

Table 3.4 E-rate & Libraries: Why So Little? What Can Be Done?	
Why So Little?	What Can Be Done?
Policy Making	
<u>Use of school lunch data:</u> Reflects a bias in favor of one type of those affected by the digital divide: poor school children. Public libraries serve poor school children. E-rate regulators did not consider that libraries also serve those affected by the digital divide throughout the community. Those, for example, who might not be poor but blind, might be a neighborhood of low-income seniors without poor children to eat subsidized lunches, and who might live anywhere in the community (or beyond) not just next to the nearest school.	Recognize that libraries do not only serve some in their communities (school children), but are the last and often the only resort for public access to the Internet for all. Devise alternative mechanisms to allow libraries to more fully participate.
<u>School bias:</u> Was the intent of the legislation to favor public schools over libraries (or other institutions for that matter)? Library managers note that the language of existing regulations, applications, instructions, explanations, and examples are mostly designed for public schools. Libraries receive only 3-4% of E-rate awards.	Reconsider the intent of the law and devise regulations and applications to enable libraries to use their unique assets to reduce the digital divide in ways intended by the law.
<u>Equity:</u> Do the present unintended application barriers thwart use by the very organizations E-rate funding is intended to help? The poorest libraries lack the time and expertise to handle a cumbersome, complicated application process. Yet they are the ones targeted for the most assistance.	Match programmatic intent to implementation procedures and application process.

Table 3.4 E-rate & Libraries: Why So Little? What Can Be Done? (Cont.)	
Why So Little?	What Can Be Done?
Policy Implementation & Technical Adjustments	
<p><u>Calculation of internal connection discount rate threshold:</u> Schools have choices on how to aggregate their request for E-rate funding (using school lunch data at the individual school level <u>or</u> district level), and how they pick their vendors. Libraries are limited to the district-wide lunch rate. Therefore, the smart schools structure a service request and choose vendors that favor high poverty schools. Often as a result, libraries do not meet the threshold to qualify for internal connections.⁷⁰</p>	<p>Allow libraries to have the same choices in how they aggregate the E-rate funding requests & vendor choice as schools. If libraries could qualify for higher priced equipment purchases the amount of dollars awarded to libraries would increase substantially. Consider the E-rate task force solution⁷¹ or consider an alternative poverty measure -- if one can be devised -- and consider if the intent is to define those affected by the digital divide as equivalent to a certain poverty threshold.</p>

⁷⁰ A senior Florida state library manager notes that, "There is only ONE library in the entire state of Florida that gets higher than an 80% discount [the minimum needed to qualify for an internal connection discount]. For Years 3 and 4 of the E-rate program, nobody got internal connection money (for wiring and infrastructure) unless they had over an 83% discount rate. So, the way libraries must calculate the discount hurts our ability to get the large funding commitments required for funding internal infrastructure. The imbalance really shows up when you compare poverty rates as determined by E-Rate vs. the Gates program. For the Gates program, we had 60% of public libraries with poverty rates of 10% or higher, and 23% with poverty levels of over 20% of the population served including libraries with poverty levels over 50%. Poverty rates this high do translate into high eligibility for Free & Reduced Lunch for quite a few schools in any given district. But when you aggregate the percentage for the whole school district, it comes out less than 80%. This is not to suggest that adopting the Gates approach is not without its drawbacks."

⁷¹ An E-rate Task Force member summarized: "E-Rate Task Force requests that FCC allow change in the way public libraries use the school lunch program data to support applications for infrastructure (internal connections). The change proposed would allow a public library, when applying for internal connection (infrastructure) funds for a specific facility, to use the school lunch data for the nearest K-12 school instead of the aggregate discount for the whole school district. That way, a library system would be able to calculate high discounts for outlets that serve high poverty areas and apply separately to support deployment in those facilities. If they are applying for infrastructure for a particular facility, why force them to aggregate the school lunch for that high poverty area with other low poverty areas. After all, the purpose is to serve high poverty. This would make the library calculation a lot more like what the schools are doing. It would begin to level the playing field."

Table 3.4 E-rate & Libraries: Why So Little? What Can Be Done? (Cont.)	
Why So Little?	What Can Be Done?
Policy Implementation & Technical Adjustments	
<u>E-rate staff lack knowledge of their program and libraries:</u> Complaints were common about E-rate staff not knowing their own program or library operations. Staff turnover was high. Library managers received conflicting advice. This created the impression that libraries were second class. More troubling, it eliminated certain, easy, access to the principal authoritative source about programmatic information and problem resolution.	Hire E-rate staff with library backgrounds, train and retain them better. ⁷²
<u>E-rate application favored public schools:</u> Library managers commented that the language of existing regulations, applications, instructions, explanations, and examples are mostly designed for schools.	Provide public library friendly applications, instructions, explanations and examples.
Policy Impact: Library Manager's View	
<u>Simplify Internet and telecommunication discount application process:</u> Library managers wonder why they must be involved so much in the application process and why do they have to apply so often? ⁷³ External data is used to identify qualified libraries, level of need/discount, and qualified vendors are (or could be known). Why doesn't SLD work directly with other agencies and vendors to obtain the data they need and pay the subsidies – public libraries need only see the discount received on their bills? ⁷⁴	Many library managers suggested an initial application process in which requirements and knowledge locally controlled are submitted. In subsequent years there are very brief renewal applications unless there are major local changes. Let the E-rate administrators (or their <u>paid</u> surrogates such as the State library or state department of education) assemble or supply needed external data.

