

BROADBAND ADOPTION IN LOW-INCOME COMMUNITIES

A Social Science Research Council report by
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March 2010

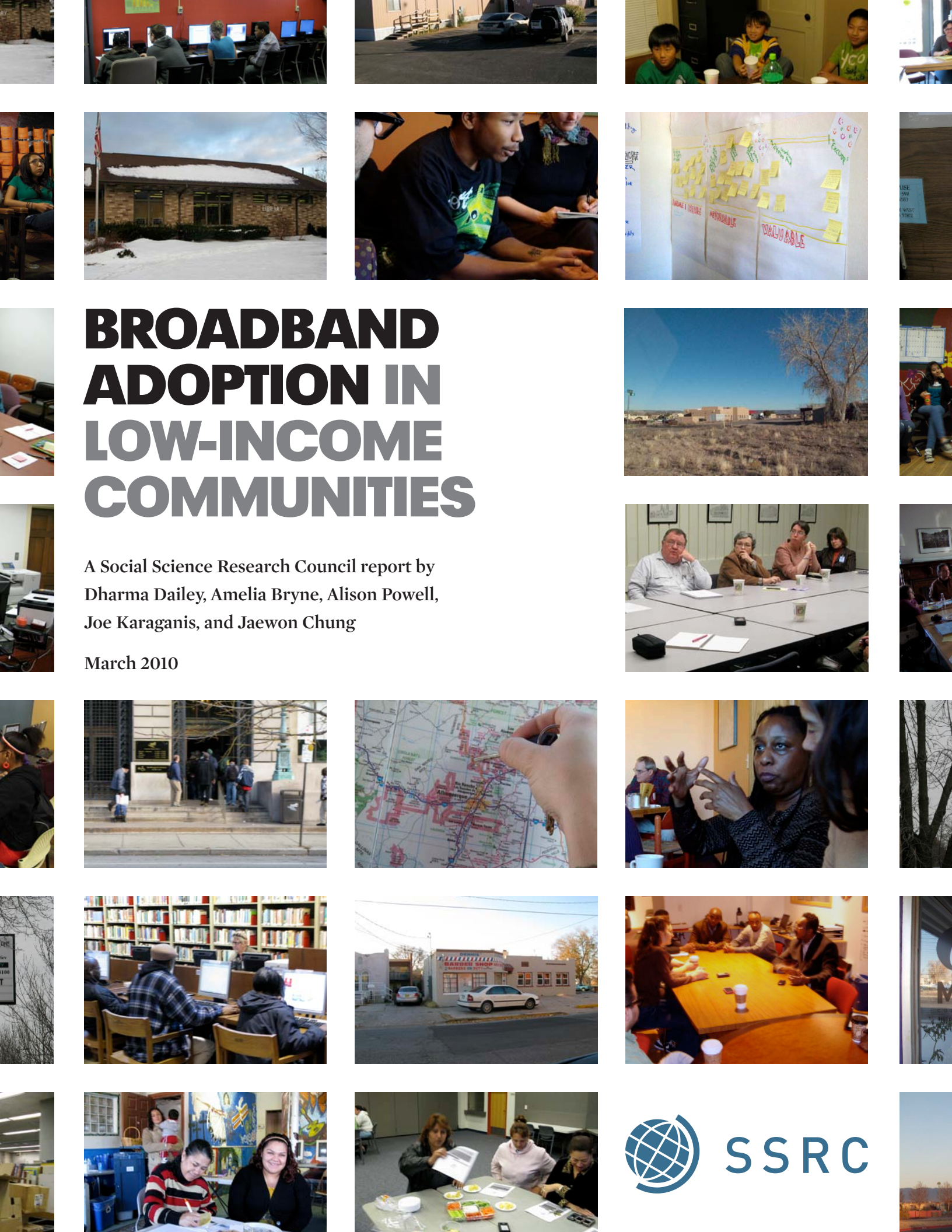


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Summary

The SSRC was commissioned by the Federal Communications Commission (FCC) to analyze the factors shaping low rates of adoption of home broadband services in low-income and other marginalized communities. The resulting study is one of the only large-scale qualitative investigations of barriers to adoption in the US, and complements recent FCC survey research on adoption designed to inform the National Broadband Plan. The study draws on some 170 interviews of non-adopters, community access providers, and other intermediaries conducted across the US in late 2009 and early 2010.

At the broadest level, it finds that:

Broadband access is increasingly a requirement of socio-economic inclusion, not an outcome of it—and residents of low-income communities know this. P. 14-24

Price is only one factor shaping the fragile equilibrium of home broadband adoption, and price pressures go beyond the obvious challenge of high monthly fees. Hardware costs, hidden fees, billing transparency, quality of service, and availability are major issues for low-income communities. P. 25-36

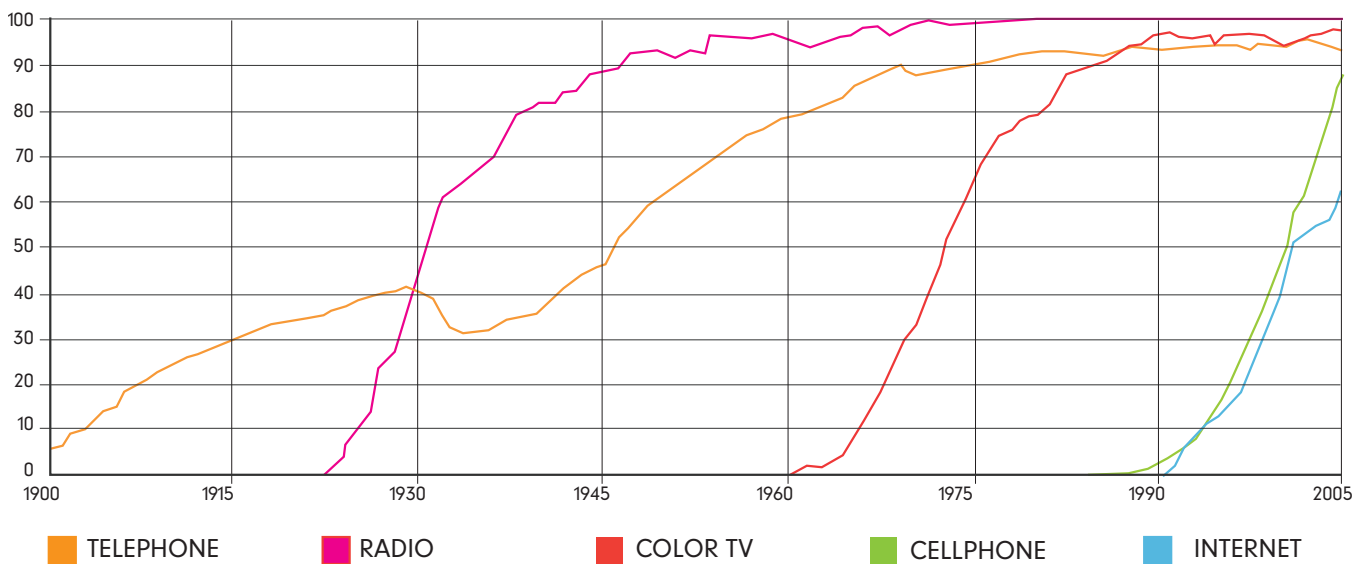
Libraries and other community organizations fill the gap between low home adoption and high community demand, and provide a number of other critical services, such as training and support. These support organizations are under severe pressure to meet community connectivity needs, leading to widespread perceptions of a crisis in the provider community. P. 37-48

Our study identifies a range of factors that make broadband services hard to acquire and harder to maintain in such communities. Some of these issues could be addressed relatively easily, such as greater transparency with respect to fees and billing, or better bundling of services to suit the communication needs of low-income groups. Even incremental improvements in home adoption would be enormously valuable. But the study also suggests that libraries and other intermediaries will remain central institutions for broadband access in many communities, and consequently for the forms of social and economic participation—from job searches to education—that increasingly take place online.

Introduction

The social function of the Internet has changed dramatically in recent years. What was, until recently, a supplement to other channels of information and communication has become increasingly a basic requirement of social and economic inclusion. The reasons are simple, though often not visible to those who take Internet access for granted. Educational systems, employers, and government agencies at all levels have shifted services online—and are pushing rapidly to do more. While this is, in most contexts, a boon for the well connected and a cost-saver for institutions, it has also raised the costs of digital exclusion for low-income and other vulnerable populations, who often lack regular Internet access, Internet proficiency, or both. It also increases the demands on those organizations, such as libraries, that provide a disproportionate share of the broadband infrastructure and support services for these communities. The economic crisis has increased the pressure on all sides of this information ecology—forcing families to drop high-cost home services, forcing cutbacks at libraries and other community providers, and pushing new groups into contact with social services, online job markets, and other Internet-mediated

% of U.S. households with this technology¹



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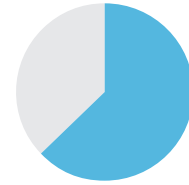
social and economic networks. For low-income people of school and working age, access to the Internet is not a choice: it is a necessity, shaped by a complex array of barriers to access.

There is no simple measure of exclusion in regard to communications services. All Americans have access to communication and information networks that help them navigate wider worlds of work, education, community, and play. Telephone service in U.S. households reached 95.7% in 2008. In 2009, 89% of Americans had cell phones; almost all homes (98.9%) had televisions, and 80% had basic cable or satellite service (FCC 2009; NTIA 2008). And as our study finds, nearly everyone is an Internet user in a minimal sense—if only via family members and friends.

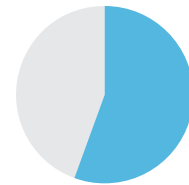
The near universality of some of these technologies suggests the limits of relying on technical benchmarks for inclusion or exclusion. Inevitably, the forms, standards, and social functions of connectivity change—and with them, the significance of particular adoption thresholds. What matters at any particular moment, rather, are the relationships between technical and social infrastructures, the practices they enable, and the needs they meet. These relationships, both real and perceived, define the experience of inclusion/exclusion and furnish its prevailing social definition. For nearly all the respondents in our study—as indeed for the FCC in its work on the National Broadband Plan—the practical benchmark for digital inclusion is a broadband connection at home. Dial-up and cell-phone-based Internet services—although used in some contexts—do not provide an adequate level of access to many of the core services respondents described as important. In this report, consequently, the terms adoption and non-adoption refer to home broadband use.

Some 65% of Americans have home broadband access (FCC 2010), putting the United States in the lower middle of developed countries in terms of rates of household adoption. But this number does not tell the whole story—or even, we would argue, the important part of the story. As with many other services, broadband access tracks closely with socio-economic inequality. Among households with incomes below \$25,000, the

HOME ADOPTION RATES FOR SPECIFIC DEMOGRAPHICS



65% of all Americans



56% of unemployed American



35% of Americans with incomes below \$25,000



30% of Americans over age 65

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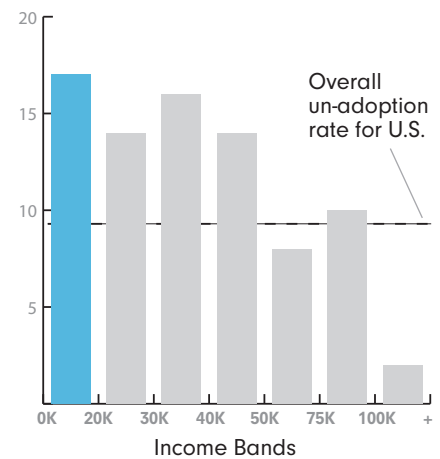
percentages are flipped: 65% lack broadband connections. For obvious reasons, employment correlates strongly with access. Some 70.7% of employed households maintain Internet service in the home. Among the unemployed, the number drops to 55.6%, and to 44.3% for those not in the labor force (NTIA 2008). Access also aligns strongly with age: 77% of adults ages 18–29 have broadband at home, while only 30% of Americans over 65 do (Pew 2009).²

The high price of broadband services is the most obvious obstacle to wider use and a critical factor in every study conducted on the subject. High-priced monthly subscriptions are very difficult for low-income households to sustain and produce large numbers of “un-adopters”—people who have been cut off from or had to cancel broadband service. A 2009 Pew survey shows strong income effects at work in un-adoption, with a 9% rate overall but 17% for those with incomes under \$20,000 (Pew 2009). Our work confirms this disproportionate impact. Among our predominantly low-income sample of non-adopters, 22% were un-adopters.

But our work also strongly suggests that price alone isn’t a sufficient factor to explain—or an adequate lever to address—the gap in home broadband adoption. Communities with a large percentage of non-adopters face multiple, overlapping challenges to broadband use, from skill and language barriers, to problems with providers, to overburdened community intermediaries and overstretched public Internet access points.

The chief dilemma in these communities is that these forms of exclusion reinforce each other. Economic marginalization coincides with non-adoption in predictable ways. But as the Internet becomes a critical tool for job-hunting, non-adoption itself becomes a driver of economic marginalization. As online services expand, lack of access raises the relative costs of a wide range of activities, from shopping, to navigating city services, to communicating with family members—creating a de facto non-adoption tax. The importance of a national strategy to expand broadband access, in our view, is to break this relationship between digital exclusion and wider social and economic disadvantage.

