is to have the opportunity to participate in the 21st century information society.

History of Equitable Access through Public Libraries

Benjamin Franklin founded the first public lending library in the 1730's. His novel idea of sharing information resources was a radical one. In the rest of the civilized world libraries were the property of the ruling classes and religion. The first significant tax-supported public libraries were organized in the mid-19th century, conceived as supplements to the public schools as well as "civilizing agents and objects of civic pride in a raw new country."[1] By the early 20th century, more than 2,000 communities had public libraries, but it was not until mid-century and beyond that the federal and state government started to address sharp inequalities in service and support, especially in rural areas.

In early days of the republic, many individuals tried introducing the joys of reading to a growing United States. With the birth of librarianship as an organized profession in 1876[2], librarians began exploring innovative ways to brings books and library services to underserved populations. Among the early target groups were the homebound, the poor, poor white families in the rural south, immigrants in large cities, sailors at sea, and prison inmates.[3] Librarians brought books to the public by packhorse, bookmobile (the first was launched in Hagerstown, MD in 1910), outdoor carts, and boats. American librarianship worked hard to assimilate new immigrants. But in the South, where blacks had no access to public libraries prior to the Civil War, library services to African Americans remained mostly segregated until the civil rights movement on the 1960s when Congress passed several programs that sponsored training

of minority librarians and library outreach initiatives for disadvantaged communities. Furthermore, it was not until 1984 that Native Americans received support for tribal libraries, a move that was encouraged by tribal self governance in the mid 1970s.[4]

As part of their efforts to serve everyone, public libraries have adopted electronic technologies to deliver information to the general public and to special populations. While telegraphy was not widely used, the telephone was deployed as early as 1900 for the purpose of book renewals, and was touted as one of the effective means for providing reference service in a timely manner by 1908. By the 1940s, many public libraries set up a separate telephone reference desk to handle calls. The radio was also adopted early; just two years after the first news broadcast, libraries broadcast advertisements for their services and filled air time with story hours and public lectures, supplemented more recently by cable television programming, with some public libraries hosting community access stations, and national educational television shows such as *Reading Rainbow* and *Between the Lions*.[5] For the blind, the Library of Congress began issuing Braille books in 1931 through a nationwide network of public libraries, followed two years later by talking books, then record players distribution, and subsequently tapes, cassettes, and digital recordings.[6]

For half a century, the federal government has assumed a small but crucial role in providing equitable library services to underserved communities. After World War II, following a ten-year lobbying effort, the ALA succeeded in securing passage of the Library Services Act (LSA), which had a goal of supporting rural library programs. Then, with President Lyndon B. Johnson's "Great Society" program in the 1960s, which focused on disadvantaged urban communities, Congress passed the Library Services and Construction Act (LSCA), a bill that expanded upon LSA to include support for all types of public libraries and for construction; a year later, interlibrary cooperation and special services to institutions (including prisons) and the physically handicapped were added.[7] In 1996, ALA helped transform LSCA into the Library Services and Technology Act (LSTA), adding provisions to support technological innovation and moving the program into a newly created Institute for Museum and Library Services.[8]

Internet Access in Public Libraries

Thanks to technology and world-wide collaboration, today's libraries have migrated from a state of scarcity to a state of abundance, transcending their geographic, legal and political boundaries, with librarians serving as knowledge navigators and learning facilitators. What began in the 1950s as the automation of materials processing led to the deployment of computerized databases for locating information in the 1970's. More recently, libraries have offered direct public access to the Internet, supplemented by the purchase of commercial databases plus conversion of their own unique collections to digital formats, thereby creating digital libraries available anywhere, anytime. This capacity to deliver information directly and just-in-time to users helps connect collections and reference services directly to diverse populations with insatiable demand for information access.

In the digital age, public libraries are experiencing new vigor. Online or in person, today's libraries are more popular than ever. Polls estimate that more than 2/3 of the public uses U.S. libraries every year. During the 2000 election, people across the country voted loudly and clearly to pass 92% of the bond issues proposed to build and refurbish neighborhoods libraries; while referenda were not quite as popular in the tax cutting era of 2005, the majority still passed.[9] In the last ten years, communities in the U.S. spent billions of dollars to update public libraries with both eye-catching architecture and high-speed, high-tech hardware. Nearly every library now offers free public access to the Internet and the vast majority offer classes that teach residents how to log on and use new technologies as well as how to find, evaluate, and apply electronic information successfully. Many offer a variety of blogs, wikis, gaming, podcasting and other social networking opportunities as well as a presence in MySpace, Facebook, and Flickr, along with online learning and programming experiences in virtual spaces like Second Life and OPAL (Online Programming for All Libraries).[10] In surveys conducted in 2003 by Marist College and 2006 by Public Agenda, researchers found that the public now views libraries as key players in the digital age, and that 2/3 of respondents expect their libraries to prioritize computer and online services. Seven in ten favor wiring libraries in order to connect users that cannot afford access from home.[11]