⁷² Recently, library managers have noticed some improvements in their interactions with E-rate staff. One state library manager hopes that the present SLD staff's "reputation is running behind an improved reality."

⁷³ The FCC appears to require a new application every year because it does not have enough funds to meet likely demand. If a rollover process was allowed, FCC worries that whomever got their application approved in the first year would continue to take all the available money in subsequent years. This would not allow all potential applicants a chance to participate in the program.

⁷⁴ A library E-rate task force member notes that, "To date, the FCC does not seem interested in handing off the application process to the vendor community for fear it would favor incumbent telephone companies over new companies trying to establish a toe-hold in new consumer markets."

Table 3.4 E-rate & Libraries: Why So Little? What Can Be Done? (Cont.)	
Why So Little?	What Can Be Done?
Policy Impact: Library Manager's View	
<u>Make the application process easy:</u> Many library managers said that it was easier to tap local sources for the purposes E-rate was intended to fund (Internet and telecommunications costs and internal connections), thereby reducing funds available for other essential tasks. Many felt the application favored those with access to experienced grant writers and local IT staff. Access to these technical staff is least likely in the libraries E-rate most seeks to target. Not all libraries have a public school district IT manager equivalent to rely on for this type of support.	Simply, make the application process easier than the alternatives or the rewards greater. If this is not an option, then make access to paid, experienced grant writers and IT personnel available to those libraries least likely to have or be able to afford them.
<u>Make procurement process manageable:</u> Managers found procurement terms time intense, complicated, and out of line with state or local practice.	Consider using state or local government procurement regulations instead.
<u>Improve library manager's knowledge of their IT infrastructure:</u> Many library managers, or their IT designates, do not know what they have, who provides it, what it costs, let alone how it works or where to start to find out. ⁷⁵ As a result, they do not know how to begin to determine if they qualify for E-rate.	State library, professional association (both initiated without financial support from SLD), and SLD's own efforts have not fully addressed this issue. It may now be appropriate for SLD to initiate an intense, short-term effort at the state and local level to get library managers enrolled in the E-rate program.

Most of the librarians interviewed strongly support the promise of the E-rate program. E-rate promises to subsidize several key recurring costs to operate an effective Internet service. As a result, public librarians are more sensitive to discussions of programmatic change or funding

⁷⁵ A state library development manager recently had this fairly typical experience: "We just spent 3 weeks 'helping' a large county library who told us they could not do the E-rate because the county had a contract for telecommunications and they had to use it. After a lot of "research" on our part, we found out that they, in fact, were not using the county contract but rather a combination of tariffs and a state contract. To get that information we had to talk to the telco state rep, the State Technology Office, and the County MIS people. So, after 3 weeks, a lot of back-and-forth and no compensation from anyone, we were able to get them into the E-rate program. While digging for this information, we found out that the County MIS head had changed. The former County MIS director did not want to be bothered with supporting the library's E-rate request. The new MIS director was keen on it. In some respects, the library is as dependent on county/municipal cooperation with the E-rate application process as it is dependent on the school district to share data that determines discounts rate. If you're missing either piece, it's enough to thwart the any attempt to participate."

continuance because a change immediately affects the libraries' bottom lines in this and subsequent years. Library participation in the E-rate program is disproportionately low. There was general recognition by all those interviewed that change was needed to achieve wider library participation. As one library manager remarked: "Start-up woes for a multi-billion dollar federal subsidy program are to be expected. But isn't it time the E-rate administration got it right?" Otherwise, still more E-rate eligible libraries will find it easier to tap local sources for telecommunications and Internet services funding rather than use the E-rate program. This will leave the SLD, and ultimately the USF, in violation of its own mandate.

Bill & Melinda Gates Family Foundation, U.S. Library Program

The Bill & Melinda Gates Foundation U.S. Library Program⁷⁶ started in 1997 with the goal of expanding public access to computers, the Internet and digital information in State library certified public libraries that serve low-income communities.⁷⁷ Two of the states participating in the present study, Florida and Michigan, received Gates awards in the second round. The other study participants, Colorado and Michigan, are in the third round of funding underway now.⁷⁸ Table 3.5 indicates awards made to date to the states visited in this study.

State	Year Award Began	Amount
Florida ⁷⁹	1999	\$10.5 million
Michigan ⁸⁰	2000	\$4.8 million (plus) ⁸¹
Colorado ⁸²	2001	\$3.4 million (plus)
Pennsylvania ⁸³	2002	\$5.5 million (plus)

While not the specific focus of the present study, the researchers considered any comments those interviewed made about the Gates Fund and summarize them here. Gates Fund efforts clearly played a significant role in public library Internet services and the reduction of the digital divide. The Gates Fund approach offers a useful contrast to LSTA and E-rate funding. Public libraries were (and are) the extraordinary beneficiaries of all three programs (LSTA, E-rate, and Gates) in operation during the same period.

⁷⁶ For further information see:

<<http://www.gatesfoundation.org/learning/libraries/libraryprogram/default.htm>>

⁷⁷ This is an outgrowth of Microsoft's "Libraries Online!" program that started in 1995 to bring computer access to the disadvantaged through public libraries.

⁷⁸ For further information on specific public library participants in participating states in the Gates Fund see: <<http://www.gatesfoundation.org/libraries/uslibraryprogram/grants/default1.htm>>.

⁷⁹ Figure from a PowerPoint presentation by Gates fund administrator Richard Akeroyd in a presentation to Florida public libraries.

⁸⁰ From: 6/15/00 press release.