PERCENTAGE THAT DROPPED INTERNET SERVICE IN 2009



This study revealed four broad contexts that shape broadband adoption and non-adoption:

- The migration online of a wide range of basic life tasks—from social services, to education, to housing and job markets, to banking.
- The central role of community-based organizations in providing access, training, and support services in low-income communities, often in ways that fall outside their traditional missions and funding structures.
- The self-reinforcing characteristics of connectivity and digital exclusion. In communications-rich communities, access is increasingly dispersed through a variety of sites, devices, and personal networks—office, mobile, home, and others. In communications-poor communities, connectivity is mediated by much thinner technical and social infrastructures, which are often overstretched and fragile. Simple obstacles in highly-connected communities (a computer breakdown, a dispute with a provider) become major determinants of access in poorly connected ones.
- The economic crisis, which has put intense pressure on the broadband resources of low-income communities. Declining or disrupted personal incomes, cutbacks at libraries and other community providers, new demands on social services, and the increasing importance of online job sites and other Internet-mediated support services have created a crisis of demand in many communities and a powerful additional barrier to economic inclusion.

These larger dynamics provide the context for narrower explorations and findings in this report, from the complexity of price factors in non-adoption to the complex negotiations that shape access outside the home. Rather than describing these in detail here, we will mention three that bear directly on the challenges of expanding broadband access.

BROADBAND ADOPTION IN LOW INCOME COMMUNITIES

- Un-adoption—the loss of home broadband service—is a serious and under-recognized problem in the larger broadband dynamic. In our sample of non-adopters, 22% were un-adopters. Income fluctuations played the most significant roles in respondents' accounts of un-adoption, but unpredictable service costs, opaque billing practices, and unresolved service issues also figured frequently. Closer investigation of these practices and their effects is needed, but our work suggests that modest, consumer-friendly changes in these practices might improve the sustainability of broadband use in these communities.
- Complaints about quality of service, billing transparency, and more basic issues of availability were nearly universal in our respondent pool. Doubts about the accuracy of service provider claims of coverage were particularly troubling given the reliance of government agencies on data from those providers. We also found significant differences between theoretical coverage and practical, accessible service in many communities. Our study did not examine these issues in depth but, in our view, the frequency of such complaints clearly signals the need for further investigation. Any official strategy for measuring availability, moreover, should include provisions for research into such differences at the local level.
- Cost-shifting onto community organizations needs to be met with additional funding of those organizations. Government agencies, school systems, and large employers increasingly privilege web-based access to many basic services, including job and benefits applications. Because many of the constituents for these services have limited Internet access and/or limited Internet proficiency, these measures often shift human and technical support costs onto libraries and other community organizations that do provide access, in-person help, and training. Fuller funding of these intermediaries is the best means of assuring a meaningful broadband safety net and a stronger pathway to adoption in these communities.

The Study

Our study was commissioned by the Federal Communications Commission (FCC) to analyze the factors shaping low rates of home broadband adoption in low-income and other marginalized communities. It draws primarily on 171 conversations with community members and intermediaries involved in the provision of broadband access or other community services. The primary research was conducted in the course of four visits to Philadelphia, Albuquerque, upstate New York, and Minneapolis-St. Paul in late 2009 and early 2010.

The study was designed to complement FCC survey work on home broadband adoption underway in the same period, which involved a random phone survey of some 5000 Americans. In particular, it was designed to compensate for two limitations of survey methods in the current environment: Longstanding problems of underrepresentation and under-differentiation of marginalized communities in general phone surveys (Myers 1977; Abraham 2006). Such difficulties have a number of sources, and in the non-adopter context may include the lower prevalence of landlines, lower English and/or technical literacy in some cases, and lower incentives to participate in surveys calibrated for groups with access to a broader spectrum of communication services. These factors can amplify the usual sensitivities of survey results to language and researcher assumptions: the late 2009 FCC phone survey of broadband adoption, for example, found an adoption rate of 59% among African Americans. The mid-2009 Pew survey found a 50% adoption rate. The NTIA, reporting on data collected in late 2009, found a 45% rate (NTIA, 2010). Qualitative research within communities is a way to clarify the issues underlying such variance, including especially differences between and within communities that are difficult to identify in broader surveys. The more recent problem of the fragmentation of markets for media and communications services. Availability, price, quality,

SITE VISITS INCLUDED:



Coxsackle Public Library, NY



Hmong Youth Group, MN



Lao Assistance Center, MN



Isleta Public Library, NM

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technological infrastructures, and surrounding social practices have become more variable as communication technologies proliferate, and consequently less easily generalizable from the experience of typical users or early adopters. We have found, in particular, that services, pricing, and community resources vary widely across both major socio-economic lines, such as low and high income, rural and urban, and black and white, and narrower lines within communities, such as the experience of non-English speakers within more broadly bilingual or English-speaking ethnic groups. In our view, this diversification is a growing challenge in communications policy research, and one that will require qualitative approaches to mapping the specific experiences of communities identified as underserved. This is especially important when policy goals prioritize the expansion of services to such communities.

Our research has focused on a number of chronically underserved communities—African-Americans, Latinos, Native Americans, rural Whites, non-English speakers, New Americans, the homeless, the visually impaired, and others—in recognition of the overlapping barriers that have placed these groups at the bottom of the adoption curve for new communications technologies. Rather than seek a representative sample from these communities, we sought out community members who were outside or at the fringes of home broadband adoption, including non-adopters, ‘un-adopters’ (who had lost broadband service), and new adopters. This selection principle also extended to the age range of respondents: we prioritized the experiences of those in school or in the workforce, for whom the Internet plays the most critical role in shaping life opportunities. Our respondent pool included a wide range of working age, low-to-moderate income Americans.



Cairo Public Library, NY



Alamosa Community Center, NM



Media Mobilizing Project, PA



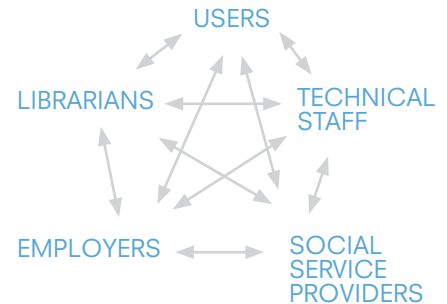
El Centro de La Raza, NM

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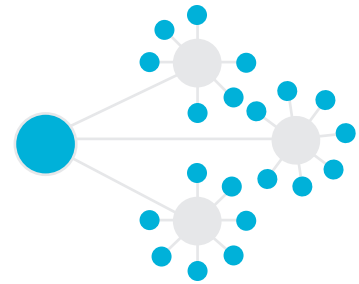
This framework dictated three broad methodological choices:

- An ecological approach to communications technologies, which situates home broadband use within the larger array of communication networks and resources in people’s lives, and in relation to the different competencies required to use them effectively. In our work, this approach also included a process of triangulation of perspectives from different sides of these communities, including those of users, librarians, employers, social service providers, and technical staff, among others. Such multilayered, multi-sided approaches have become important in the context of digital convergence, as media ecosystems become more complex and as the functions of once distinct media and communications technologies merge or overlap. They are widely used in commercial contexts, where the roll out of new products requires a comprehensive understanding of these ecosystems, but rarely at the FCC, which has relied primarily on surveys and market analyses to describe its fields of activity.
- A community-based approach that involved community groups as both respondents and partners in the research. This had two crucial advantages for our study: it allowed us to draw on and incorporate the expertise of groups with years or decades of experience working with particular communities; and it vastly simplified the process of engaging those communities, making a relatively large study possible in a very short time frame.
- A research protocol designed to explore the relationships between four key variables in adoption—accessibility, affordability, usability and value—and potentially sensitive issues around income, race/ethnicity, disability, and other factors shaping patterns of broadband use. Conversations with respondents followed a variety of formats, including one-on-one interviews, focus groups, and less structured group conversations when those proved more appropriate. Within this framework, respondents had considerable freedom to develop their own descriptions of needs, practices, and barriers, and—in many cases—to help other participants articulate their stories and

THREE METHODS EMPLOYED IN THIS STUDY



an ecological approach that triangulates multiple perspectives



a community-based approach that taps into existing institutions and networks



a research protocol that employs direct conversation around four key variables

perspectives. This inductive method of questioning provided respondents more agency in shaping the categories and direction of inquiry.

Throughout, two sets of partners facilitated our work at the local level: the American Library Association and the numerous local library staff they mobilized on our behalf; and a loose network of other community organizations involved in the provision of both broadband access and other services, developed through the earlier work of the researchers and the SSRC. These provided invaluable assistance and contributions to the larger picture of broadband access and community needs presented here.

NON-ADOPTERS AND INTERMEDIARIES

This report draws on 13 focus groups, 33 interviews, and 14 group conversations conducted between November 2009 and January 2010. Of the resulting pool of 171 respondents, 92 were non-adopters, and of these, 22 were un-adopters— who had previously had broadband at home but lost it. We spoke to 74 community intermediaries, including 23 librarians and numerous others who support digital literacy and broadband use in their communities. Although the majority of community intermediaries had broadband at home, 4 were un-adopters and 6 were non-adopters. We also spoke with community organizers, health workers, literacy teachers, other service providers who play support roles in their communities, and approximately a dozen employers and managers involved in hiring at major chain stores and restaurants. Approximately half of our interviews and focus groups took place in locations that offer public broadband access. Among these, roughly half took place at libraries, and half at other community based organizations.

Minority and immigrant communities are heavily represented in our sample. Approximately 27% of the non-adopters self-identified as Latino (including 17 Spanish-only

WE MET WITH:

74 Intermediaries



97 Constituents



171 INDIVIDUALS TOTAL

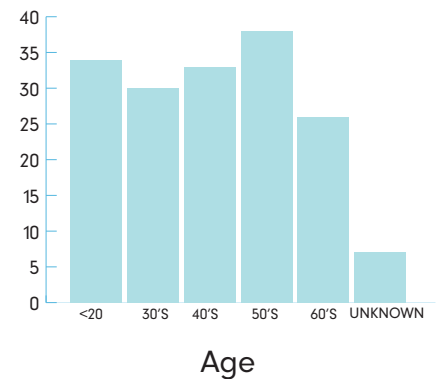
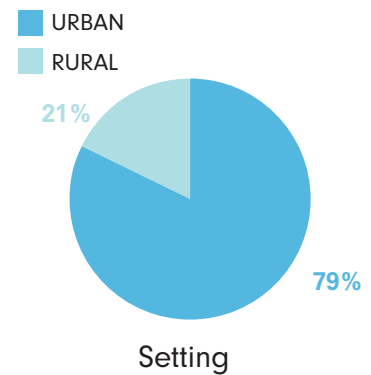
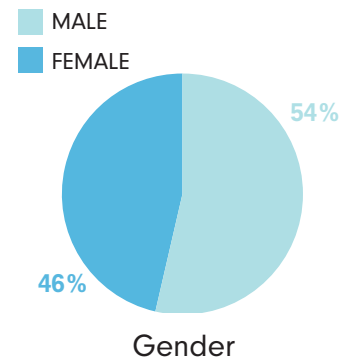
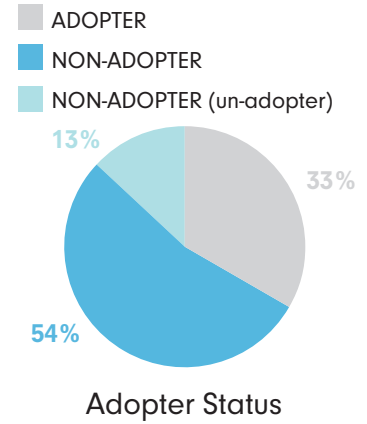
- 37 African-Americans
- 6 Somalians
- 47 Latinos
- 12 Native Americans
- 1 SE Asian
- 2 Lao
- 8 Hmong
- 52 Whites
- 6 Others

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speakers), 22% as African American, 7% as Native American, and 30% as White. Hmong—a population of relatively recent immigrants from Laos and Cambodia—accounted for 5%. We also conducted meetings and interviews with Somali and Lao community representatives in Minneapolis. We held two focus groups with people who have long-term disabilities, one of which was conducted at a homeless shelter. Respondents ranged from under 7 years of age to over 70, but the great majority were of school and working age, between 14 and 60.

In the interest of exploring possible regional differences, our work included site visits in the Mid-Atlantic (Philadelphia), the Midwest (Minneapolis and St. Paul, Minnesota), the Southwest (Albuquerque, New Mexico, and the Native American Pueblos of Isleta and Zia), and the Northeast (rural Greene County, New York). Phone and e-mail interviews yielded additional stories from other parts of the country.³

RESPONDENT DEMOGRAPHICS



FINDING #1

**Broadband Access is a
Prerequisite of Social
and Economic Inclusion
(and Low-Income
Communities Know It)**

The Case for Broadband Adoption is Already Made

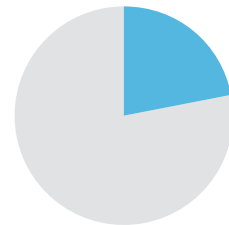
When we began our conversations with non-adopters, we expected to hear with some frequency from people who were not interested in the Internet. Survey research on Americans' Internet use has repeatedly indicated that a significant number of non-adopters view the Internet as "not relevant" to their lives. The 2009 Pew Internet and American Life Project study puts this number at 22% of non-users (roughly 7% of the total population). The NTIA (2010) suggests that "non-use" of the Internet (in any location) stands at 31%. Such findings point toward a core population of hard-to-reach digitally excluded, who first need to be convinced about the importance of Internet use before other obstacles to adoption can be addressed.