In 1995, the National Telecommunications and Information Administration (NTIA) published *Falling through the Net: Defining the Digital Divide,* calling for "a pivotal role to be assumed in the new electronic age by the traditional providers of information access for the general public—the public schools and libraries."[12] While public libraries were a logical service provider given their free and open access to 97% of the nation's population and their history of outreach to the underserved, less than 1/3 of public libraries--mostly in urban areas--were providing public access to the Internet at that time.[13] Recognizing the opportunity offered by libraries in bridging gaps in access, Congress included a universal service program to connect schools and libraries when it passed the Telecommunication Act of 1996. The following year, it also reauthorized the Library Services and Construction Act as the Libraries Services and *Technology* Act, while the Bill and Melinda Gates Foundation supplemented federal support with a $250 million commitment to funding computer and software purchases, training, and technical support to the nation's neediest public libraries. When the U.S. Library Program ended in 2003, the Gates Foundation had granted more than 47,000 computers to about 11,000 libraries in low-income areas.[14] During that same period, state and local governments, as well as other foundations and the private sector, contributed to wiring and outfitting local libraries for public Internet access.

These efforts, particularly the federal E-rate (Education Rate) program for schools and libraries, authorized under Section 254(h) of the Telecommunications Act of 1996 (also known as the Snowe-Rockefeller-Exon-Kerry Amendment), have enabled almost all public libraries to purchase equipment to connect to the Internet and pay ongoing costs of otherwise unaffordable telecommunications services.[15] Of the $2.25 billion authorized for the E-rate, which is distributed annually to schools and libraries through the Universal Service Administrative Company/Schools and Library Division (USAC/SLD),[16] public libraries receive 3 – 4% of the funds. With E-rate discounts ranging from 20% to 90%,

based on the economic need of a community (as determined by participation in the National School Lunch Program) and whether the applicant serves a rural or urban area, libraries have received $497 million in funding over the eight years of the program. Just under 40% of public libraries receive E-rate support, most going to the neediest communities.[17]

Today, as a result of governmental and private support, 99% of public libraries offer Internet access to the public, a 500% increase since 1994 when only one in five public libraries offered online access.[18] While 63% of all public libraries had high-speed connections (769kbps or greater) in 2006, most (83%) were in urban communities; only 51% of rural libraries were offering high speed access. All libraries in communities with the highest poverty levels that qualified for the deepest E-rate discounts were connected, and these were most likely to have higher speed broadband (89%). At the same time, libraries with access below 56kbps dropped below 2.1% by 2006, most of these in rural communities.[19] On average, public libraries offered 10.7 graphic Internet workstations for public use in 2006.[20] That same year, Florida State University (FSU) researchers found 37% of public libraries offering wireless access and another 24% planning to do the same, with the bulk of wireless installations following the same pattern as broadband, with installations mostly in urban, suburban, and high poverty libraries.[21]

On-site visits to public libraries more than doubled to 1.2 billion annually since Internet access became available in 1994.[22] Today, thanks to concentrated investments in public libraries as universal service providers, libraries have become the number one point of access for the public outside the home, school and work, serving 10% of Internet users in the United States, and leveling access among those left behind in the digital age.[23] Recent surveys have found that ethnic and racial minorities use public libraries in similar proportions as whites.[24] Even though these groups have fallen behind in ownership of computers, they rely significantly on public libraries for computer and Internet access. Studies conducted for the Gates Foundation found that 18.7% of African Americans and 13.8% of Hispanics use public library computers, as compared with 8.6% of whites and Native Americans are three times more likely to use library computers than whites.[25] Similarly, youth from these racial and ethnic groups make greater use of library computers, with 29% of African American, 20% of Hispanic, and 12% of whites relying heavily on the public library for Internet access.[26]