<<http://www.gatesfoundation.org/libraries/uslibraryprogram/announcements/announce-234.htm>>

⁸¹ Figures for Michigan, Colorado and Pennsylvania do not include donated software (from Microsoft), technical support (first year unlimited phone calls to the 800 number, second year a limited number that apparently no library has exceeded.) and training.

⁸² From: 11/10/00 press release.

<<http://www.gatesfoundation.org/libraries/uslibraryprogram/announcements/announce-299.htm>>

⁸³ From a personal communication from the Director, Bureau of Library Development, Commonwealth of Pennsylvania Library.

There are many characteristics that distinguish the private Gates Fund approach from the federal LSTA and E-rate efforts to aid public library Internet services and reduce the digital divide. The Gates Fund, for example, appears to have worked closely with state libraries to make their initiative work while retaining tight control of how funds were spent. Perhaps the most salient attribute of the Gates Fund may be that of a one-time effort⁸⁴ to bring the information infrastructure⁸⁵ of the target public libraries⁸⁶ up to a minimum standard.⁸⁷ In the case of libraries with Gates minimum standard infrastructure or better, the fund supported the next order of magnitude improvement. The Gates Fund approach may well define the limit of what is possible to improve an organization's information infrastructure with a one-time effort.

The benefit a public library derives from Gates funding is best determined by public library staff knowledge of the new technology given to the libraries. Those that will benefit most will be those who understand the technological tools they are given and who have the staff to harness the tools' power, and who develop and offer services to those potentially affected by the digital divide. Those that will benefit least, indeed benefit almost by accident, will be those who have no knowledge of the technology given and do not seek to gain any knowledge.

The Gates Fund planners clearly understood this. A Florida State library manager familiar with Gates Fund efforts notes, "Just as Gates set a standard for services and connectivity in each state, they also had a standard for staff ability. They undertook a HUGE effort to train librarians in Florida and established 20 training labs with the condition that the public libraries that received a lab made a commitment to use it to train librarians in their region." Florida has recently received an additional Gates Fund grant to turn their initial training efforts into a sustainable state-based program.

Gates Fund standards, for example the service, connectivity and staff knowledge standards mentioned above, were influential in raising the bar of standard practice and were used by libraries in their own future planning of Internet-based services.

Already there are several basic benefits evident at participating libraries.⁸⁸ All of the librarians interviewed described the program as essential to expanding, sustaining, or in a few cases, beginning their public access Internet services. Gates Fund grants raised the public Internet access norm in most libraries from single workstations to a local area network (LAN) connected to the Internet. Gates Fund grants also raised the norm of how workstations could be used productively in libraries by freeing up the time available on them and broadening what could be done (due to software availability or updated software in libraries already providing such service and access). The number of workstations offered by the Gates Fund grants allowed

⁸⁴ Unlike both LSTA and E-rate which are ongoing projects. But note, Gates Fund future intentions have not been stated.

⁸⁵ Defined by Gates to include equipment, software, training and at least temporary technical support.

⁸⁶ Gates like E-rate targets libraries serving the impoverished. LSTA benefits all libraries.

⁸⁷ The standard shifted over the years of fund's effort due to technology advances and based on what is learned from earlier years.

⁸⁸ For additional benefits see: Bill & Melinda Gates Foundation U.S. Library Program. Evaluation of U.S. library programs. <<http://www.gatesfoundation.org/libraries/uslibraryprogram/evaluation/default1.htm>>. See also: Gordon, Margaret; Gordon, Andrew & Moore, Elizabeth. (2001, February 15). New computers bring new patrons. *Library Journal*, <<http://www.libraryjournal.com/gatesLibrary.asp>>.

many libraries to extend workstation use for the first time (beyond a half-hour, for instance). E-mail use in libraries could be permitted. Users could do word processing (writing cover letters, resumes, letters to friends, term papers), presentations (for school or work), do their personal finances, teach themselves to use a database manager, and even play games! All libraries praised the software and associated training given with the workstations. Both library staff and the public were making good use of software that many libraries would not have otherwise purchased, and many libraries could not have afforded on their own.

Gates: Good or Bad or Not So Simple?

While all public library Gates Fund recipients were grateful, public librarians had two contrasting reactions to the program and its implementation. One group characterized the foundation's effort as "ambitious, highly organized, and generous." A second group labeled the program as "arrogant, insensitive, and inflexible." The contrast was so dramatic that it caused the investigators to wonder if each group was talking about the same program. The researchers heard similar opposing comments in both states that had participated in the program and in two instances from libraries within the same federated systems. Further discussion with Gates Fund participants suggested that these contrasting groups and points of view were determined by the libraries' information technology (IT) planning and implementation capacity.

Gates Fund program implementers in round two appeared to divide libraries into those that had the capacity to plan and implement a networked Internet service and those that did not. Those libraries that knew what they were doing appear to have been sped on their way. Those libraries that did not have access to local IT expertise were given a pre-determined "cookie-cutter" package. In some cases, the package worked just fine, in others the cookie-cutter seemed imposed and out of touch with local circumstances according to those interviewed. For example, one library manager with limited information technology knowledge said, "They told us here is what you get. I told them it wouldn't fit in my library, four networked workstations in a 900 square foot building! And they told us, here is what you get, take it or leave it. So I took it and when they were gone I gave the server to the [local] school district, kept one [workstation] for the staff and used two of the workstations for the public the way I wanted it."