But we found no such group, even among respondents with profound histories of marginalization—the homeless, people with long-term disabilities, people recently released from lengthy prison sentences, non-English speakers from new immigrant communities, and residents of a rural community without electricity or running water. No one needed to be convinced of the importance of Internet use or of the value of broadband adoption in the home.

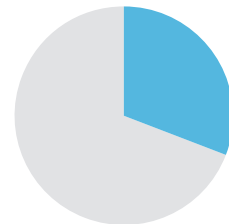
Indeed, most respondents viewed broadband connectivity to be of paramount importance. Over 90% of our non-adopter respondents reported personally using the Internet. Taking into account proxy use via family members and friends, the number approaches 100%. Even respondents with the highest barriers to use, such as those with very limited literacy in any language, reported making efforts to use the Internet. Social networking, games, and media sites—especially YouTube – seem to be common gateways for these low-skill users. But the strongest drivers by far among our respondents are access to employment, education, and government services.

"The way things are today, the Internet... I think it's necessary now. It has become something basic."

– **Consuela**, a 35-year old mother and mono-lingual Spanish speaker



The 2009 Pew Internet and American Life Project found that **22%** of non-users viewed the internet as "not relevant" to their lives



A 2010 NTIA study found that **31%** of Americans do not use the Internet



But almost **all** of our respondents use the internet in some way, and **none** needed to be convinced of the value of being online

The Necessary Internet

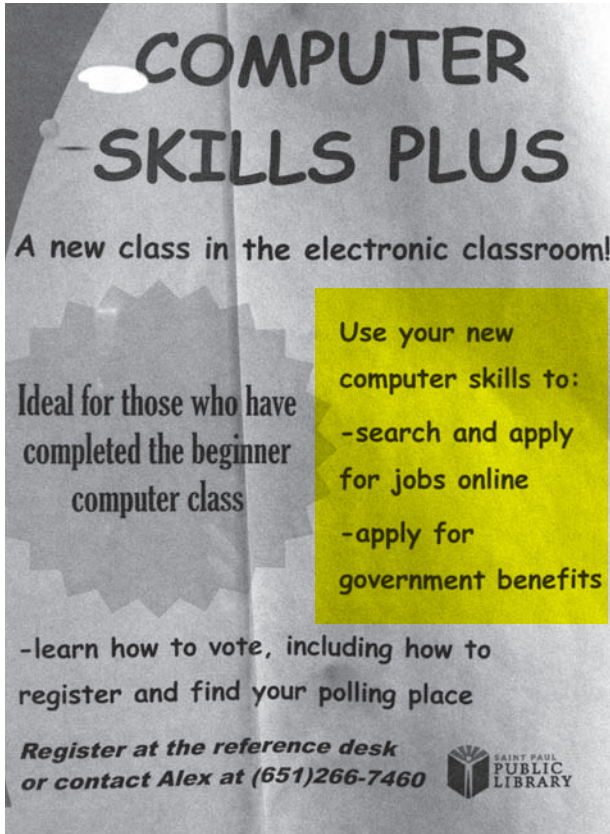
In most cases, non-adopters talk about the Internet as a concrete, immediate need. Non-adopters increasingly must use the Internet in their interactions with employers, schools, and government, as services move online. When people lack adequate access or the necessary skills to navigate critical services, their experience is not typically one of empowerment but of fear and frustration. For this reason, we talk about “drivers” of adoption—positive and negative—rather than the “value” of the Internet to these communities.

Job searches, education, and interactions with e-government services consistently stood out as the most urgent of these needs, and one or more of these figured in every conversation with non-adopters.

“Suddenly they’re out of a job and they never needed to use a computer previously and they’re in panic mode, because they now find that every job application they submit has to be done electronically, and they don’t feel at all comfortable with that.”

- Phil, Library Branch Manager of the South Valley Library in New Mexico

CONTINUE ON PAGE 68



A FLYER FOR A COMPUTER CLASS

at the Rondo Community Outreach Library in St. Paul, MN advertises the course as a way to help students

- Search and apply for jobs
- apply for government benefits
- and learn to vote

Work

With remarkable consistency, respondents described the importance of the Internet to job searches and other employment-related activities, even at the low end of the skill and wage ladder. Finding and applying for jobs, maintaining contact with employers, training to find better jobs, and other basic aspects of employment are increasingly Internet based—leaving those without access or only intermittent access at a serious disadvantage. Intermediaries expressed concern, in particular, about low-skill, low-wage jobseekers recently pushed out of the workforce, who have to quickly develop computer and Internet skills that most people cultivate over a period of years. Increasingly, such proficiency is necessary to obtain other low-skill, low-wage jobs that do not, themselves, require such qualifications.

Respondents generally demonstrated sharp awareness of the extent to which large employers, such as Family Dollar, Home Depot, McDonald's, Target, Walgreens, Walmart, and Wendy's, have moved toward online applications for a wide range of job types, from cashier to management positions. The job search advantages of being online are considerable and extend well beyond the application process itself. Chain employers maintain online career portals as extensions of their corporate websites. In most cases, individuals are encouraged to create online accounts that enable them to signal their areas of interest, save job searches, submit application materials, and sign up for e-mail alerts and/or news feeds on relevant job openings and recruiting events. Additionally, these portals frequently feature orientation for job seekers, including sections on employee benefits, store locations, the application process, resume and interview tips, and human resources contact information. The "media room" on the McDonald's portal includes videos and podcasts on career paths and "featured success stories." Most of the online application procedures require a phone number but not an e-mail address. But the added value of having an e-mail

"There's also a huge disconnect with minimum-wage jobs, like for Walmart jobs, where you are required to apply online. Those people are looking for a minimum-wage job. They don't have a computer at home."

– **Natasha**, Assistant Director
Albuquerque Bernalillo County
Public Library System

➤ CONTINUE ON PAGE 68

address and regular access is compelling and a clear advantage in employment searches.

Most of the time, the corporate policy of large-scale chain employers is to direct potential applicants first to online information and resources—often emphasizing the fairness and efficiency of online application. The FAQ (Frequently Asked Questions page) on the Family Dollar site, for instance, highlights the following response to a common inquiry:

Q: When I apply online to a company, I always wonder if a real person ever sees my information. Wouldn't it be better for me to e-mail or fax my resume to Human Resources so that I can be sure they have it?

A: Actually, the best way to ensure that the Recruiters at Family Dollar see your information is to apply online. When you apply online for a specific position, your completed online application is received in real time immediately by the Recruiter who posted the position. Faxed and mailed paper resumes may experience delivery difficulties and therefore, are not the most efficient way to submit your qualifications for review.⁴

Conversations with employees and managers at local chain store branches suggest that this preference for electronic application is increasingly the norm, with comments ranging from “it’s all electronic based” to “everything is online” and “standardized.” This was especially true at stores such as Family Dollar, Home Depot, Target, Walgreens, and Walmart, that only accept online applications but also provide computer kiosks for prospective employees at most, if not all, of their stores. Fast-food chains, such as McDonald’s and Wendy’s, in contrast, have a high percentage of individually owned stores with hiring processes and decisions determined by the owner. These show considerably more variation. Although McDonald’s has encouraged standardization around online applications, the corporate website indicates that “not all McDonald’s restaurants are participating in the on-line job application process. If you can’t find your local McDonald’s listed within your State, we



A Walmart hiring kiosk in Pennsylvania penned in by shopping carts

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encourage you to apply in person at the restaurant.”⁵ This variation was borne out in interviews: even two stores in the same neighborhood had different application procedures—one of them online only.

The problems facing those without regular Internet access, in such contexts, are obvious and can be exacerbated by low Internet proficiency and limited English literacy. Large employers with online hiring portals typically recommend reserving at least 30 minutes to 1 hour to complete electronic job applications—a length of time that bumps up against typical time limits for Internet access in many public libraries and community centers.⁶ As one Family Dollar employee noted, the application will take about 30 to 40 minutes, “depending on how fast they read.” For new users with very limited skill sets, an hour may be spent trying to sign on to an email account. Though the availability of in-store computer kiosks and online procedures has some notable advantages in allowing job seekers to signal their interest in (and immediately submit their application to) several store locations at once, the level of assistance available to those applying at kiosks is generally left to the discretion of the store managers and employees.



Job-seeking adults get one-on-one help at Waite House in Minneapolis

Education

Predictably, parents emphasized the value of broadband at home for children, especially for older children in middle school or beyond. Perceptions of the Internet as a universal library were commonplace in these contexts. Several respondents reported encountering teachers who presumed regular Internet access at home and school systems that have begun to structure educational services accordingly.

For many parents who lack home connections, sending or bringing their children to libraries and other third spaces for homework-related activities is part of their weekly or even daily routine. The libraries we visited were consistently packed during after-school hours with children and teenagers using the computers and printers, getting homework help, and hanging out with friends.

For other families among our respondents, trips to the library to use computers are more difficult. A frequent complaint of working adults was that library hours were inconvenient for their work schedules. A library that is open one or two nights a week may be adequate for picking up lending materials, but not for adults taking online classes or looking for work. In Albuquerque, where many libraries close at 6 pm on most days, several reported that libraries closed before they returned home from work. In other cases, members of large families with home connections reported that a single home computer wasn't enough to handle the competing educational demands of the children, resulting in reliance on a mix of home access and third-space Internet use.

Repeatedly, parents of middle-school-aged and older children reported that understanding what their children are doing online is a primary motivator for their own use. La Comunidad Habla, a group of volunteer community trainers in Albuquerque, described this as a common motivation behind attendance of their Internet classes. For the same reason, Isleta Pueblo Library in New Mexico offers parents classes on how to use social networking sites.



University of New Mexico Campus

STUDENT ACCESS

In New Mexico, where many college students are low-wage working adults, students have lower rates of home broadband access and computer ownership than the national average. In Albuquerque, we interviewed non-adopters from 3 public colleges and universities. In some cases, they reported waiting "all day" to get access in the crowded school labs. One college student chose his classes based on which ones would require the least amount of online time. Another rides his bicycle 17 miles, twice a week, to the nearest public library because it isn't feasible to get adequate computer time at school.

In a focus group in Albuquerque with minority high school students, several students reported difficulty getting enough computer time at school to complete their assignments. One indicated that an Advanced Placement teacher announced on the first day of class, "If you don't have your own computer and home Internet access, don't take this class."

Schools and school systems are powerful drivers of this process. Many have moved routine communications with parents online, including student records and correspondence with teachers. In Minneapolis-St. Paul, both cities have created district-wide parent portals for these interactions, making connectivity an increasingly important part of the parent's participation in their child's education. Some of these efforts are long-standing. The St. Paul School District launched its Campus Portal, which allows parents to view their child's schedule, class assignments, attendance, grades, and disciplinary actions, in 2003. All parents of current students are eligible to activate a Portal account but must have access to a computer with Internet Explorer 5.0 or higher, with a recommended modem speed of at least 56k. Five years after the Portal's launch, the Twin Cities Daily Planet reported that of the more than 40,000 students attending St. Paul public schools, only 8,000 families had registered to use the system. The article highlighted factors that hinder Portal use, including the over 100 languages spoken by families in the district and the nearly 70% of children receiving free or reduced-cost lunches—strong indicators of poverty (Wasley 2008). The Portal is currently available in 4 languages and presents itself as “a free service to parents [that] actually saves the district money by reducing paperwork and labor costs.”⁷ The school system has made a variety of attempts to engage parents and assist them in using the system, including providing training for community service agencies and other intermediaries in St. Paul that serve families in need.

Minneapolis rolled out its own Parent Portal in late 2008. A recent school board update announced that “participation in the parent portal is again mandatory this year for all schools, and teachers are required to use the grade book which uploads to the parent portal.”⁸ The New York City school system—the largest in the United States, with 1.1 million students—launched its own version, called ARIS, in May 2009 to provide “a single place where our educators can go to find and study important information about your child.” Available in 9 languages, ARIS requires parents to register online via a valid e-mail address after obtaining a temporary password from their child's school. ARIS

BROADBAND ADOPTION IN LOW INCOME COMMUNITIES

has a general contact helpline but routes many basic questions—such as “How can I get access to a computer and an e-mail address?”—to the parent coordinator at the child’s school.

Parents, children, and intermediaries all emphasized the sometimes rewarding, sometimes challenging experiences they have when parents rely on children to help them use the Internet. Many parents expressed concern about what their children are doing online. Parents who don’t read or write English are particularly challenged to keep tabs on children’s online activities. Further, many parents with limited English proficiency rely on their children to choose communication plans and equipment, to deal with communication providers, and to accomplish many online tasks, from banking to job applications, that require English proficiency as well as computer literacy.

Among our respondents, students from grade school to college level universally reported that Internet access is critical to their studies. In general, as grade level increases, students need access more often and for longer periods of time. In some cases, students reported needing access everyday or almost everyday in order to complete school assignments. Among college students, access is often a daily requirement: homework, class work, quizzes, and communication with teachers are increasingly organized through Web portals and supplement classroom instruction. For adults, online classes are an important driver of Internet use and—among our sample—regular Internet access emerged as a strong condition of success in such classes. Several respondents reported starting online classes but failing due to lack of regular access or insufficient computer literacy. Students of all ages in our sample reported relying on computers at public libraries to complete their schoolwork.

“There’s something that disturbs me. A lot of the moms I talk to, their kids show them how to do things online. That means that their kids are controlling what they access. It’s great to have intergenerational teaching, but when the kids want to use the computer, they want to use it for things other than helping other family members out. They know how to play a game, but they don’t necessarily know how to look for a job. It’s a pretty heavy responsibility to have a kid have to translate so much, in terms of computer literacy. The language of getting jobs, the language of getting health information, this is the language of adults, not of kids.”