Although individuals with a wide range of income use public libraries, those with low incomes (below $15,000) rely more on public libraries for Internet access--two to three times more--than those with high incomes (above $75,000).[27] For youth, 27% from low income families use library computers while only 11% from high income families do likewise.[28] A 2002 study in Colorado noted that, ΑOlder patrons with less computer experience rely on Internet access through public libraries, staff assistance and library courses more than any other group. This might suggest that people over 55 use public library technology more than any other age group because of the help available.@[29] Finally, the Gates researchers found that those without a high school degree, as well as those who are unemployed or underemployed, are more likely to rely exclusively on library Internet access.[30]

Of the nation's nearly 10,000 library systems with 16,500 outlets, 80% are located in rural areas or small towns with less than 25,000 people. Many of these libraries have no professional staff and are open few hours. In the year 2000, libraries in communities with less than 2,500 people operated with total budgets of less than $35,000 and with only part-time staff; those in communities under 1,000 people had budgets below $21,000. These libraries often serve populations who are poorer (42% live below the poverty line vs. 23% elsewhere) and less educated than their urban counterparts. With the arrival of public computers and Internet access, rural and small libraries began experiencing a dramatic transformation. Almost overnight, their access to resources went from a state of scarcity to one of abundance. At the same time, usage soared 90%, transforming these sleepy outposts into bustling community centers.[31] Particularly important to users of these libraries is their expanded access to government services, medical information, virtual interactive reference, and distance learning opportunities. Regrettably, the most rural libraries have fewer public access workstations, are less likely to offer wireless access, and lack high-bandwidth connections, which translates into limits on the use of many of the most current applications.[32] Furthermore, many cannot maintain and replace the equipment donated by the Gates Foundation. When computers break, no one is on call to fix them, often resulting in no access for lengthy periods. Finally, small and rural communities lack access to training that is so vital for sustaining public access computing.[33]

Universal Service: More than Connectivity

The success of universal service goes well beyond computer and Internet access. To ensure that everyone has the opportunity to participate in an information age democracy, communities need what Jorge Schement refers to as the 4C's: connectivity, capability, content, and context.[34] Once individuals and communities become connected, they need a reason for use. For low-income and underserved communities that may mean neighborhood-level information such as housing, childcare, and transportation news; information written at a basic literacy level; and content for culturally diverse populations, including non-English speaking Internet users, all of which are difficult if not impossible to find online. Local content for any purpose wanes in comparison to mass produced commercial sources. Furthermore, the most popular search engines probably will not display it in their top hit lists, thereby making it invisible to users, experienced or not.[35] If content that is relevant to individuals and members of the community is not available, even high speed connectivity will not encourage and sustain use. Since their founding, libraries have attracted users based on the relevance of their content, reader's services, and responsiveness to community needs; i.e. the 4 C's necessary for universal service.

Content

In the digital age, libraries provide far more than books and magazines. They offer a broad range of content regardless of format—and that content is selected in order to respond to the diverse needs of their unique communities. Much of the useful information available through libraries is otherwise unaffordable or inaccessible due to copyright and licensing restrictions. Libraries also add value to information; they

catalog, service, store, archive, and preserve it. In addition, they help a wide range of people, such as children, seniors, the disabled, immigrants, and the poor, find and use relevant information effectively. In 2006, the most frequently offered online services in public libraries were licensed databases (82.8%), homework content (60.9%), virtual reference (55.1%), and online instruction (35.6%).[36] More than 46% of libraries reported that they provide service for job seekers, 64% offer electronic resources for K-12 students, and 21% provided access and assistance with e-government services. They also offer numerous other services ranging from online investment data and real estate offerings, to information for college applicants and business and economic development materials.[37]

As more and more resources are "born digital," the public can only gain access through telecommunications networks. This is particularly true for e-government services where participation often requires online access. For example, taxpayers flood libraries in April to download tax forms and instructions as well as seek guidance. Seniors seek information and register online to receive mandatory federal Medicare prescription drug coverage. Immigrants communicate with and complete forms for government agencies documenting their work status. Farmers register electronically for federal water rights payments. And displaced hurricane victims used libraries to find housing, jobs and fill out FEMA forms.[38] With universal service providers now available in every community, government agencies are simply shifting the burden of front line services to public libraries as they reduce their own operating costs.