Libraries with available local IT knowledge (whether on staff, or accessible via volunteers, local school district, local government, etc.) all described the same basic experience. "They [Gates library program] told us what they had to offer, we told them what we had planned. Once they knew that we knew what we were doing and they understood what we had in mind, they went out of their way to assist us to take maximum advantage of their program and to help us achieve our goals. They even agreed to give us equipment not originally part of the program offerings so that we would succeed."⁸⁹

Perhaps Gates Fund training needs to begin earlier, prior to libraries making choices about what equipment to accept, and with a different focus at that point. Librarians without local

⁸⁹ A state library administrator from the other state that had participated in the Gates Fund program at the time of the site visits reacted to this library's experience as follows, "Generally, we found them more flexible than portrayed here. Where a library was too small to accommodate equipment, they allowed the library to put the equipment in a different branch, or would reduce the award to a more appropriate amount."

IT knowledge available had basic concerns: where can I put the equipment; what knowledge will I need to run it (and who will train me and can I learn what I need to know); what can I do with the technology (including the software); what other libraries are doing with similar technology; and how do I get from here to there? Some of this material is covered at later points in the training the Gates Fund already provides. Some of this material, perhaps in less detail and for a different reason, may need to be covered earlier. Perhaps this training is only necessary for those libraries without available local IT knowledge.⁹⁰

Recent, as this study goes to press, reports of Gates Fund improvements in this area from states in the present phase of Gates Funding highlight another key component of this fund's approach. The Gate Fund evaluated the program from the beginning and quickly modified procedures where possible as problems and issues were uncovered. Evaluation was built into the program and consciously drove programmatic adjustment.

Public Libraries on Technological Training Wheels Again

Getting new and improved technology has not been accident-free. A number of libraries that received Gates funding in Michigan and Florida reported a rash of security breaches after the installation of the Gates equipment. One library security expert summarized the problem this way. "You have all these libraries with new LANS, underutilized capacity on their servers because they are at the beginning of their life cycle, and many libraries with poorly trained or non-existent IT staff. Server technology is new to the local library staff and while they may have been told about potential security problems they ignore the threat. They say to themselves, 'we're too small, it can't happen here.' These unprotected sites are ripe for attacks by hackers or even college kids looking for a place to store their MP3 music files. Librarians need to be made aware of the problem and need training in how to secure their sites."

Other Gates Fund participants interviewed noted the need for more staff to manage the additional equipment – the staff has not been hired due to lack of local resources. Smaller libraries, in particular, noted the need to cope with questions and training needs on a greatly enhanced range of software and dramatically more powerful equipment.

The Gates Fund is raising the information infrastructure bar for public libraries serving the poorest in the country. For many of the participating public libraries, receiving great technology will not be enough to take full advantage of the gift. Ongoing training will be required to take full advantage of what was given and to best serve those in their communities potentially affected by the digital divide. Also, and yet to be determined, is the degree to which the program's accomplishments can be sustained over time rather than being a single infusion of technology.

⁹⁰ The study team did not have access to Gates Fund training or materials so lack enough familiarity with the training program to comment more specifically. Rather, the study team reports here on comments and suggestions made by library managers in various stages of participation in the Gates Fund program.

Impact of Public Libraries on the Digital Divide: Status

The realization that access to information technology has a profound impact on quality of life is a relatively new insight. Attempting to provide equity of knowledge and access to a new information technology as it is being introduced, rather than after the fact, is newer still. No one wants to repeat past mistakes. In fact, while the library community can pat themselves on the back for trying, there has been no road map for how to successfully eliminate the digital divide. Public library managers, on the front lines of efforts to reduce the digital divide, have a perspective that national policy makers need to understand.

Defining the Digital Divide

Interest groups support digital divide initiatives in the belief that their group, the poor, minority, rural, handicapped, female, and others are among those affected by the digital divide and that they will benefit. The reality, when viewed from those on the front line of providing knowledge and access to the Internet, may be different. Public librarians define those affected by the digital divide as anyone that enters the library that needs to access the Internet or needs help using it. As a result, which group affected by the digital divide gets served, how, and where and the limits of what users can know may be perceived differently by a library manager implementing external funders' and program advocates' intent.

Those Affected by the Digital Divide can be from Any Group

The people who use the Internet in libraries or who need help using the Internet can be, and are, from any social category imaginable. Of course, there were many at every site visited who the library was the principal or only source of Internet access and training. When the library started offering the Internet often few community members of any social category had access to the Internet or training in how to use it. Study participants later reported that use came from a range of users: wealthy individuals who liked the social interaction that occurred around the workstations, the technologically literate with Internet access at home and work liked the library because it was convenient, and school children flocked to use the Internet at the library after having access at school. Several librarians independently suggested that those affected by the digital divide may not be limited to any single or cluster of social categories. A more pragmatic approach is to help those in need.

Those Affected by the Digital Divide Must Come Through the Libraries Doors – For Now

Most of the libraries visited could only serve those affected by the digital divide (however defined) in their communities if they physically came in through the library's doors. Libraries did not seek out those affected by the digital divide or systematically identify their locations in the community. Libraries did not generally target those affected by the digital divide for Internet presentations or training. Nor did librarians go out into the community to present the Internet or train Internet users. The libraries' existing facilities were already in heavy use – seeking out more users wasn't possible. Training was one-on-one because most libraries visited did not have available clusters of computers or computer labs.

Most libraries are struggling to meet the needs of those who arrive on their doorsteps. This means, at least for the present, that there may well be more affected by the digital divide in communities served by public libraries that are not reached. A clear example in most rural areas are people who live a mile or more outside of the town where the public library is located – their access is less. Those in urban areas separated from their city’s library by a busy highway represent an equally under-served group. At present, those affected by the digital divide must come through the library’s doors. The next phase must provide the incentives and resources to take Internet training and services to those most in need within the library’s community.