– **Sarah**, a community organizer who works with Spanish speakers in Minneapolis

E-government

Interactions with government agencies—applying for unemployment benefits, citizenship or changes in residency status, housing benefits, or childcare stipends—were once handled predominantly through visits to the relevant agency, with paper applications and, when needed, in-person or phone-based assistance from agency staff. A growing number of agencies, however, have made downloadable forms and online application the preferred way of accessing information and services. Often this is accompanied by diminished support for applications on paper, by phone, or in person—a situation our respondents often encountered in the form of difficulties reaching or communicating with agency staff. Several respondents reported visiting or calling agencies only to be redirected to a website.

The shift to online services represents a huge challenge for many social service recipients, and it disproportionately affects people at the low end of the socio-economic ladder. Those who require social service support the most are consistently the least likely to be able to afford either a working computer or home access and the most likely to need help accomplishing tasks online. The American Library Association (ALA) reports that in 5 states unemployment benefits are available only through the submission of online forms (Davis et al. 2009). Other actions, such as booking appointments with the U.S. Citizenship and Immigration Services, also require online communications.

Social service agencies appear to have a mixed record of understanding this shift in the practical meaning of exclusion and disadvantage. Community intermediaries in Minnesota spoke to us about a “social service mindset” that resists understanding communications services as essential in low-income communities. They reported, for example, that agencies that provide food and healthcare support to new mothers through the WIC (Women, Infants, and Children) program have guidelines about what constitutes a “major” bill when they review an applicant’s finances. Major bills include heat, water, gas, and

THE DECLINE OF HELP

Rosa, a middle-aged woman in New Mexico, recalls her visit to the immigration office several years ago when she submitted her application for permanent residency. She filled out the application in the office, and staff assisted her in reviewing it. Now a permanent resident, Rosa has applied to become a U.S. citizen. This time when she visited the immigration office, she received a piece of paper with a website address. It was her responsibility to find a computer, locate the proper form, and fill it out and print it. There was no one on hand to review the form, leaving Rosa concerned about possible mistakes and resulting delays with her application.

Roxanne is a single working mother with small children and limited Internet proficiency. She had repeated difficulties providing information to her rent-subsidy caseworker via phone or fax and eventually attempted to use e-mail. When she did, she misspelled the e-mail address, and her caseworker didn’t receive the information she’d requested. Although the mix-up was eventually addressed, Roxanne found the experience frightening since it could have resulted in her loss of the rent subsidy.

BROADBAND ADOPTION IN LOW INCOME COMMUNITIES

electric—but not Internet access. The Internet is considered a “luxury.” Community intermediaries expressed concern that such agency prioritizations create disincentives for broadband adoption. A deeper inquiry into this issue falls outside the scope of our current work, but in our view it would be worthwhile to explore how changes in the categorization of communications services in social service contexts might be used to encourage (or, at a minimum, be neutral with respect to) communication access.

“The community [in Florida] I was working in was predominantly low-income, with many below the poverty level . . . It was predominantly Haitian refugees and Mexican Americans and recently arrived immigrants. I actually adapted much of my [computer class] curriculum with the parents to real-world issues, and that included going through websites that they needed to navigate to fill out and stay updated with their status and for public assistance. I think that’s why they would come to my classes regularly. They came because it was important for their public assistance, especially when the economy’s toll on jobs hit that area hard.”

– **Candelario**, speaking about his job as a computer instructor at a community organization

↖ CONTINUE ON PAGE 77

FINDING #2:

**Price is Only One
Factor in the Fragile
Equilibrium of Home
Broadband Adoption**

Availability

The lack of reliable data on broadband availability in the United States has been an ongoing problem for both policymakers and community advocates. Most recent research cites high levels of geographical coverage by broadband providers, with service in 95% of ZIP codes according to Kolko (2007) with remaining gaps concentrated in rural areas (Strover 2009).

Our work adds weight to the argument that more detailed, systematic research needs to be conducted around these questions—especially in communities with high rates of non-adoption. We found considerable anecdotal evidence that acquiring standard cable or DSL service is more difficult for low-income residents in urban areas than the more optimistic of these reports suggest. Visits to Philadelphia, the Twin Cities, and Albuquerque all produced reports of problems with basic availability, as well as other issues that complicate access even when broadband service is, in principle, available.

Among these concerns are discrepancies between providers' claims of coverage and the locations where reliable service is actually available. For example, a focus group of community intermediaries in Philadelphia, drawn from groups working on digital inclusion in the city, told us that Comcast claims to offer complete coverage of the Philadelphia area but refuses to provide services to residents of Philadelphia Housing Authority developments—a population of 81,000. Although Verizon does provide DSL coverage to Housing Authority residents, such service requires Verizon phone service, which many residents choose to do without. We received similar reports about other locales from sources who preferred to stay off the record, including a claim by a broadband planning expert that large numbers of residential and business customers in Albuquerque could receive only dial-up service from their incumbent provider, Qwest Communications.

RESPONDENTS OFTEN TREATED PROVIDER COVERAGE MAPS WITH SKEPTICISM

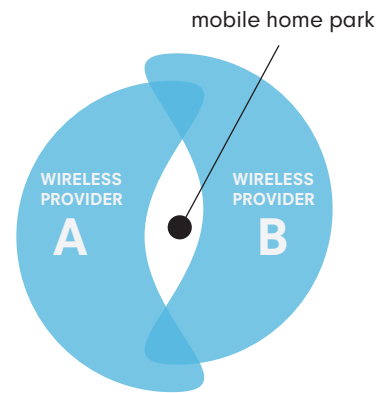
Silvia and Irma, residents from Pajarito Mesa, a rural and predominantly Latino community just outside Albuquerque, discussed the difference between the coverage on provider maps and what they actually experience:

Silvia: They [the providers] show us this map, where it says, well, we have service for all this area.

Irma: You can have the company, but it doesn't work. Verizon wireless, they don't work.

Other obstacles mentioned by respondents in the urban areas we visited included high installation fees to initiate service in cases where a building or neighborhood had never been connected before. Such access is available in theory but impractical in reality. In another instance, a member of 9to5 Milwaukee, a self help and advocacy group for low-wage working women, reported being informed by providers that broadband was unavailable at her residence despite the proximity of a bank, a library, and shops that had service. After being told several times by a local broadband provider to call back and inquire again, she signed up for dial-up service rather than go without Internet connectivity. Reports of this kind were common enough to suggest the need for greater scrutiny of provider claims about access for low-income urban populations.⁹

Availability in rural areas remains a sharper and arguably better-understood issue. In meetings with rural New Mexicans, a number of respondents reported living in areas served only by satellite or cellular modem. Adopters among them reported mixed results with these services, with reception sometimes unable to penetrate the walls of the adobe homes common to the area. Librarians in Greene County, New York—a rural area in the Catskill Mountains between Albany and New York City—indicated that broadband is simply unavailable to many of their patrons.

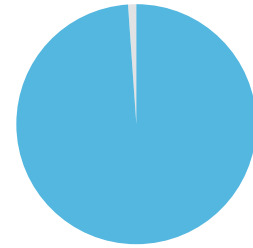


An intermediary from Moorehead, MN reported that a mobile home park was not covered by a local wireless provider, despite the fact that areas on either side were.

Cost

Previous research on broadband access in the United States indicates that cost is a major factor in non-adoption (Hauge and Prieger 2009; Horrigan 2009; Prieger and Hu 2008). Our study broadly confirms this: 99% of our non-adopter respondents described cost as a barrier. Recent FCC research (Horrigan 2010) finds that the average monthly cost of broadband is \$40.68, representing an annual investment of nearly \$500 before set-up costs, equipment, or maintenance fees.

Respondents were acutely aware that monthly fees are only part of the overall cost of connectivity. Hardware and software costs, installation costs and deposits, equipment maintenance fees, transaction costs for disconnecting, and changes to subscription pricing all introduce additional—and often unpredictable—layers of cost. Among the un-adopters in our respondent pool, unanticipated costs in these categories were often cited as reasons for dropping broadband at home. Part of the challenge of understanding adoption and non-adoption in relation to affordability is that decisions about broadband service are never made in isolation. Our work suggests that broadband adoption is frequently one of the key decisions made at the margin of household budgets—among the first to be accommodated once other core expenses have been covered. Rent and utilities are the obvious examples of such core expenses, but our respondents also showed remarkable consistency in placing cell phone service among those necessities. When we asked respondents in focus groups how they would prioritize their communications bills (cell phone, landline phone, cable TV, Internet), 99% chose the cell phone bill. This is consistent with the findings of recent surveys such as Pew (2008). Nearly everyone in our sample reported owning a cellphone, confirming surveys that show high cell-phone adoption in low-income communities (Harris 2008) (The Hmong youth interviewed provided the only striking exception



99% of non-adopters mentioned cost as a barrier

DIAL-UP IS A “LAUGHING MATTER”

Across the board dial-up was not considered a viable option for getting online. In Philadelphia, **Louis**, an African American in his 40s recently out of prison, declared: “I’m figuring out what kind of service to get. I’m on a budget. I was thinking about getting dial-up, and I was telling a friend of mine and he was like, ‘Oh, you’re going to be like Fred Flintstone on a computer with dial-up.’ [Laughs.] I’m like, ‘but yeah, but you know it saves money.’”

BROADBAND ADOPTION IN LOW INCOME COMMUNITIES

to this pattern in our work). But many respondents also reported recurring rounds of connection and disconnection of service as home finances fluctuated.

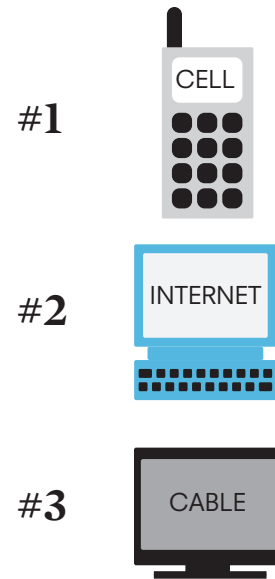
With almost equal unanimity, respondents chose broadband as their second priority—95% of our respondents. In contrast, only a few described a home (landline) phone as a priority. Very few people in our sample had cable TV at home, and only a handful ranked cable TV as their second priority.¹⁰ Most people defined broadband as a necessity “like electricity,” while cable TV was considered a “luxury.” Disinterest in TV was also more pronounced among younger respondents. As one high school student at a focus group for young women of color in Albuquerque put it, “I wouldn’t pay for TV even if I could afford it.”

While cheaper than broadband in most contexts, dial-up was almost always rejected as an option by our respondents. Among new users unsure about the practical difference between dial-up and broadband, the context of this rejection often involved wider networks of friends or colleagues, who create expectations of what Internet service is supposed to provide. Katy, a 33-year-old single mother, heard from co-workers in the Albuquerque school system that dial-up was available to her for free. She was intrigued, but co-workers told her it wasn’t worth having, even at zero cost.

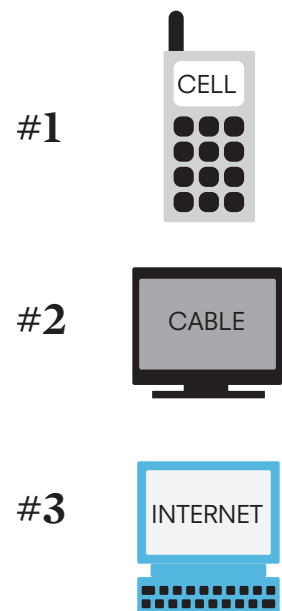
When we asked community intermediaries to rank the importance of the same technologies from the point of view of their constituents, we saw some interesting, consistent divergence: intermediaries overrated cable TV, placing cell phone service first, cable TV second, Internet connectivity third, and landline phone service last. The divergence suggests that media habits and preferences in these communities are changing faster than even the community intermediaries who champion broadband adoption fully appreciate.

Interviews and meetings also revealed a number of other indicators regarding price and service sensitivities in these communities, as described below.

Most constituents ranked their communication technology priorities as:



Most intermediaries believed that their constituents’ communication technology priorities were:



INTRODUCTORY RATES SET PRICE EXPECTATIONS

Our study did not try to identify an objective threshold of affordability in these communities. What is affordable for a person with a long-term disability living in a homeless shelter is likely very different from what is affordable for a moderate-income family. However, we did ask respondents what they thought was affordable. Respondents offered no clear consensus, but responses ranged from free to up to \$30/month. Because these answers appeared to correlate with the local introductory rates offered in different communities, in our view, these introductory rates, rather than any strong sense of what broadband is “worth,” anchor expectations of price.

PREDICTABLE AND TRANSPARENT BILLING IS HIGHLY VALUED

Lack of consistency and transparency in billing was a significant concern among non-adopters, and especially un-adopters in our sample. No one seemed sure that they were getting what they are paying for (for example, if they were getting the speed that they should) or that charges were accurate. Respondents told numerous stories of unexpected charges and unintelligible bills from cell phone and Internet providers. The question that consistently evoked the most immediate response from our focus groups was: “Has anyone had a problem with a communications provider?” Everyone wanted an opportunity to air their issues, to the extent that the tacit rules of conversational order and deference characteristic of some of the groups quickly broke down. From a typical exchange with monolingual Spanish speakers at a community center in Albuquerque:

Hilda: Since we don’t understand it, we just pay what they say.