Today's libraries not only license and link to vast amounts of useful content, they embrace new opportunities for facilitating and shaping content, communication, and collaboration. Librarians compile and distribute data, create web sites and blogs, select and reformat publications, add descriptive metadata, digitize unpublished materials, and provide new tools for the collection, dissemination and preservation of knowledge. Library catalogs, community information databases, and other rich resources that are now available anytime, anyplace, at the click of a mouse enhance the library's offerings and make them popular destinations for Internet users who can find and renew materials without going to the library. Help is available as much as 24 hours a day through virtual as well as onsite reference services. To serve the full array of residents, libraries like the Queens Borough Public Library present their home pages in various languages and scripts, as well as display electronic information in compliance with the Americans with Disability Act. Also available through library web sites is online information about programs and services for new Americans, including registration for English classes and computer skills conducted in multiple languages. In addition, they offer tutorials and context-specific assistance in the use of the Internet and specific databases and other digital resources. And they help users find their libraries as well as items available through interlibrary loan.[39] For people with disabilities, libraries offer adaptive computer and telecommunications equipment such as Kurzweil reading machines, large print display screens, and talking computers. Many libraries also help users create and distribute their own content, making them not only a public access point, but also a popular destination for Internet authors as well as users. In effect, content is what makes universal service compelling, driving user demand for a meaningful online experience

along with boosting the need for greater bandwidth, equipment upgrades, and highly skilled staff.

Capability

Participation in a 21st century information society also requires the capability to utilize content and technology successfully. While the need for these skills has been around for generations, the dawning of the information age necessitates the development of broader information skills if people are "to separate the wheat from the chaff, the true from the untrue, the rumor from the real."[40] Those lacking basic literacy skills, estimated at 20% of Americans, struggle to read as well as use computers. Even those already proficient at finding, evaluating and applying information to solve daily problems can be overwhelmed by the proliferation of information and the difficulty of sorting through it. To cope successfully, citizens must be able to identify, evaluate, and apply information and communicate it efficiently, effectively, and responsibly. They must acquire 21st century literacy skills to flourish in the workplace as well as to carry out the day-to-day activities of citizens in a developed, democratic society. In her study documenting wide gaps between the speed and success of finding information online, Eszter Hargittai concluded that, "People may have technical access, but they may still continue to lack effective access in that they may not know how to extract information for their needs from the Web."[41]

Public libraries help a wide range of people--including seniors, the disabled, and the poor--acquire skills necessary to use emerging and adaptive technologies so they can navigate efficiently and effectively through bewildering amounts of information. In both rural and urban communities, libraries offer innovative training programs and undertake projects to bridge information access and skill gaps in several languages and in underserved communities. In 2006, more than 51% of public libraries reported that they provide information literacy training, 43% stated that they teach basic technology skills, and 41% indicated that participants in their training programs had no similar opportunities available elsewhere in their community.[42] Whether it is through one-on-one assistance or group classes, 80% of library users reported to Gates Foundation researchers that they were satisfied with the computer assistance they receive.[43] Some of these programs are offered inside libraries, others reach sites outside to locations ranging from day care and senior centers to prisons, and still others use cybermobiles to visit various local sites. Almost all are sponsored in partnership with community organizations that collaborate with their local libraries.[44]

Context

"Quintessentially American institutions…public libraries are both diverse and similar. As local structures in local sites, they are as different as the communities they serve—in size, scope, governance, funding, clientele, appearance."[45] The context within which these libraries develop and maintain their own collections, programs and services differs according to the needs and desires of local residents. In these locales, access to information and communication technologies is influenced by a wide array of internal and external forces and trends. These include environmental, economic, political, and social considerations that are the unique context in which public choices are made about

connectivity, content, and capability that help fulfill local needs. Each community encounters its own specific barriers and possesses particular assets that shape its ability to bridge information gaps. The global reach but local touch of public libraries offers an ideal context for offering universal service to a pluralistic society.

What distinguishes libraries as universal service institutions is the underlying values behind their mission, namely equity of access, diversity, intellectual freedom, education, literacy, and democracy.[46] The addition of computers and Internet access simply extends the tools deployed by libraries into the digital arena. But it is within this broader context of values that these newer programs and services fall. As Molz and Dain explain,

> …access to the Internet and online services does not and cannot define the public library. Hallmark of a democratic society, the public library is an open, community-based institution ensuring the public's right to know, a defender of the free life of the mind. Libraries remain complex, democratic, one-stop shopping and consultation centers for all manner of free information, learning, cultural enrichment, and entertainment for people of all ages and persuasions.[47]