Some issues yet to be addressed in order to move the majority of public library Internet services beyond the building walls include:

- Some librarians believe they will never do outreach of any kind. Some librarians believe they can never teach more than one person at a time, or will need training to do so...or its not my job.... Some board members believe libraries should not do outreach and that group instruction is the job of teachers not librarians.
- Many library administrators want to reach out to those affected by the digital divide (however defined) and bring these people into the library. Bringing those affected in for training neither guarantees there are adequate numbers of workstations, nor that there are adequate levels of staffing and that staff are properly trained.
- Some library managers recognize another type of divide. Internet access may be available, but there is nothing of interest there for the divided. When library managers look for digital content that may excite those affected by the digital divide it can be hard to find.⁹¹ They know that local content may be of most interest to those affected by the digital divide, but lack the staff resources to create and organize it. Many would like to be able to develop a library web page with something more than a cute picture and with current library hours, the library catalog, other library services, etc.
- When they think about taking the Internet to those affected by the digital divide they lack the mobile labs required to make it happen, and lack the “gutsy” staff to operate those labs.
- Some libraries are already moving out beyond the libraries’ walls to make the Internet a part of the lives of those affected by the digital divide. The challenge is to advance the pace at which they get served.

⁹¹ Children's Partnership. (2000). Online content for low-income and underserved Americans: The Digital divide's new frontier. Washington DC: Children’s Partnership. <http://www.childrenpartnership.org/pub/low_income/>.

Certain Efforts to Evaluate the Digitally Divided may Violate the Vulture

Librarians are reluctant to prove the success of their services to those affected by the digital divide if it means asking their users personal information such as income, race or ethnicity, age, what technology they have at home or work, etc. Librarians have learned that being “too nosy” may drive the public away. Librarians don’t like to test people’s skills, such as in using the Internet. Librarians have learned that their users value the institution because it is not a school, users are not tested, indeed some of their users avoid schools.

Librarians are curious about their users, they want to know how well they are doing to reduce the digital divide, but they know their users preference for privacy and respect their wishes first. Evaluators eager to prove public libraries success, particularly to retain or expand funding, can and must be sensitive to tacit library-user agreements regarding how the institution operates.⁹²

Public Libraries Believe Measures of Capacity are Adequate for this Phase

In earlier work (Bertot, McClure & Ryan, 2000), the study team identified several areas in which to evaluate network services: capacity, use, and impact. These are summarized in Table 3.6. In this early phase of developing assessment measures of public library Internet services, several members of the study team suspected that public libraries measures of capacity might well be an adequate way to assess progress.

Participating libraries were reluctant to do more than measure capacity. They believed that the emphasis of the initial phase of public library digital divide efforts was on capacity building, “build it and they will come,” rather than showing use or impact;⁹³ Public library Internet use has been at or exceeded capacity from the start at most libraries and readily apparent to local governing boards so collecting use data has appeared unnecessary. As one library manager summarized, “Look, everyone knows that demand for use of our Internet workstations have been heavy since we started. Anyone who doesn’t believe it can come in and look!”

⁹² It is possible to protect library-user agreements. See for example, Library Research Service (2001, May 8).

⁹³ Building it nearby meant establishing the capacity to provide Internet access in reasonable proximity to those most in need rather than just to those who could afford to pay. The degree of access and proximity to need would constantly improve over time. Implied was a prioritized sequence of discreet steps: build capacity, then generate use, that will then yield impact.

Table 3.6 Selected Ways of Measuring Network Services.		
Measure Type	Definition	Example
Capacity measure	A <u>capacity</u> measure is an input measure that describes the ability of an organization to make use of a networked information resource or deliver a networked information service.	Examples include the number of Internet workstations or the maximum speed of public access Internet workstations.
Use measure	A <u>use</u> measure is an output measure that describes the utilization of the information resource or service. A common approach is to measure the <i>extensiveness</i> of a resource or service. That is, how much of a service does a network provide.	Examples include the <i>number of public access Internet workstation users</i> or the <i>number of electronic reference transactions</i> or <i>number of visits to an organization's web site</i> .
Efficiency measure	An <u>efficiency</u> measure relates resources used to service provided. As efficiency measure may relate a capacity measure to a use, impact or outcome, measure.	Examples include cost per virtual visit or Average daily use per public access Internet workstation.
Outcome measure	An <u>outcome</u> or <i>effectiveness</i> measure is explicitly tied to the organization's (or unit's) goals, objectives and planning process unlike measures of input, use, and impact that do not necessarily depend on the organization's explicit objectives and planning. A good outcome measure provides data that tells an information manager if a specific unit or organizational objective has been achieved.	An example would be the average weekly number of hours a web service is available given an organizational mandate to serve its customers 24 hours a day, 7 days a week.
Impact measure	An <u>impact</u> measure is a further extension of an output measure that describes the effects of an information resource or service's use on some other activity or situation.	Examples include increased revenue attributed to a company's e-commerce web site, the number employed or the number of newly literate readers as a result of the library's networked information services.

Continued support of public library Internet services to those affected by the digital divide may depend on the degree to which public librarians and others can agree on the measures and logic/reasoning underpinning next steps in assessing public library provision of digital divide services.