Interviewer: The bills are hard to understand?

Candelario: Yes!

Hilda: Well to me they are because I don’t speak English.

Carlos: But also I have a master’s degree and I can’t read those stupid bills. [Laughter.] I mean, I can’t read them. It’s crazy.



Our translator, **Candelario**, at a focus group in Albuquerque

Respondents born and raised in the United States reported similar difficulties. Daniel, an African American un-adopter in St. Paul, noted:

“You have a bill, they tell you it’s gonna be this much, but at the end of the month, it’s this much. And you know, that’s why people with the Internet get cut off sometimes. Maybe they don’t understand ... I don’t know, I don’t understand it either.”

Among the most common complaints were introductory rates that reset to a higher rate after a few months. The community volunteers at La Comunidad Habla in Albuquerque offered a typical complaint about a \$25/month introductory wireless offer—the only available service in their area—that rose to \$93/month. Several respondents reported dropping service after such surprises.

Lack of clarity around installation fees was also a widespread issue. In Philadelphia, Chris reported ordering a “triple-play” service (bundled phone, cable, and Internet) and receiving an \$800 bill for installation costs plus the first month of service, which he did not pay. Other unexpected fees that figured prominently in respondent complaints included equipment rentals, taxes, and surcharges. Low-income customers were also sometimes asked to pay a deposit, raising the upfront costs of connection.

These confusing and unpredictable practices inform the general distrust with which most service providers are viewed. All the major commercial service providers in the areas we visited were the subjects of unprompted, sustained complaints from respondents. In contrast, and despite significant quality-of-service issues, the non-profit network Wireless Philadelphia was viewed much more favorably by Philadelphia respondents. Wireless Philadelphia’s low price—\$9.95/month—was an important factor, but respondents also praised it for offering fixed and transparent pricing, which was unlikely in their view to rise or contain hidden fees.

“They got a package deal, but see, sometimes people who are not really savvy in the business world, we have to learn to read the fine print that’s under the big, bold letters. Okay, you want to charge me a \$250 early termination fee? And I only had the service, never ordered no movies, never did none of that. But my bill was \$800? It’s sickening.”

— **Kevin**, a new internet user in Philadelphia

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BUNDLED SERVICES ARE PROBLEMATIC

Discussions of affordability also led respondents to describe perceived disadvantages and problems with bundled services, such as triple-play packages. While some non-adopters found bundled packages attractive, many respondents raised concerns. Several reported that service was available only in the context of a bundle, tying apparent discounts for broadband to much higher overall monthly bills. The consistently low valuation of cable and phone service in respondent's preference rankings made triple-play or DSL-phone bundles especially problematic in this context, though cell phone–data bundles also proved controversial.

Our study did not go far enough in unpacking the practices and perceptions of bundling to offer clear conclusions, but such concerns were voiced often enough to suggest that (1) bundling may be a poor fit with low-income community needs and (2) bundled prices for Internet service should not be treated as the actual price in these communities, as stand-alone Internet service is often more expensive.

UNPREDICTABLE HARDWARE AND OTHER ASSOCIATED COSTS ARE TRIGGERS FOR UN-ADOPTION

Despite rapidly declining prices in the past few years, equipment costs remain a significant challenge to adoption and introduce another point of failure in the fragile economics of broadband access. For some of our respondents, computer breakdowns, in particular, made home broadband use unsustainable. Somewhat to our surprise, viruses also figured frequently as sources of disruption in home service, and antivirus software was often cited as an unanticipated added cost for home users.

“The monthly charge they said is \$30, but because it’s a package with the cell phone, I pay \$150 a month. I want the Internet without the phone, but I can’t have that.”

– **Azucena**, a Spanish-speaking community health worker in Albuquerque

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Proficiency

To be proficient as an Internet user is not just to master a particular set of skills, but—given the pace of change of software and online tools—to master a process of continually learning new skills. For expert users it is often difficult to recollect or imagine the measures of excitement and frustration experienced by the non-proficient user. Our respondents came from across this spectrum. Many were highly proficient Internet users; some had minimal Internet skills; most lay somewhere in between. New computer users are often stymied by tasks that more experienced users take for granted, such as obtaining and using an e-mail address, creating a password, signing in and logging out of an online banking website, or saving a file so that one's work can be resumed at a later time. Many skills follow from basic conceptual understandings that cannot be assumed, such as understanding the difference between a computer and the Internet or the role of the mouse in a graphical user interface. Other skills take time to acquire, such as reading and writing in English, and correlate with wider forms of inequality. The relationship between skills acquisition and capacities to use the Internet to complete broader tasks (such as job searches) is an increasingly explicit part of the literature on Internet adoption (Barzilai-Nahon 2006; Hargittai 2009; Warschauer 2003).

The contexts for such learning make an enormous difference for low-proficiency users. Many intermediaries in our sample described the importance of introducing Internet skills through low-pressure activities such as gaming, social networking, or shopping. For most, this is the path to becoming an empowered user who views the Internet as a resource or expansion of his or her world. But many new users are forced to learn under very different conditions, driven by the necessity of job searches or interactions with social service agencies. Under these circumstances, new users must master basic Internet competencies quickly. In the case of online job applications, the skill requirements for completing an application may be greater than those associated with the job itself. John, the director of the



THE INTERNET

6 SERVICE PROVIDERS

Consumer literacy related to communications providers. What should I expect from a service provider, what are my rights, what is the provider responsible for, what am I responsible for?

5 COMPUTER MAINTENANCE

Protecting the computer from malware, software upgrades, data management.

4 CONSUMER EQUIPMENT

What equipment do I need, who can I buy it from? What do I do if it breaks?

3 INTERNET USE

Getting and using an e-mail account; discerning scam sites from real sites; protecting oneself and computer from malware; how to use a browser.

2 COMPUTER USE

Keyboarding skills; how to use a mouse; how to save and transport data; software use; word processing skills such as formatting, fonts, opening and closing documents.

1 (ENGLISH) LANGUAGE

Can you read, write and speak the language?

● THE INDIVIDUAL

CONNECTING TO THE INTERNET REQUIRES MANY INTERRELATED COMPETENCIES

adult education program at Waite House, a community service agency in Minneapolis, explained the process required for online job applications:

You can't get a job as a stocker at Target right now if you don't know how to use a mouse and a keyboard, because they're only taking applications through their own kiosk that way. And for many entry-level positions you now have to actually e-mail an application to initiate the process. People don't know how to do that. There's also a fear factor, and I think people really need to keep that in mind.

Under such pressure, some intermediaries described a daily tension between teaching a new user the skills necessary to complete a given task and doing the task for them.

Low proficiency is exacerbated by bad website design. Librarians expressed frustration at the poor usability and frequent design changes of key government websites, which create recurring difficulties for some patrons and consequently place inordinate demands on staff. These sites often confound librarians themselves. A library manager in Albuquerque who helps patrons interact with the federal immigration websites told us:

I'm always flabbergasted. Every time I get on the INS [Immigration and Naturalization Service], or ICE [Immigration and Customs Enforcement] website, they've changed the format and moved all the keys around. If I go on vacation for two days and come back, it's a new learning situation. I think somebody down there in their IT department, or in their design department, their webmaster, just changes stuff because they want to stay busy during the workday while they're drinking coffee. It's absolutely maddening. Every time I get on there, the buttons are in a different place.

Cycles of broadband adoption and un-adoption

A significant proportion of our respondents (roughly 22%) were un-adopters—users for whom the fragile technical, social, and economic equilibrium that supports subscription-based services in these communities had fallen apart. Respondents cited a wide range of reasons for un-adoption—and often multiple reasons, including:

Financial challenges, such as losing a job or a home, or unexpected increases in other expenses (health care, child care).

Technical issues, such as broken computers or a computer rendered useless by viruses, a faulty router, and so forth. The costs and hassle of fixing and maintaining a computer can represent significant barriers.

Billing issues, such as unexpected hidden fees, price increases, or irresolvable billing disputes. The stopping and starting of services also bring additional costs in the form of installation and cancellation fees or penalties, which in turn raise barriers to re-adoption.

Quality-of-service issues, such as slow or intermittent service, and the inability to resolve these issues with communications providers. A wide range of respondents reported quality of service issues, and this problem is clearly exacerbated for non-English-speaking populations due to limitations on technical support in other languages. This was true even in contexts where large numbers of Spanish-speaking customers would seem to warrant significant investment in Spanish-language support. Several respondents reported difficulty getting technicians to come to their neighborhoods.

Bundling of services that, over time, proved either underutilized, too expensive to maintain, or both.

Respondents also described a set of more consequential and often unanticipated difficulties with reliance on a single provider—notably the much more complete exclusion from services single providers can impose when customers fall behind on payment. Several respondents reported losing all information and communications services when they fell short on one bill. In such cases, respondents generally had to pay all the outstanding bills to restore any of the services.

FINDING #3:

**Libraries and Other
Community Organizations
Fill the Gap between
Low Home Broadband
Adoption and High Demand**

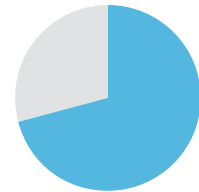
Third Spaces

In low-income communities, the tension between low rates of home broadband adoption and growing demand for Internet use falls mostly on “third spaces” that provide Internet access away from home or work. Libraries almost always play a central role in these wider ecologies of broadband access, but community centers, employment offices, and other social service organizations also fill important niches. In addition to providing access, many third spaces also play broader support roles in their communities, from skills development for new users to facilitating access to Internet-mediated social services, employment markets, and educational opportunities. In the course of our fieldwork, we spoke to 74 volunteers and staff at such organizations, including 23 librarians.

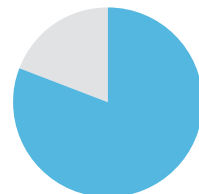
Almost without exception, volunteers and staff described sharply increased demand for Internet access and support services over the past several years—with a spike in demand in the past year as the recession worsened. This growth has altered the nature of the tasks performed by many of these organizations. Librarians, in particular, have been pushed into more general social service and IT (information technology) support roles. As employers and government agencies automate basic services in the name of efficiency, some of the savings in human infrastructure and support are simply cost-shifted onto organizations that do provide human support. Interviews with librarians indicated that many spend up to half their time assisting patrons on computers, solving job and social service application issues, and helping users make appointments or fill out forms. Our findings echo other recent research in this respect. A 2009 American Library Association (ALA) report found that 89% of library staff provide assistance with e-government tasks—an increase from 80.5% the previous year (Davis et al. 2009).

Growth in demand for Internet connectivity and assistance comes at a time when most of these community organizations are constrained by budget cuts, leading to what

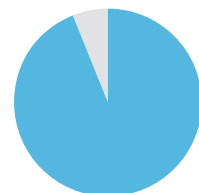
ACCORDING TO THE
AMERICAN LIBRARY
ASSOCIATION’S 2009 STUDY:



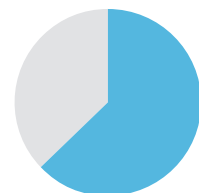
71% of libraries report that they are the ONLY source of free access to computers and Internet in their communities



81% of report that they have insufficient availability of workstations some or all of the time



94% have imposed time limits on workstations



63% have no dedicated IT staff, meaning that librarians maintain the computer system

many respondents described as a crisis among libraries and other third-space providers. The Albuquerque library system has recorded a 148% increase in computer sessions since 2004. The Free Library of Philadelphia reported 1.4 million computer sessions last year and a continuing “sharp slope” upward in demand for Internet-related services. At the same time, libraries are reducing investment in and maintenance of computers and other infrastructure. Libraries surveyed in the ALA study reported, for the first time, a decline in the number of public access computers less than a year old (Davis et al. 2009).

Who helps connect the unconnected?

New users and those without home broadband access invariably go online with the assistance of others—family members, friends, co-workers, librarians, social service workers, and so on. Yet with rare exceptions, such as community technology centers like Waite House in Minneapolis, providing such help isn’t in anyone’s job description. In many cases, tech support roles in these communities has been grafted onto organizations with other primary missions.

Where do non-adopters use the Internet?

Most respondents in our sample expressed a preference—and usually a strong preference—for Internet access at home. The advantages of home use were obvious to our respondents, who were sensitive to the many forms of negotiation, constraint, and sometimes imposition that accompany extended use in other settings. At La Comunidad Habla, one participant explained:

Like me, like Dora, like a lot of woman in our community that have small children, we can’t go to a library because the children would be all over the place and they will kick us out or tell us to come back when we don’t have the children. So that could also be a barrier; we want to go use a computer but with the babies and kids we can’t, so it’s better to have it at home.

But such negotiations were nonetheless a constant among our respondents. Nearly all the non-adopters described cobbling



A line forms outside the Rondo Community Outreach Library in St. Paul 30 minutes before opening. When the doors open, patrons rush to line up for the computers. Librarians indicated that Monday mornings, like this one, are devoted mostly to filing for unemployment.

together strategies for Internet use from the various sites of connectivity in their daily lives, including school, work, and the homes of friends and family. Each of these points of access played important roles for subsets of our respondent pool—students, office workers, and members of large extended families, for example, had different resources to draw on. But the most prominent and pervasive locations in these strategies were the public or semi-public institutions that provide Internet access—libraries and community centers especially. As our respondents made clear, this is because such third spaces generally provide more than just access. They are places where new users can gain experience and confidence using computers without imposing on a family member or otherwise paying in money, time, or favors. They are also places where non-adopters develop the skills for eventual home use.