Connectivity

Universal service becomes even more critical as computing and network capacity grows in the home, leaving those without connectivity further and further behind. Even with increased connectivity, communities continue to rely on an institution like the library to serve everyone's 21st century information needs. Gary Chapman, professor at the University of Texas and director of the 21st Century Project, argues that, "When you have a small number of people who don't have access," it becomes "a huge problem because that's when institutions will ignore them."[48] And, as access gaps narrow, contends Andrew Blau, the digital divide becomes even more of a problem "because that's when lack of access will be not just an inconvenience but a true barrier."[49] For this reason, institutions such as libraries need their resources constantly upgraded in order to offer the latest technological tools for all community members, including those with home access. Today's challenge, then, is no longer connecting libraries, but, as technology evolves and use expands, "It's a matter of staying in the game." explains Martin Gomez, President of the Urban Library Council.[50]

For those libraries that are connected, broadband access is now crucial. For many, particularly those in rural communities, connectivity is at such slow speeds that users can barely read their e-mail, let alone access graphic interactive web sites. In 2006, 45.5% of public library branches reported that their connection speeds were inadequate to meet user demand at least some of the time. Bertot and his colleagues point at that providing such a "bare minimum" of public access computing services has detrimental effects such as relegating libraries to locations of last resort and expanding the gaps for those relying solely on public libraries for access.[51] Even libraries that offer higher bandwidth connectivity find their response rates slowed when so many people use their services simultaneously. While it is important to maintain flexibility in the way universal service funds are awarded to diverse local communities, it is also imperative that the program

support universal broadband deployment. Without evolving the universal service program toward this standard, many communities are unlikely to realize President Bush's objective of having "universal, affordable access for broadband technology by the year 2007."[52]

Universal Service and Emergency Public Communications

The federal E–rate program has brought higher bandwidth, sooner to close to half of the nation's public libraries. In so doing, the program has created more than just public access computing sites across the country. It has also built an emergency public communications network that serves far more than local residents. An emerging universal service infrastructure enabled libraries in New York, immediately following the terrorist attack on September 11, 2001, to offer access to the Internet for vast numbers of residents left without power, connectivity, or telephones so they could find loved ones and assure others they were safe. On an hourly basis, the New York Public Library's updated its Web site to help identify survivors and link people to emergency resources.[53]

After recent hurricanes, libraries were again key to meeting the crisis information needs of the public. Libraries outside the devastated Gulf Coast communities stepped in to help displaced victims log onto the Internet to locate lost family and friends, apply for FEMA assistance, seek jobs and housing, use e-Government services, find emergency health care, view aerial photos, and place children in schools. Wherever people fled, they flooded libraries in search of computers and high speed Internet connections so they could reconnect and get settled. In response, libraries added hours and volunteers, supplemented by additional equipment sent by colleagues outside the region.[54] As communities faced devastation, one emergency service did work. All along the Gulf Coast, libraries provided space, phone and Internet service to displaced citizens as well as emergency Red Cross and FEMA workers. Indeed, universal service providers play an essential role in emergencies as evacuees turn to public access sites for help.[55]

In response to the terrorist attacks in 2001, the National Commission on Libraries and Information Science (NCLIS) prepared a report recommending that libraries play a critical role in crisis management. NCLIS stated, "It is clear that the United States needs more effective crisis information dissemination and management. It is also clear that we have a vital, comprehensive system of libraries in the United States that can meet the information needs of the public during, and after, an emergency or disaster."[56] As broadband networks become more prevalent in libraries, their vital role as universal service providers in times of crisis has proven to be an important component of the nation's emergency services infrastructure. Yet, libraries are not recognized for this critical service by public officials, and no homeland security funds are made available. One state, Florida, with extensive experience helping displaced residents following hurricanes, has found heavy use by libraries in emergencies, but "the existing network infrastructure is not really adequate. There is a need for additional funding to expand networking infrastructure and to provide broadband access if public libraries are going to fully embrace this new role."[57] Indeed, this newfound role for public libraries is

recognized by the public, but "their efforts as agents of e–government represent essentially an unfunded mandate."[58]

Shortcomings of the Universal Service Program for Libraries

Program Inequities

   While the E-rate program has connected many libraries throughout the country, its impact varies. Just as gaps in citizen's access to computers and telecommunications networks persist, so do disparities in support for institutions that underpin the universal service infrastructure. Differential levels of service across libraries, particularly between urban and rural and rich and poor districts as well as between states, must be equalized as well as sufficient before the country's evolving information needs are fully met through public access programs like the E-rate.[59] Connectivity alone will not ensure universal service. Libraries must also offer computers, software, content, and training appropriate for their communities if they are to succeed. These vital programs, funded locally, depend upon budgets that may vary greatly. Fluctuations in funding are particularly problematic for libraries in the poorest communities, many of which have seen services severely curtailed in recent years. Delays and uncertainties in granting E-rate funds further exacerbate the flow of monies, making it difficult for libraries to predict what they can afford from one year to the next. Once E-rate allocations are distributed for Priority 1 purposes—telecommunications discounts, little is left for fund Priority 2 internal connections such as wiring, cabling, routers, switches, and servers—the infrastructure that makes Internet access possible.