Even with Modest Internet Services in Place Benefits Abound

Even with modest information infrastructure in place the benefits from public libraries' Internet services are obvious, widespread across all segments of the community, and diverse in the range of uses. The types of users varied during a typical day: seniors, home schoolers, and unemployed during the day; pre-teens and teenagers after school; and adults, especially families led by children, in the evenings. For some localities, the summers' added tourists and college students trying to keep current with their e-mail increased in-library use. All libraries reported daily observations of users for whom the library was the only source in the community for Internet access. Those libraries with computer labs added telecommuters, local small-business people, and training groups from local government, community organizations, and industry.

It is no small achievement to say that public libraries throughout the country now provide public access to the Internet at free or very limited cost. The change in Internet workstation

availability in libraries from one year to the next was often dramatic.⁹⁴ Early studies indicate that many public library Internet service users have no other source of Internet access.⁹⁵

Table 3.7 summarizes the results of that access portraying the selected areas of benefit encountered at most if not all of the public libraries visited (except where noted).⁹⁶

⁹⁴ See for example the Library Research Service (2001, February 7) study that showed that in Colorado in 1998, the state's public libraries reported an average of 2.7 computers per 5,000 served. A year later, in 1999, they reported 4.0 such computers—an increase of almost 50 percent in a single year.

⁹⁵ Library Research Service (2001, May 8) study found that 62% of Colorado library patrons surveyed in the library that responded lacked Internet access at both home and work.

⁹⁶ The study team has been involved in numerous evaluations of the benefits of Internet services that may be helpful to gain a more detailed appreciation, including: McClure et al. (1994), Ryan & McClure (1997), McClure & Bertot (1997), McClure & Bertot (1998), McClure, Bertot & Rubin (1998), Bertot, McClure & Ryan (1999).

Area of Benefit	Description
Education	
After school and homework helper	After school, libraries are overwhelmed with students needing to use the library's workstations to complete school assignments, or continue learning on their own or learning subjects that their school district can't teach. Even college students sent and received assignment information while visiting home.
Expanded collections, expand minds	The Internet, coupled with the licensed databases offered by many states and library systems, greatly expanded the access to information students and teachers can use. Already early studies suggest improvements in student achievement as a result. ⁹⁷
Summer reading & summer learning	When school recesses for the summer students flock to the library to continue their education. In many of the communities visited, there is no other place to go. The Internet is an essential added dimension to their continued learning.
Educational technology	Educational games and a wide variety of new educational technology is often available at the library and by using the Internet.
Distance education	Librarians discovered this use of the Internet as they tried to obtain MLS degrees and certificates for themselves. They quickly learned that they were not alone in their needs for education from remote institutions.
Informal learning	The library is noted as the one sure place in the community where one can continue to learn for the sheer joy of it, to satisfy one's curiosity or to satisfy a personal need. The Internet has dramatically broadened both the diversity of opportunities and the depth of learning possible.
Literacy	
Literacy for all ages	Whether you are an at-risk pre-school student preparing for kindergarten, a family wanting to read together, a citizen seeking basic information technology literacy skills, or an adult seeking to learn to read; the public library's computers and the Internet have become an essential part of the process. Local public libraries provide community members with the basic information literacy skills necessary to obtain employment, conduct business, and improve quality of life in the new digital age.

⁹⁷ See for example, Library Research Service (2001, July 1).

Table 3.7 Selected Areas of Benefit Due to Public Library Internet Services (Cont.).	
Area of Benefit	Description
Employment	
Job preparation	Many citizens use the library workstations to prepare cover letters, thank you notes, resumes, etc.
Job seeking	Citizens use, and in some cases are required to use, Internet-based job posting sites using the public libraries workstations. At least one state employment service required application via the Internet and library staff showed people how.
Re-skilling	Citizens have used the library to add basic computer and Internet skills to their resumes so as to be more marketable. Migrants and summer help were trained to use the Internet at the library in several locations in cooperative programs with local or state governments.
Telecommuting	In some cases, public libraries supply telecommuters with office space and equipment so that they can work from the library rather than commute.
Small Business Assistance	
First introductions & equipment purchase advice	Small businesses were first introduced to several new information technologies by going to their local libraries. Business people went to the library to obtain advice and consumer information on IT products and services. Several librarians remarked that businesses "come to us for advice and training to learn about the Internet and e-commerce and e-information." At the library, according to one business user, "People get to use and learn today's technology." This, of course, is not true at every library...but it could be.
RE-SKILLING OF EMPLOYEES	In some cases, businesses unable to train their own employees in the use of basic computer software rely on the library. Employees, including senior and middle-managers, came to the library to learn "what they were afraid to show they didn't know at work."
Access to government small business assistance	Small business people regularly use the Internet to learn about assistance programs, obtain advice on running a business, etc.
Investment Center	
	A surprising (at least to the library managers interviewed) use of library Internet workstations has been to obtain investment information and to make actual stock and other trades.
Tourist Services	
Travel preparation	Citizens planning a trip regularly use the Internet at the library to learn about where they will visit.
Reservation booking	Travelers will use the Internet at the library to make their reservations.
Maintaining contact with home	When traveling, citizens will use the local library in the community they are visiting to stay in touch with events and people back home.