Inter-organizational networks

It is a mistake to view the services provided by third places solely through the lens of end-user access. Many of the organizations represented in our pool of intermediaries were part of larger organizational networks that provide—and coordinate—more specialized services for their communities, such as literacy programs, job training, food banks, broader anti-poverty initiatives, and programs targeting particular demographics, such as seniors or new immigrants. There are obvious practical advantages to the integration of broadband access with such services. As Michael, a librarian and trainer at Philadelphia FIGHT, an AIDS service organization, noted:

Having computer access and training in places where people are going anyway for other reasons, for various social services, is a far better model than having them isolated. Public libraries are great for that too because people go to hang out in the afternoon, do homework with their kids, etc.

Some of this integration involves assisting community organizations themselves, who may be insufficiently resourced to maintain their own computers and Internet access. Several



A focus group with community intermediaries in Minneapolis.

participants in our sample specialized in this type of inter-organizational support. These roles extend well beyond access provision and include software development, hardware refurbishment, and more basic provision of space and facilities. From this institutional perspective, third-space access providers are central actors in the larger social service networks in their communities.

Interorganizational Support

In each of the communities we visited, we observed unique support networks serving those who lack home broadband access. Fully documenting the complexity and variation of these social infrastructures is beyond the scope of this report. However, one consistent theme that emerged from conversations with intermediaries is that digital inclusion work is specialized work, both by type of service and by constituency. As a result, many organizations form partnerships to work more effectively. We encountered many groups working at this inter-organizational level in the course of this study:

The People Escaping Poverty Project has worked in northern Minnesota and North Dakota for two decades. Initially, Project staff conducted training and provided Internet access directly to low-income individuals. Over time, they developed a more specialized role in helping other anti-poverty groups in the region use the web and other communication tools effectively.

The Digital Impact Group in Philadelphia assists low-income individuals by providing training, computers, and ongoing technical support for home broadband use. They do not recruit low-income people directly, however, but through partnerships with other community organizations—creating a web of relationships that improves chances for successful home adoption and use.

The Rondo Community Outreach Library in St. Paul offers public computers and Wi-Fi access to patrons but also hosts some 16 programs run by other social service organizations, such as the Minnesota Literacy Council. The hosted programs use the Internet facilities of the library and several, in return, help meet the technical needs of library patrons.

Generations Online, a non-profit software company based in Philadelphia, creates software interfaces that help seniors navigate the Web. Its primary clients are senior centers and libraries.

Nonprofit Technology Resources in Philadelphia is a job-training program focused on teaching computer repair and support skills. Its main products are donated computers that are refurbished for low-income users.

Benefits of third spaces: Formal and informal skill-building

Preferences for third spaces among new computer and Internet users almost always involved the human support such spaces provide. Low-proficiency users, especially, come to third spaces because they can find help when they need it and add to their skills. Many of the institutions represented in our sample offered classes or workshops on subjects ranging from basic computer skills, to job-seeking online, to “social networking for parents.” However, both new users and community intermediaries emphasized that informal coaching, often one-on-one, was the key to helping new users gain confidence and proficiency. Such attention, unfortunately, is often the first victim of staff cutbacks. Inevitably, even the best third-space providers operate under constraints. Proximity, size, convenience, operating hours, price, comfort, trust, waiting times, usage limits, privacy, and the availability of help all shape perceptions of these spaces and dictate patterns of use. Non-adopters consistently described

“This guy came to the meeting, he was just like, well you know, people will just have coffee shops. I said: “Yeah, but in your neighborhood they got like 20 coffee shops, and my neighborhood has none. What about the people who have none?”

– **Amendu**, a Philadelphia taxi driver who became a computer user after receiving new media training at the Media Mobilizing Project in 2008

CONTINUE ON PAGE 78

personal strategies for Internet use that involved navigating between different third spaces, often based on what they needed to accomplish. Distinctions between types of access available in third spaces become important in this context, ranging from public access (at libraries or community centers), to semi-public access (offered to members of an organization—students, union members, and so forth), to “contextual” access points, such as Workforce Employment Centers, which provide connectivity for job-search-related activities, to access points that serve specific demographic groups, such as youth or non-English speakers. Many such spaces figured in respondent strategies, with one notable exception: Wi-Fi hotspots in semi-public places like cafés were almost never mentioned as sites of access. Several respondents mentioned the requirement to buy food or drinks as a disincentive, but the issue was clearly complex and deserves further exploration. The finding is strong enough, however, to give pause to any attempt to view commercial hotspots as replacements for public access sites like libraries.

In contrast, in every community we visited, libraries were the most frequently mentioned sites of broadband access outside the home. According to the recent ALA study, libraries are the only source of free Internet access in their communities 71% of the time (Davis et al. 2009).

Finally, we observed—but did not explore in detail—differences in the ways that people of different ages use third spaces. We met a number of young people who used libraries or other youth-oriented spaces to connect regardless of whether they had broadband at home. The library’s function as both a safe public space and an access point gives it a prominent role in youth sociability. This was much less true of adults in our sample, for whom public access computers clearly substituted for a lack of broadband at home. In libraries that couldn’t accommodate different access facilities for adults and young people, we saw significant age segregation as adults avoided the after-school hours frequented by students. This dynamic often gives rise to two very distinct cultures of users in public libraries, separated by time of day, age, and type of activity.

TOO BUSY TO PROVIDE GOOD SERVICE

Librarians discuss how high demand for Internet services has impacted the library experience and their ability to serve their communities.

David: Because we have a crowd of people with computer problems, we can’t really dedicate the time to help somebody with complicated research, and you learn very quickly as a patron that librarians are too busy to provide that level of service.

Kathy: It’s very true, and the demand for the computers is very high. On any given day, in the morning, there are no other patrons except our computer users. There are lines of people waiting to use the computers to do all that stuff.

Phil: I see just a huge amount of frustration on the part of people who just have something that you and I would do at home in 2 or 3 minutes max, logging on, and they’re sitting around waiting for an hour [because of the line].

Julia: We consistently say to a segment of society that they are not valued and their time is worth nothing. That’s the message that is given.

Broadband intermediaries as social service providers

The stress on third spaces is not only a function of the growing numbers of users. Many intermediaries among our respondents observed that as essential activities move online, users with the lowest technical proficiency and general literacy are increasingly motivated to connect. Invariably, this population needs more help to complete online tasks than more proficient groups. Commonly, librarians reported helping patrons fill out applications and make appointments regarding Medicare, food stamps, immigration and naturalization, social security, and child care benefits, as well as complete online job applications. Because of the significant commitment of time and resources to these tasks, some librarians described themselves as the “uncompensated, de facto civil servants of all levels of government” as well as the “human resource department for low-wage chain employers.” Some librarians refused to provide this assistance, fearing that they might be held liable for any mistakes. In terms of both time and effort, such cost shifting is a major strain on the ability of community intermediaries to perform their core missions (Rideout et al. 2006).

Time limits and management

To accommodate higher demand and—in many cases—diminishing staff support, all the third spaces we visited impose time or use limits on users. Users typically face limits of 30 minutes to 1 hour per day. In many low-income communities, waits of 1 hour for a computer are typical. Waiting times at the Main Branch of the Philadelphia Free Library, where we visited in November, can reach 3 hours. On Sundays—a day when most other libraries in the city are closed—all available slots for the day are usually claimed in the first hour. All but one library we visited requires users to sign up in person. Time limits help manage the growing demand on diminishing resources but also make many tasks difficult or impossible for library users—especially users with low proficiency or limited literacy. In some cases,

WORKING FOR FREE

A librarian in Albuquerque describes how she and her colleagues offer computer training on their own time in an effort to mitigate the high demand for help with Internet-related tasks during library hours.

Cindy: The staff here, including myself and Linda, know that the teaching element is needed. [We have] special classes before the library opens to provide training to the 6 or 7 that we can squeeze into our computers—early in the morning in order to do it. And I offer about 5 different kinds of classes, and Kathy does the same sort of thing.

Interviewer: So the staff is actually opening the libraries early? It's unpaid; the staff is volunteering their time?

Cindy: 8:30 in the morning, that's right. In my case, if I can spend time with maybe 3, 4, 5, 6 people and teach them the basics of how to get an e-mail account, how to send an e-mail, receive an e-mail, it saves those 6 times when people come in later while I'm trying to manage 11 computers and serve all my other patrons at the same time. So actually, it's a way of providing a service and easing my day, if you really want to know.

Interviewer: I wonder if the garbage men get out an hour early and start collecting garbage!

Cindy: They don't. We're just sort of these crazy people.

respondents reported moving from one site to another over the course of a day to secure enough time to complete a substantial task. Reports of disputes among those waiting were relatively common, and usually involved disagreements over which needs should take priority.

Invariably, the work of librarians and other intermediaries is constrained by this situation. Although we heard of remarkable efforts and significant personal sacrifices by intermediaries to better serve constituents, resource scarcity imposes choices about whom they can support. Frequently, this comes at the expense of those who need the most help.

How to serve non-adopters

Across the board, third spaces face similar obstacles in serving their constituencies—especially at the low end of the skill spectrum where one-on-one help is required over a period of time. Staff time was almost always described as the scarcest resource in these contexts and staff expansion the most often-cited way of improving third-space support for constituents.

Staffing problems extend to maintenance of the computer infrastructure. Maintenance is a crucial recurring expense that, if ignored, can rapidly degrade computer-based services. Because of constant public use, public computers typically require more maintenance than personal computers. Intermediaries reported that even new computers can become unusable within weeks under such circumstances, especially in organizations without IT staff to manage routine fixes. Most third spaces we visited had collections of computers in various states of disrepair, ranging from the semi-functional to unusable.

Even the best-resourced third spaces have significant bandwidth and infrastructure costs, and these too have become areas where budget cuts or freezes have constrained the ability to meet growing demand. We visited libraries and community centers whose networks are regularly overloaded in peak afternoon and evening hours, to an extent that makes even e-mail slow or unusable. Many of the organizations we

TAKE THE TIME TO SHOW ME

Benjamin, a new Internet user and **Michael**, a librarian in Philadelphia discuss how to make computer education better.

Benjamin: I think they could have an educational program where people can actually get to learn how to use computer programs, not just get on a computer. [There are] a lot of places where people can get on the computers, but they get there and they have no idea. Nobody wants to spend the time to teach. That's what I went through at first when I was trying to learn how to use a computer ... I said, "Well, if you take the time to show me right, you don't need to show me again. Just show me one time. Right? Dude, I don't want to piggyback on you. I want you to show me one time how to do it and you don't have to keep doing it for me."

Michael: That's where I really think the bottom line to all of this is. Because I'm that guy. I'm the guy who everybody asks, "Can you help this person?" But I'm also doing all this other stuff, and there's also 6 other computers and people waiting, and I wish we could buy 6 more computers and set them up there ...

visited also had space constraints that would prevent them from significantly expanding their computer infrastructure even with adequate resources. One library we visited had computers crowding the hallways.

Funding challenges and governmental support

More training and more availability of help was a frequent request among new Internet users in our sample. Yet, obtaining funding for such programs can be a challenge. All training funds in the Albuquerque Bernalillo library system, for example, are raised by the all-volunteer Friends of the Library.

Third-space directors and employees were highly supportive of federal funding programs that provide broadband infrastructure and training support. Initiatives like E-Rate, which allows schools and libraries to apply for funds to expand Internet connectivity, and the Broadband Technology Opportunities Program (BTOP), which supports programs designed to expand access in underserved populations, were widely praised. However, many librarians also see room for improvement in the E-Rate program. Several commented that the program could be improved by simplifying the re-application process and reconsidering program restrictions on the kinds of infrastructure eligible for funding. One respondent who manages the IT resources of a large library system noted that because E-Rate does not fund “redundant” infrastructure, it often leaves fragile networks whose higher maintenance costs fall back on libraries and schools. For example, a network test at one library initiated by an Internet provider inadvertently took 17 libraries offline for a day, disrupting service for many patrons who were likely applying for jobs, unemployment benefits, and other time-sensitive and important tasks. No service provision is perfect, of course, but in contexts where libraries are the primary access points within communities, such fragility imposes high social costs.

FRIENDS OF THE LIBRARY

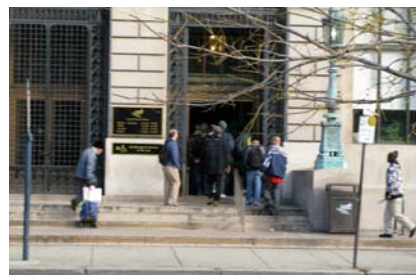
An Albuquerque librarian speaks about the challenge of obtaining adequate funding for digital inclusion programs like computer training.

Interviewer: I just want to understand what you’re saying, that the Friends of the Library are basically ladies having bake sales. So that’s how you’re getting the money for your programming? And if you were going to have a training component right now, you would need to have millions of dollars worth of cookies sold, or something like that?

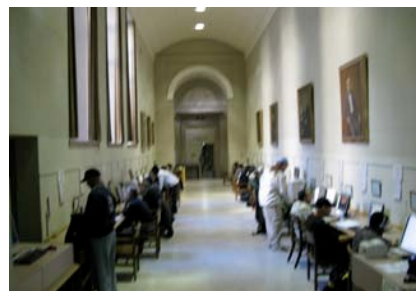
Julia: Well, actually, they sell books, and last weekend, they made \$29,000 doing that, so it’s a very effective group that does this, but absolutely. In order to give us 1 dollar, they have to sell 4 paperbacks. So it’s a huge effort, and ... I don’t believe we’re unique, I don’t think that municipalities fund programming in libraries consistently throughout the United States. I think some large library systems have much more financial support for that than we do, and it is embarrassing that we have none, only we’re the only ones who are embarrassed.