   Compounding inequities in funding is the reliance on an E-rate program poverty rate formula that is biased against public libraries, particularly those in the poorest communities. Currently, the FCC method for measuring poverty uses school lunch data by school district, averaging out poverty levels across a wide geographic area. In many communities, a library only serves part of the area. A preferred method for determining eligibility based on elementary school rather than full school district counts, as recommended by the American Library Association (ALA), would qualify some libraries for steeper discounts as well as position them more competitively for Priority 2 grants.[60] Under the present system, libraries almost never qualify for Priority 2 funds because the calculated poverty levels of their service area are too low. A more equitable formula would help poorer communities receive more funding for their libraries and would help libraries compete for a greater share of the pool of funds available, which is now only 3% of the $2.25 million available annually.

Infrastructure Challenges

   Even though many communities, especially those in the rural U.S., are eager to connect their libraries, they lack access to broadband. To achieve the Bush Administration's stated goal of universal broadband deployment by 2007, the ALA has proposed that the FCC use the E-rate program to aggregate demand from schools and libraries with others in a particular area in order to build a business case for much needed infrastructure buildout and/or expansion.[61] In addition to lacking broadband services, 3% of U.S. communities have no public libraries. The FCC has no alternative program for

connecting these communities, meaning that some people in the U.S. have no opportunity to use the Internet outside the home, school, or work.[62] In New York State, this translates into 1.3 million unserved people, meaning they not only lack libraries, but also public access to the Internet.[63] If unserved parts of the country are to participate in a 21st century information society, they will need to qualify for some form of institutional mechanism yet undetermined just to tap into the universal service program.

Bureaucratic Complexities

Bertot and his colleagues found that 35.3% of libraries that qualify for E-rate discounts did not apply in 2006 because they are either unaware of their eligibility, lack sufficient staff to implement new technologies, or find the application process too complex. Another 31.7% failed did not submit proposals because they felt the low discount rate was not worth the effort to participate.[64] Often, the neediest libraries do not have the necessary staff or resources to submit complex applications that include a multitude of different forms, growing from 3 in the initial year to 11 now.[65] The constant changing of forms and issuance of hard to find and understand FCC Orders makes the process that much more onerous. State libraries have stepped in to assist this process, offering training and consultation, without compensation or recognition by USAC or the FCC. Concern about barriers presented by the complex application process, the American Library Association with funds from the Gates Foundation sponsored a training program for state library E-rate coordinators in November 2006.[66] Another burdensome responsibility is the submission of technology plans that require significant preparation but are of little value, and tend to be used more to deny funding than to help libraries move forward. Attempts to eliminate waste, fraud, and abuse—problems that have not affected libraries--have delayed distribution of funds, resulting in an unpredictable stream of funding. Commitment letters are often issued 6-10 months after the beginning of the fiscal year, creating hardships for applicants as well as services providers and stressing an already strained relationship between libraries and local exchange carriers.[67]

Meaningful Performance Measures

Beyond problems with the application and disbursement process, USAC/SLD and the FCC need to collect better data and develop meaningful performance measures related to the core mission of the E-rate program. Statistics about the program are difficult to retrieve and manipulate; data sets from different sources often are not comparable. Because applications are submitted by individual libraries, library systems, consortia, school districts, or state agencies, it is difficult to sort out building-level data and to isolate library data from schools. National Center for Education Statistics library codes are not used, making it virtually impossible to cross tabulate E-rate data with other federal library statistics. Moreover, as a private, non-profit corporation, USAC/SLD has no obligation to make E-rate data sets available to the public.[68] Consequently, researchers must seek the cooperation of the FCC to get data, and then they are faced with the extraordinary challenge of cleaning it. To assess success, they must conduct extensive interviews and follow up studies to validate the program's performance and impact. As a result, libraries and schools must invest heavily in evaluation programs to learn whether the E-rate is working.