Table 3.7 Selected Areas of Benefit Due to Public Library Internet Services (Cont.).	
Area of Benefit	Description
Community's Digital Presence	In some cases, the first digital representation that a community had was provided by the library. In other cases, the library organized various community-based sites into community pages. In still other cases, librarians advised community organizations in how to establish a web presence of their own.
Library Image	The introduction of the Internet brought in many new users, brought many old users back, and retained those already using the library. Several commented that their Internet service helped to restore the public library to the center of their communities' life again.
Consumer Services & Advisor	
E-commerce introduction	Many citizens received their initial introduction to e-commerce using the library's Internet workstations....and they continue to come back to shop.
ADVICE ON PURCHASES	The library has become a common place to go to search the Internet for comparative shopping and consumer advice.
Stay in touch	E-mail is by far the most popular use of the Internet and libraries offered citizens both young and old, rich and poor, a way to stay in touch. One librarian told of a father who could no longer travel being able to see his daughter's art work for the first time because it was being shown on a web-based virtual art gallery that the father could access at the local public library. Several reported users who found a lost loved one using the Internet at the library.
Resource Sharing	The Internet has dramatically improved a library users ability to locate an expanded range of needed information at remote sites and arrange to obtain it in a continually shortening period of time.
Local Government Partner	
Introduced the technology	In some cases, it was the library that introduced the Internet to local government, trained local government officials and agencies, designed the first government web sites and provided other advice and assistance.
Shared technology and technicians	In some cases, the library provided or shared access to Internet technologies and technical support.
Provider of Access to Government Information	Public libraries provide access and assistance to locate and use federal, state, and local government information. This is particularly important when the source of the government information does not have a local presence. State and local libraries also assist governments to establish an Internet presence, organize government information and train staff.

Area of Benefit	Description
Window on the World	The Internet allowed citizens, immigrants, migrants, and foreign visitors across the US to access the cultures and nations of the world first hand. Immigrant transition was eased with expanded language materials and the ability to keep in touch with events and people back home. The study team was surprised at how frequently rural library managers commented on the importance of this area.
Patient & Health Information	Health information providers found a new way of locally disseminating health information. Health information providers in several of the states provided donated Internet workstations so that local citizen could access web-based health information.
Center for New Technology Introduction	Citizens went to the library to learn about and try new information technologies including: computers, modems, the Internet, faxes, scanners, digital cameras, etc. Citizens also went to the library for training and consumer advice. One user commented: "People get to use and learn today's technology here [at the library]."
Local History	The Internet has allowed local history information to be more widely available and distributed than ever before and there is great interest. Digitally preserving local information became a greater priority. Public library introduction of Internet services also made it possible for participating libraries to become creators of information, particularly information about the library, its services, and its community. Libraries were creating unique local history resources.
Community Pride Source & Migration Reducer	At many of the sites visited, users of the Internet service regularly voiced how it made them proud of their local communities. For some, the comparison with other places in the world left them happy that they were where they were. For others, the Internet service brought enough of the world's riches to their doorsteps that it reduced the need to roam. For many, their view was summarized by this library users comment, "The library's Internet service makes me proud to live in such a future looking place." One rural library user commented, "We no longer have to go out into the world, we can have as much of the world as we want right here."

Impact of Public Libraries on the Digital Divide: Status Summary

Public libraries, leveraging a range of external funds, successfully introduced basic Internet services to almost all of the communities they serve in an amazingly short period of time. Already the Internet services introduction has born rich fruit. The service is heavily used by a diverse array of people for an incredible range of purposes. The promise of the Internet has been demonstrated. The questions for the future are:

- Can public libraries sustain and expand their Internet services?
- Can public libraries reach out beyond its doors to community groups most in need?
- Can various federal and state programs be re-energized to better support public library services in the networked environment?
- Can the coalition of partnerships that enabled Internet introduction be preserved and enriched as new opportunities emerge?

Discussion of these and other areas follow in the next chapter.

Central Role Played by State Libraries

State libraries played a central role in the introduction of public library Internet services to reduce the digital divide. Key facets of the state libraries' role include:

- Champion of library innovation;
- Principal library developer;
- Leverager of external funds;
- Standard setter and regulator;
- Educator and technology consultant;
- State level aggregator of problems and solutions; and
- Guarantor of equity.

Without State library involvement many libraries would not have Internet services today and no public library Internet service would be as effective.

Champion of Library Innovation

The state libraries visited have used LSTA and their own funds to stimulate a competitive innovation process among each state's libraries. There is a statewide context in which innovation is viewed as possible, desirable, and normalized. Innovative ideas are discovered and tested early as a result. An established mechanism for moving proven innovations into regular library practice exists in each state. Public library managers don't have to travel far to "kick the tires" of any new idea and talk to peers they know and trust. The introduction of a major innovation such as the Internet has a much greater chance of succeeding, succeeding earlier, and having a greater impact as a result.

Principal Library Developer

Moving good ideas into practice and sustaining them takes a great deal of hard, behind-the-scenes-labor. These activities include:

- Being there, knowing the libraries involved, their staff, their needs, the communities, what is possible;
- Monitoring of current national developments and alerting of libraries;
- Willingness to learn what it takes to be one step ahead of public librarians' demand for training and technical support;
- Establishment of a communication and training network;
- Problem solving including one-on-one hand holding when required; and
- Motivating when things look bleak.

The library development staff at the state libraries visited started in the trenches and succeeded before assuming their present positions. Their experience and enthusiasm has launched many a trial balloon into flight.