Digital inclusion ecologies

In the wake of EarthLink’s withdrawal from Philadelphia’s municipal wireless project in 2008, local activists and community organizers rallied to develop a new strategy to address the digital divide in their communities. The partnership includes local libraries, groups supporting home adoption, and groups that, as one librarian put it, “are in places we’re not.” The effort was catalyzed by the opportunity to apply for a grant via the BTOP initiative. Siobhan, the executive director of the public library system in Philadelphia, told us that, whether they receive the grant money or not, the collaboration spurred by the application process has already strengthened digital inclusion work throughout the city—including their own approach in the libraries. The process created occasions for sharing best practices, lessons learned, and the articulation of models that will move Philadelphia’s digital inclusion work forward. Similar coalitions exist in the Twin Cities, where digital inclusion groups came together to negotiate a Community Benefits Agreement as part of Minneapolis’s efforts to build a municipal network. The relationship between libraries and municipal governments also proved to be a subject of widespread concern among librarians. Libraries have been shifting resources to accommodate the ever growing demand for online services, but governments have generally not recognized or funded this expansion of service. Librarians reported that municipal (and sometimes state) leadership was frequently unmoved by the dilemma of budget cuts in a context of escalating constituent demand for broadband services and support. Several argued that municipal officials viewed libraries as a “quality-of-life service” as opposed to an “essential service” and thus as a discretionary expense that could be cut without serious socio-economic consequences. Infrastructure costs and upgrades appear to be routinely problematic. At the Cairo Public Library in rural Greene County, New York, staff and patrons rely on 1 residential-class broadband connection, which makes the network virtually unusable for a time each afternoon. In this case, municipal



People waiting for the doors to open to use the Internet at the Central Branch of the Free Library of Philadelphia.



Nearly everyone in the library is reading from screens.

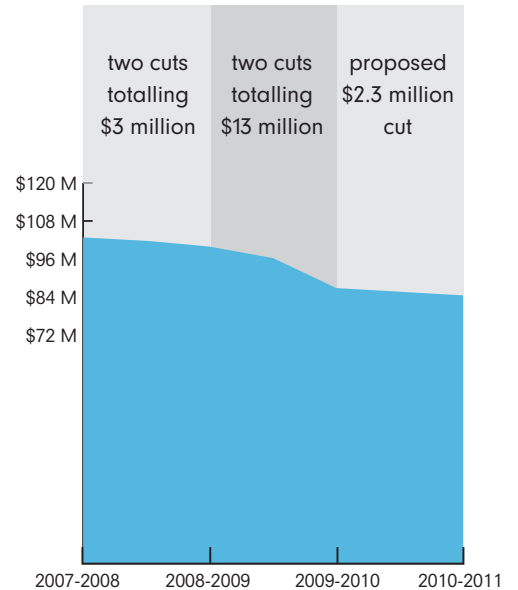
BROADBAND ADOPTION IN LOW INCOME COMMUNITIES

leaders rejected the library's request to negotiate an affordable business-class connection during recent cable franchise negotiations. State funds will not be forthcoming either. New York State library funding has been cut five times in the past two years, even as demand has increased statewide by 10%. Libraries in New Mexico and Minnesota reported similar problems obtaining sufficient bandwidth to keep networks operational and similar challenges in gaining the support of local leadership for more than minimal levels of service. Consistently, librarians felt that local leadership did not understand how much of their activity involved providing broadband access to underserved populations and how much patrons use these services to navigate basic life tasks.

Such concerns, of course, take their place among sweeping cutbacks to many basic municipal and state services in the current economic crisis. But not all the reported concerns were budgetary. It is clear, for example, that the core functions of libraries are changing, both through the shift of written culture into electronic form and because the ubiquity and public service mission of libraries exposes them directly and immediately to the changing needs of their constituencies.

Although libraries clearly need more municipal help with this transition, many of our respondents saw hindrance. Librarians in Albuquerque reported that staff cannot print out e-mails for patrons on staff computers because some webmail sites are blocked across the entire municipal network, including on library staff computers. Nor can the Albuquerque library system make Spanish language competency a hiring requirement for librarians despite the desperate need for professionals with strong bilingual skills. The emergence of broadband access as part of the public library's core mission is clearly a conceptual, administrative, and material challenge on many levels, and one that needs stronger municipal engagement and support in order to resolve.

NEW YORK STATE LIBRARIES
HAVE HAD THEIR BUDGETS
CUT FIVE TIMES IN THE LAST
TWO YEARS.



Conclusions

Our goal in this study has been primarily descriptive—answering the FCC’s need for a robust account of the forces shaping home adoption and non-adoption in low-income (and other marginalized) communities. This descriptive function is especially important, in our view, in a context in which the well connected—ourselves included—have a tendency to universalize their own experiences of ubiquitous access and technical fluency. Given this mandate, the main findings of this report are three:

(1) Broadband access is increasingly a prerequisite of social economic inclusion, and low-income communities know it.

Demand for broadband in these communities is consequently growing, even as the economic crisis undermines family and community resources to support Internet use.

(2) Price is only one factor shaping the fragile equilibrium of home broadband adoption, and price pressures go beyond the obvious challenge of high monthly fees. Limited availability, poor quality of service, hardware costs, , hidden fees, and billing transparency are major issues for low-income communities.

(3) Libraries and other intermediaries fill the gap between low home adoption and high community demand, and providing Internet access and related support is increasingly part of the core missions of these institutions. Even as home broadband becomes more prevalent, third spaces have a crucial role to play as safety nets for access, and as providers of training and task-based assistance for their communities. Often this helps users gain the skills that lead to confident, sustainable home broadband adoption.

The short time frame of the project and the overwhelming needs described by respondents in the communities we visited leave us with a profound sense of incompleteness. Our work raises a number of concerns for which the primary recommendation can only be

further research—especially at the local level where difference in services, pricing, and community resources create specific contexts for non-adoption.

And yet, some issues were raised with enough regularity to suggest wider policy and regulatory approaches to mitigating problems of access in low-income communities. At a moment when broadband policy is being set at the national level for the first time, we are conscious of the possibility of making a difference not just in the availability of broadband, but in the larger opportunity structures in these communities. To this end, this study points to a number of specific conclusions and recommendations:

Un-adoption—the loss of home broadband service—is a serious and under-recognized problem in the larger broadband dynamic. In our sample of non-adopters, 22% were un-adopters. Income fluctuations played the most significant roles in respondents' accounts of un-adoption, but unpredictable service costs and opaque billing practices also figured frequently. Closer investigation of these practices and their effects is needed, but our work suggests that modest, consumer-friendly changes in these practices might improve the sustainability of broadband use in these communities.

Complaints about quality of service, billing transparency, and more basic issues of availability were nearly universal in our respondent pool. Doubts about the accuracy of service provider claims of coverage were particularly troubling given the reliance of government agencies on those providers for data. We also found significant differences between theoretical coverage and practical, accessible service in many communities. Our study did not examine these issues in depth but, in our view, the frequency of such complaints clearly signals the need for further investigation. Any official strategy for measuring availability, moreover, should include provisions for research into such differences at the local level.

Cost-shifting onto community organizations needs to be met with additional funding of those organizations. Government agencies, school systems, and large employers increasingly privilege web-based access to many basic services, including job and benefits applications. Because many of the constituents for these services have limited Internet access and/or limited Internet proficiency, these measures often shift human and technical support costs onto libraries and other community organizations that do provide access, in-person help, and training. Fuller funding of these intermediaries is the best means of assuring a meaningful broadband safety net and a stronger pathway to adoption in these communities.

Investments in Internet proficiency remain critically important in low-income communities, where large numbers of people are encountering the Internet for the first time—often in the context of job losses and other high-pressure situations.

Investments in promoting or justifying Internet use to low-adoption communities, in contrast, would appear to be a waste of money. We found no evidence of disinterest among our respondents. The range of activities that has moved online is simply too great to ignore. Everyone in our sample was a user in at least a minimal sense, if only via proxies among friends or family.

Because the transition from in-person to e-government services has jumped ahead of the capacities of some of the constituents of those services, there is a continuing need for efficient, resilient ways of accessing essential social services in person, via telephone, and via paper correspondence.

Relatedly, social service providers need to update their views of what constitutes a vital bill or budget item in evaluating eligibility. Although not on the order of rent or electricity, Internet access clearly rates higher than cable TV and—arguably—landline telephones as an enabler of economic inclusion.

Bundled services—especially triple-play Internet, phone, and cable TV services—seem ill-adapted to communities where respondents nearly always ranked cell phone and Internet service far ahead of cable TV and landline phone service in their preferences. Such all-in-one provision also ensures more thorough exclusion from communications services when respondents fall behind on the larger combined bills.

Field Reports

FIELD REPORT EXCERPT #1

A VISION-IMPAIRED LIBRARIAN SPEAKS ABOUT ACCESSIBILITY

We visited a branch of the Free Library of Philadelphia in early November. Lynne, the librarian in charge of the government periodicals department showed us her section of the library. The department – with high ceilings, a few wooden desks, and a handful of computer terminals also houses the library’s Access Technology Program. This program provides computers for people with low or no vision. This library is one of 9 locations in the Free Library of Philadelphia system that has Access Technology.

The Access terminal looks like a regular computer, with some extra devices surrounding it, including a Braille-reader and a Braille-writer. The computer had several programs on it. One, called ZoomText, allows the reader to magnify electronic text or a webpage and to change the color of the text or background of the document. It seemed relatively easy to use, but when zoomed to 4x or 8x, navigating a webpage becomes a very different experience. It is no longer possible to see the whole page at once; it takes much longer to scroll / navigate / mouse across the page to find what specific sections or links.

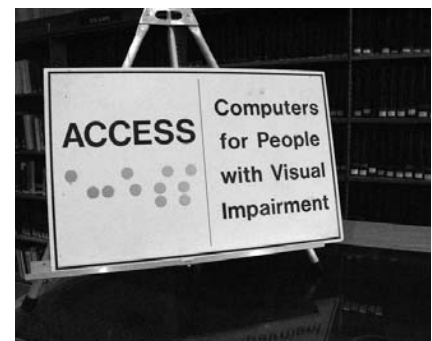
Another software program, called JAWS, allows the computer to read web pages or documents aloud. There is a small speaker next to the computer desk, through which an electronic male voice begins by reading the library’s homepage. It reads not only the visible text, but also describes the layout of buttons and other navigational features for the reader: “Welcome to the library, space, space, indent 4, navigate down left to click on services, navigate two down left to click on books,” etc. Lynne navigated to the front page of the New York Times to provide a more typical example. The voice started to read the page, working its way through the header, various sub-menus, etc. The process demands a great deal of patience to listen to the page navigation as it is read.

Interview

November 3, 2009
Philadelphia, PA
Free Library of Philadelphia

Themes

Barriers to Access, Cost, Proficiency



The Central Branch is one of 9 locations in the Free Library of Philadelphia system that has Access Technology.

Lynne introduced us to Simon, a young librarian with macular degeneration. Simon is in his 30s and can't see very well, yet he doesn't wear glasses. He told us that he was recruited out of library school as a librarian for the vision impaired. Simon proved to be a wealth of knowledge about computing accessibility issues.



Simon, a librarian who specializes in working with the visually impaired

Interviewer: How feasible would it be for someone with low-vision to own and use a computer at home?

Simon: It would be difficult because the software is expensive. I have the software because of my job at the library, but for someone else ... For example, the ZoomText software costs about \$800, and it costs \$200 for each upgrade as the software changes. JAWS, a program that reads text on the screen, costs about \$1,000. If you want to buy a screen reader that can translate text on the screen to Braille (that you can feel by resting your fingers on the keypad) that costs \$3,500 to \$15,000 depending on the number of characters. As a visually disabled professional I am able to afford a PC with access technology. The majority of visually disabled individuals do not have full access to the Internet due to their economic and life situations. They need to rely on public access to the Internet via an accessible computer.

Interviewer: So, all of that is on top of what it would cost to simply buy the computer?

Simon: Yes.

Interviewer: So, it might not be feasible for most individuals to have a home computer?

Simon: This is a difficult question to answer, many in the disability community who are highly educated individuals working in professional sector have PCs at home with access

THE PRICE OF ACCESS

JAWS (an on-screen text reader):
\$1,000

ZoomText (software that enlarges screen size):
\$8,000

Braille Display:
\$3,500-\$15,000

technology. However there is still a large majority of the disability community that does not have access to a PC at home. That's why library access is important. The Library for the Blind also has access terminals, and a lot of the patrons that go there also find out about our department. Another barrier to computer use for the visually impaired is the incredibly high level of computer skills that are required to use some of these programs. Jaws and other applications have thousands of keystrokes. To use Excel for instance, you've got to memorize a lot of commands.

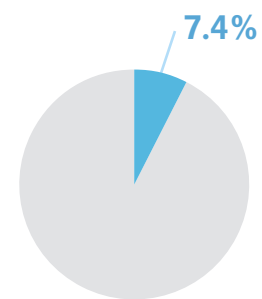
Interviewer: Are there other barriers?