Demand Outstrips Supply

Although public libraries have leveraged private, federal, state, and local funds to offer high quality Internet access, 80% report that they cannot meet user demand.[69] Since day one of the program, demand outstripped supply of public access computers. For several years, libraries have faced declining budgets that are stretched thin trying to support traditional services as well as new technological applications.[70] With shrinking budgets and rising technology costs, many libraries, including 2/3 of those in rural communities, lack sufficient connectivity speeds to meet user needs let alone build capacity for the future.[71] Those fortunate enough to receive computer and software donations from the Gates Foundation are soon faced with replacing aging equipment. And they must also maintain costly telecommunications infrastructure, purchase expensive software and content licenses, and build competent technical staff to keep all this technology functioning. Although the E-rate program is the only way many libraries can offer Internet access, they must incur substantial additional costs to make universal service worthwhile.

Federal Laws Undermine Public Access

If libraries are not discouraged by the hurdles of applying for E-rate support, they may balk at a federal law that requires them to restrict user access to certain materials available over the Internet. The Children's Internet Protection Act (CIPA), passed by Congress in 2000 and upheld by the Supreme Court in June 2003,[72] mandates use of blocking software on all public library and school computers as a condition for eligibility to receive E-Rate discounts or federal grants under the Library Services and Technology Act (LSTA) and Title II of the Elementary and Secondary Education Act (ESEA). Unfortunately, filters do more harm than good, blocking only some sites with indecent materials and communications sent through e-mail, chat rooms, non-web sources, peer-to-peer exchanges, and streaming video while restricting access to thousands of legal and useful resources.[73] The categories used by filtering systems do not correspond to those that libraries are required to block under CIPA, nor do they restrict access solely to visual depictions that are obscene or child pornography for adults, or harmful to minors for young people under 17 years old. As a result, no filter is actually CIPA compliant. Furthermore, filters are expensive to install and maintain and libraries relying on federal funds must purchase more costly software and add staff to comply with the unblocking/disabling requirements raised by the Supreme Court. Unfortunately, federal E-rate and LSTA funds will not cover acquisition and maintenance costs—costs that may exceed monies granted by these programs. Since libraries were mandated to use filters in 2004, many have stopped applying for federal support.

Programs like the E-Rate target low-income communities, left behind in the digital age. But, according to the Partnership for Progress on the Digital Divide, "Requiring filters on library computers undermines that goal by relegating those who rely on libraries to second-class Internet access."[74] The 2003 Supreme Court CIPA decision forces many libraries to choose between their core values of intellectual freedom and equity of access, versus the acceptance of federal funds requiring the installation of faulty technological protection measures. As a result, 15.3% of libraries who previously

received E-rate discounts reported refusing to seek federal funding in 2006 because of such onerous strings attached;[75] as a result millions of library users have lost, particularly those Americans who reside in the most poverty-stricken areas of the country.

In July 2006, the House of Representatives passed another bill, the "Deleting Online Predators Act" (DOPA), which, like CIPA, is intended to protect children from content that is harmful to minors. But in reality, it would prohibit the use of popular chat room and social networking sites like MySpace, Flickr, and Facebook at schools and libraries that receive federal E-rate funds.[76] The bill's definition of off-limit websites is so broad that it could apply to instant messaging, wikis, blog, and just about any communication among users. Without access to these emerging learning tools, those from the poorest communities who rely on schools and libraries for computer use will lose their ability to participate fully in many of the educational opportunities offered through Interactive Web applications.[77]

As Congressional debate about the future of telecommunications ensues, many are calling for protection of network neutrality in order to ensure that less advantaged users of the Internet are not relegated to the slow lane on the Information Superhighway. Telecommunications giants contend that they cannot deploy broadband technologies nor compete without creating separate tiers of service for big content providers willing to pay a premium for high-bandwidth features like video streaming, online gaming, and voice service. Such a system where some providers are favored over others could further disenfranchise public access computer users when navigating a network, thereby limiting their ability to run applications and use services of their choice. Unless people who rely on public access computers through libraries are assured non-discriminatory access to all information over the Internet, they will not benefit fully from universal service.[78]

New Policy Directions

Libraries are a critical piece of the nation's information infrastructure, serving as "first refuge, first choice, and last resort for public computing and Internet access points."[79] To sustain their involvement and foster local investment to keep everyone logged on and literate, public policy must reflect changing technological and demographic needs across the U.S. The following recommendations are proposed o improve the universal service program

> ➢ Promote an evolving concept of universal service
>> o Use the federal E-rate program to achieve the Bush Administration's goal of universal broadband deployment by 2007.
>> o Support affordable, advanced universal broadband services for all libraries that offer public access computing.
>> o Maintain flexibility for eligible categories for services covered under the E-rate program in order to allow local communities to respond to their particular needs.
>> o Keep the E-rate program technology neutral and encourage more local control.