Leverager of External Funds

Introducing public library Internet services required a range of public and private, external and local funding. Each source of funding was for a different purpose and no one source could meet all needs at a local public library, let alone in a region or state. The State library in each of the states visited stepped into the role of helping to leverage the individual funding sources to achieve outcomes much greater than warranted by the amounts committed. Key facets of the state libraries' leveraging role included:

- Identifier of sources of public library Internet service funding;
- Developer of plans to coordinate the use of funds and communication of these plans to public library managers;
- Being a funder. State libraries knew the terrain and spoke the language of fellow funders. State funds could be used to supplement and fill in the gaps that emerged as a result of other funders activities;
- Assisting funders to fine tune objectives, plans and implementation;
- Sensitivity to the intent and objectives of the various funders and willingness to assist funders to achieve their goals;
- Employing effectively the State library's library development unit to supplement external funders activities; and
- Being a trusted intermediary between external funding sources and local libraries.

The state libraries "leveraging of funding" role is perhaps the most undervalued, least understood, yet most significant role played by any of the key participants in the introduction of public library Internet services.

Standard Setter and Regulator

State libraries could use their limited ability to regulate public library practice to promote practices essential to public library Internet service introduction. State libraries regularly develop standards of practice and regulations that may get incorporated into requirements to obtain state aid. For example, the Commonwealth of Pennsylvania Library required libraries applying for state grants to have applied for E-rate funding.

Educator and Technology Consultant

A key factor that contributes to the success of the local libraries in moving into the networked environment is State library education and consulting services to support local libraries. These efforts result in significant benefits for local libraries even though state libraries can only devote limited time and resources to accomplish these activities. Indeed, the study team found numerous examples where library administrators, when referring to their technology development, began their sentence with, "Were it not for the State library consultants, we could never have [numerous activities]..."

State Level Aggregator of Problems and Solutions

Some problems and solutions during Internet service deployment could best be identified and addressed at the state level. Perhaps most important was the development or licensing of databases and the full text of reference sources and magazine articles, often using LSTA funding, so that they could be made available via the Internet to citizens within the state. This meant that every library and library user, whether rich or poor, had access to the same collections (at least in these areas) as the best libraries. Rural libraries could provide access to collections in these areas that were as good as their rich urban and suburban cousins, often for the first time. State library identification of problems and brokering of state level solutions were critical to a successful adoption of Internet services.

Guarantor of Equity

The state libraries visited do not have the resources to guarantee equal access to information services at every public library in the state. That does not mean they cannot try. For years, the state libraries visited have quietly figured out ways to enable libraries that wished to adopt proven technological innovations to do so. The process might not be immediate, the funding often stretched all participants to the limit of their means, but the task was accomplished. The State library has played a significant role helping late Internet service adopters get up to speed. State libraries play a critical role in the adoption of many innovations into public library practice.

Chapter Summary

The present chapter reported on site visits to more than fifty libraries in four states: Colorado, Florida, Michigan, and Pennsylvania involving interviews with over 100 library managers including: the state librarian, senior State library staff, and public library managers. Research questions addressed here include:

- What was the nature of public library actions to reduce the digital divide over the most recent five years?
- How did public libraries make use of external national-level funds in this task?
- What role did state libraries play?
- What were specific benefits and impacts from these various funding sources?

Overall, the site visits demonstrated a range of significant impacts and benefits that resulted from LSTA, E-rate, and Gates Fund programs. Moreover, the extent to which libraries leveraged these funding sources was also significant. The next steps state libraries, public libraries, and external funders may need to consider are discussed in the following chapter.

CHAPTER 4: CONCLUSIONS, NEXT STEPS & RECOMMENDATIONS

This chapter offers a number of next steps and makes recommendations based on the range of data collection and analysis activities presented previously. These suggestions are made in the context of what is a very promising start to the introduction of a new digital age in U.S. public library services to their communities and, in particular, services to those affected by the digital divide.

LSTA State Program: A Model Federal Program for Funding Libraries

The message from the state and local library managers interviewed is simple: LSTA Grants to State Library Agencies funding, guided by IMLS and managed at the state level by state libraries, works well, with only minor changes suggested,⁹⁸ but LSTA needs to be funded adequately. Those interviewed stressed both the program's basic accomplishments and the approach used to achieve them. Their single unified complaint was that the program is significantly under funded given the opportunity and need, citizen demand, and its proven success. There was widespread support for the American Library Association's efforts to secure additional funding and their suggested changes.

E-rate Funding: Essential to Local Operations, But Needs Fine Tuning

Most library managers agreed that the E-rate initiative was targeted to assist with crucial operating expenses – Internet and telecommunications charges, wiring and basic network equipment. If the digital divide was to be reduced, the E-rate initiative was well aimed to make an important contribution. Sadly, the program's procedures turned to nightmare when it came to the overly "complicated," "cumbersome," "unending" application process that did not recognize public libraries unique mission in their community, libraries frequent lack of local grant and IT expertise, and an approach biased toward public schools. One senior State library manager summarized, "When you combine the poverty measure (school lunch program eligibility), with how it is calculated (at the school level v. district wide for libraries), and staffing differences (most schools have IT staff and administrative staff who can fill out forms), it's no surprise that schools get most of the money."⁹⁹

There was widespread agreement that public libraries had not participated fully in the E-rate program. The question then became, what is to be done?¹⁰⁰ Frequently mentioned improvements included:

- Simplify the application process;
- Adjust administrative staffing, practice and regulation that presently favors public schools: For example, allow libraries to have choices similar to schools in how to

⁹⁸ E.g., adding construction funds

⁹⁹ It is worth noting that none of the library managers begrudged the schools any E-rate funding they received. These managers used public schools only to illustrate how the E-rate program treated libraries differently and had a different impact. Library managers would regularly conclude their comparisons with statements similar to this, "Schools have been and remain our [public libraries] partner community, public, institutions with important, different, but related, missions."

¹⁰⁰ For further discussion see Table 4.4.