- o Support improved rural high bandwidth connectivity so that libraries can offer more advanced services in these communities.
- o Develop a means for extending the E-Rate program to communities that lack public libraries.

- ➢ Simplify the E-rate application process and reduce bureaucratic and other barriers to E-rate participation.
  - o Make it easier for less advantaged libraries to apply and receive assistance..
  - o Encourage local, regional, and state library organizations to develop technology plans, rather than requiring submission of a plan to USAC that fails to advance the needs of local libraries.
  - o Fund more libraries at higher discount rates so they can help the United States realize the vision behind universal service.
  - o Incorporate an evaluation component into the E-Rate program that promotes more useful and timely data collection and demonstrates the substantial state and local contributions to providing access.
  - o Rectify inequities in the discount calculation methodology so that libraries and schools can compete on a level playing field.
  - o Bring stability and create greater certainty for long term technology planning and budgeting by providing a permanent exemption from the Anti-Deficiency Act requirements and ensuring that future funding is not disrupted.

- ➢ Eliminate unwarranted and unfunded mandates that discourage participation and relegate library users to second class Internet use.
  - o Offer telecommunications services without content controls.
  - o Ensure that libraries continue to provide open access to all types of information to all people.
  - o Provide statutory protection for the principles of non-discriminatory open access to the Internet (net neutrality).

- ➢ Recognize and support the 4 C's--connectivity, content, capability and context as part of universal service.
  - o Develop a government-wide strategy for closing information access gaps.
  - o Coordinate federal, state, and other efforts to close information access gaps by working with agencies and organizations focused on all components of universal service.
  - o Leverage the E-rate program with other federal, state and private efforts in order to enhance the reach of the program and services to all Americans.
  - o Recognize the vital role that universal service plays during crises and include libraries in the nation's emergency services planning and funding.
  - o Fund libraries to serve as e-government agencies.

Conclusion

No U.S. institution is better equipped to provide universal service in the digital age than the public library. With only 3% of federal E-rate funds and less than ½ of the nation's libraries participating, local communities have leveraged other sources to develop a ubiquitous national electronic access network that is available to virtually all Americans. The universal service policy enacted by Congress in 1996 has enabled many libraries to offer high bandwidth connectivity sooner and sustain public access services once initial equipment was purchased or donated. Higher bandwidth has enabled libraries to purchase or link to vital but bandwidth-intensive resources despite declining budgets and aging infrastructure. Continuation of the E-rate program is vitally important and critical as more and more resources are available only electronically.

Ten years after the universal service program was authorized, the nation appears to be connected. Yet many of the libraries that buttress this public infrastructure still lack broadband connectivity and most need higher speed and quality connectivity to respond to the present let alone future needs of their communities. Almost all cannot keep up with demand. Those that do are faced with the unintended consequences of serving as de facto e-government agencies and emergency responders, two significant roles that are not officially recognized or funded. Furthermore, conflicting public policies and complex application processes undermine the good intentions of universal service. If the public is to continue to rely on public libraries "as the first refuge for the community in a crisis, the first choice for assistance in navigating e–government services, and the last resort for persons with no other means of accessing e–government,"[80] then it must support libraries with stable, ongoing funding. Achieving universal service requires far more than connectivity. This means that the FCC alone cannot make the difference. The Commission must coordinate its efforts with numerous agencies at the local, state, and federal levels as well as foundations and private organizations if the United States is to compete in a global market place and sustain a 21st century democracy.

In the digital age, policy makers at all levels must recognize the value and importance of supporting universal service for everyone. If all people are to have the opportunity to participate in their communities' economic, educational, social, political and leisurely activities, they must have access to ubiquitous, high-speed networks as well as relevant content and skills to use information efficiently and effectively. As telecommunications services evolve, so must public access programs that ensure inclusion. The E-rate program, by supporting connectivity through public libraries, has helped close access gaps by offering affordable advanced telecommunications services to underserved communities. The program has worked despite its many shortcomings. With increased funding, policy changes, service improvements, and coordination with other agencies, the library component of the universal service program can deliver on the promise of information equity for all.

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