Simon: Yes. One is with the computers themselves.

The Windows operating system has never included accessibility options usable by visually impaired or blind individuals. When buying a PC one has to add on extra Access Technology software. Technically Windows complies with Section 508 rules, so it does have a range of accessibility options in its OS. These could help seniors who have relatively low levels of vision impairment where you just need the text to be a little bit bigger. But, in reality, it's not accessible to a visually impaired or blind individual. Apple has done a lot better on this front. For the last 5 years or so Apple has incorporated access technology into its operating system code. So, Macs naturally have functionality that is about equivalent to a PC with JAWS or ZoomText. I'm thinking about switching over to a Mac myself when I get a new computer, but I haven't decided about that yet.

Interviewer: So, if I were visually impaired it would actually be a lot cheaper for me to just buy a Mac rather than buying a PC and all the extra software?

Simon: Yes. But, not that many people have Macs – only a small percent of the population. There's an interesting story related to all this. Adobe almost got sued 5 or 6 years ago because

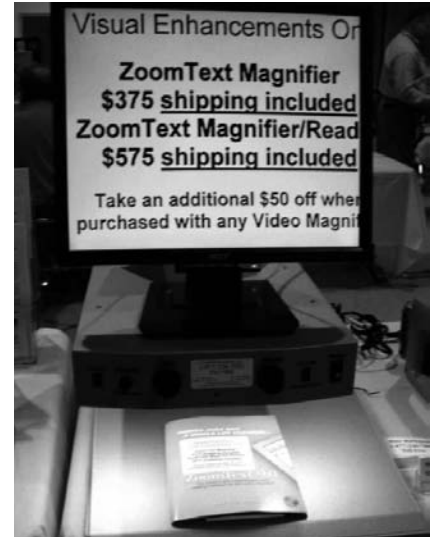


Macintosh share of U.S. computer market (4th Quarter, 2009)

.pdfs weren't readable by JAWS and other access technologies. Adobe scrambled and had to do a lot of things, but in the end they made the .pdf format accessible. Now they have won some awards for accessibility.

Interviewer: Anything else?

Simon: Another thing is that although it is possible to move around the Internet using ZoomText and JAWS, not all websites are accessible. There are W3C and section 508 guidelines on web accessibility, but it is up to the individual designing the website to comply with them. Compliance with these standards needs to be enacted as a regulation. There are all kinds of things that are not accessible. Any website with Flash – forget about it. Any application based on JavaScript code is also impossible to access using JAWS. Social networking sites—forget about it. Or, there's only so much you can do online if you have to zoom so that you can only see 1/8 of the page at one time.



ZoomText, a software program that helps users with visual impairment use computers.

FIELD REPORT EXCERPT #2 THE HIGH PRESSURE STRUGGLE FOR PROFICIENCY

Roxanne is an African American working mother in her early twenties. She is also a part-time student training to become a community organizer. As a new user dependent on social services, Roxanne's experiences with the Internet have been frustrating and frightening.

Interviewer: We're doing a report about what's going on in communities that haven't had much access to the Internet. What are the challenges that people are facing here?

Roxanne: In my life right now, I'm working on what are really my challenges, and what are my excuses. You know? I'm trying to separate them. I'm very slow at typing and I do not like computers. I keep finding myself saying "I hate computers," and I know it's because I don't understand them. And, I'm working on that. But there was a big gap in years where I did not use computers, all my peers and stuff had computers at home, but I did not. I grew up running around in the streets, trying to figure out myself, and computers were not my priority. So now I'm feeling the stress now, trying to figure it out. Technology is changing constantly. So trying to catch up, and just do regular things like type a school paper, it feels like I'm trying to run on air or something. I would rather just start writing things again with pens and paper!

Interviewer: Are there any ways that computers and the Internet make your life better?

Roxanne: I attempted to take an online class one semester, and I failed. It was the winter, and I thought that if I took it I could stay home with my kids. But, about the time I got done reading all the books, you know, it's one o'clock in the morning, 'cause I had to get the kids to bed at a certain time. They don't always want to fall asleep right away. Then you

Interview

November 11, 2009

Minneapolis, MN

Hope Community

Themes

Proficiency, E-Government



Roxanne, an African American working mother in her early 20s. She is also a part-time student training to become a community organizer.

gotta read the stuff, and then you gotta type the stuff. I would just quit. I would be so tired by like 1:30, 2 o'clock in the morning. Like, "You know what? I'm going to bed." It turned out it took more time and more effort to get on the computer than it did to go down to my school, you know.

Roxanne: [The Internet] was supposed to simplify people's lives. I'm not sure why it's easier for people, because in the end to me it seems like a longer process. You go down to the welfare office, and they're asking the same questions over and over again, they want the same information that they just got last month. Or, the county, all these people are connected supposedly by computers. They know when you're lying. They got some sort of computer that tells them that. But when it comes down to people sharing the information? Oh my god! I have to talk to my job every month about sending the information to my Section 8 worker, to my child support worker, to my child care assistance worker, to my school, to my doctor, whatever. They all need the same information. I'm sitting here like, "I thought you guys had this together, with the computers!"

Interviewer: I appreciate that you're willing to talk to us about the issues that you have dealing with social service agencies because I feel like a lot of the folks that we've talked to aren't comfortable bringing up the challenges that they have with that. We've been going around the country, and different states seem to be pushing people to do more online. You know, their childcare, their disability, or their welfare services...

Roxanne: I feel that all the businesses kind of give you the impression that it would be easier for them if we would communicate with them online. The reason why I say that is because they don't answer the phones anymore, and sometimes the fax machines are busy. I got into it with my Section 8 [rent subsidy] worker, she threatened to take my

Section 8 away because she did not have my Social Security card. I think I tried at least 20 times to fax something to her. The phone was busy for three hours. So I finally sent her an e-mail. She did not contact me. Later she said she didn't get my phone calls, she didn't get the e-mail, she didn't believe me that the fax machine was busy, so she made accusations that I was lying.

Interviewer: So, what happened?

Roxanne: In the end I found out that I had made a mistake. I put an "i" in her name instead of an "e." So when I sent the e-mail, it did not get to her. I had to end up talking to the supervisor. The supervisor was like, "I see that you did try to do it, and yes, you put the wrong letter." So luckily, I'm not going to lose my Section 8 based on that e-mail. But it's still scary. What if the supervisor hadn't understood that? Thank god people understand.

FIELD REPORT EXCERPT #3 PROVIDER ISSUES: THE HIGH COSTS OF CONNECTING

In this conversation, Paddy, a single white mother in her 40s, and Kevin, an African American man in his 50s, talk about the challenges that they have had trying to get broadband at home. Ben, a young librarian and computer trainer was also present. This exchange, which took place in Philadelphia, is similar to dozens of others we had in the course of our fieldwork.

Interviewer: Do you have Internet service?

Beth: Well, I've only had it through Wireless Philadelphia [a non-profit wireless network, instigated by the municipality].

Ben: I think that doesn't count, exactly.

Beth: That's not having it?

Ben: No, well, I mean, does it work?

Beth: It did until about three weeks ago.

Ben: Oh really?

Beth: I was getting low signal. But I was able to get online with it, yeah.

Ben: Ok, I just heard very bad things about it.

Interviewer: Ok, so you had it, but the service dropped out on you?

Beth: Yeah, yeah, right when I was starting an online course.... It was very slow, you know. I was able to get it very, very slow.

Focus Group

November 2, 2009

Philadelphia, PA

Media Mobilizing project

Themes

Cost, Availability



Bryan, a community partner, outside of the Media Mobilizing Project Offices in Philadelphia where two focus groups took place.

Interviewer: Yeah, it wasn't really maintained and –

Beth: Yeah. And the landline, I've been waiting to get a connection through a landline. But apparently there hasn't been a previous connection in the apartment that I'm in. So I'd have to set up, oh, I forget what they call it, some kind of a service through Verizon I guess for a month before, you know, before you could even get, because it just takes, it takes a long time when you haven't had any service there at all.

Interviewer: So you were trying to get to get a connection through a regular phone line to do this [DSL]? And they wouldn't give it to you?

Beth: No, I could, it's just that it was time consuming and money consuming. And that was a major reason why, you know, you don't really want to venture into it. Because when you look at all the different plans out there and you don't have an inkling of what you're getting into, you start to read the fine-print and see that, you know, you can have computer and phone and cable, and you can get it for a good price for a year, and then you have to start paying through the nose.

Kevin: A guy from Comcast, he even told me. He said "Listen" he said "Now you didn't here this from me" He said, "The smartest thing for a person to do if they're going to have wireless service in their home, go to Radio Shack and buy your own router! Because if we give you a router, the router's going to cost you \$300! And then we're charging you \$28 a month, rental fee for the router that you get from us!" But, I just had Comcast and I hated it! I hated it because the wireless service, it sucked. The cable, no kind of selection at all. It's just a gimmick. I signed up on the first of June and the 30th of June my bill is \$800.¹¹ Are you kidding me?

Interviewer: What?!

Kevin: \$800.

DSL NO MORE

Elvina describes how she has been unable to get broadband service despite the fact that it is available to businesses in her neighborhood. Her story first appeared in the March 2009 newsletter of the Milwaukee branch of 9to5, the National Association of Working Women.

Elvina: I had DSL for years. When I relocated, I found out I no longer had DSL. It is not available where I live. I live next to a bank, two blocks from a local Library, a gas station, and a small store, which are all using broadband. I have been living here for over a year, and every time I call, they say there is nothing available and tell me to keep calling. I was forced to order dial-up, and I am regretting this to this day because they do what they want when it comes to your account. This is unacceptable, but if you want any kind of Internet, and you are in my position of living in a low income neighborhood, then I guess this is what you must do.... unless something changes. The Obama administration has promised to provide broadband to 'every community in America'. I hope this happens soon as it would bring meaningful change to my community, providing access to information and resources.

Interviewer: For what?

Kevin: For installation. Three boxes. To use their service. For them to come out and connect it. It was utterly ridiculous. They got a package deal, but see, sometimes people who are not really savvy in the business world, we have to learn to read the fine print that's under the big, bold letters. Ok, you want to charge me a \$250 early termination fee? And I only had the service, never ordered no movies, never did none of that. But my bill was \$800? It's sickening. It really is. And so that's why I think a lot of people are veering away from Verizon and Comcast. Because it's a rip-off.

Kevin: I was a sucker for Comcast. I learned by my mistake. Now it's on my credit report. You know, because I refuse to pay. And they charged me early termination. Now like, they sent me a bill the other day it was like \$1200. I'm not paying that kind of money.

Beth: And then you can't get communication.

Kevin: Yeah

Benjamin, a focus group participant: Then you're trapped.

Kevin: Exactly.

FIELD REPORT EXCERPT #4 RESOLVING QUALITY OF SERVICE ISSUES IN RURAL OREGON

In this phone interview, Claudia, a self-described “educated and fully acculturated” Mexican-American, describes how it took her six months to solve a quality of service issue with her broadband provider. She speculates that people without her skills and experience may not be able to resolve such an issue. Claudia is a proxy user for her 76 year old mother.

Phone Interview

October 31, 2009

Rural Oregon

Themes

Quality of Service,
Proxy Use, Rural

Claudia: I’m sorry I couldn’t respond to your email. I just had surgery on my shoulder for a rotator cuff injury from an accident with my computer bag. It’s going to be a few weeks before I’ll be able to type with both hands again....Internet! They are advertising the Internet everywhere. Everywhere you look, on the TV, on your bills, everything says “www” on it these days. My mom is 76 years old. She sees the ads on TV. She says, “Claudia! Look it up! Look it up on the net!” I look it up because there’s more information on the net. You can compare. I help my mom when she wants to shop for something.

Interviewer: She doesn’t use the Internet herself, you do it for her?

Claudia: Yes. I look it up for her. I’m getting a class together for her, just her and one friend when her friend comes back from vacation. She’s going to come over and have coffee and I’m going to show them how to use it. My mom, she’s a reader. She likes to keep up on things especially Mexican history, what’s going on in Mexico. She would love it. The Internet could bring Mexico to her fingertips.

Interviewer: You have the Internet at home?

Claudia: Yes. I have it here, but you see, where I live, you

should really come here to a rural area, you would get a lot of stories from a place like this. See it cost me \$90 a month just to get a basic phone line here. So when I saw the ads for the VOIP phone, I could get the internet and have the VOIP phone and it was like 75 dollars a month and I thought that was good because I could get the phone and the net both for just 15 dollars a month more than I was paying for phone. So I signed up for satellite but it was terrible. At first it worked great but then after about 2-3 years we started having problems. It took about six months to fix it. It was awful. The trees in the neighborhood grew in. They were not on my property. But they [the provider] didn't help me. They have always known where their towers were. This is Oregon, I live in the Cascade Mountain Range. I don't know maybe in New Mexico or somewhere else it would work better but here, we have a lot of trees. How could they not have known that the trees would grow in? And you have to understand, I'm an educated fully acculturated woman. I run a program with a budget of a half a million dollars a year and work with many different federal and state agencies. So I know my way through paperwork and it still took me six months to get it solved! In the end they gave me my money back for the months I missed. But I thought of my mother and my cousins who speak English but not as good as me and I thought, 'No wonder there are so many Latinos here going to the library, they wouldn't be able to sort this out.'

Interviewer: So you got it fixed?

Claudia: Yeah, I switched to DSL now. When I signed up I was given the choice of satellite or DSL. I said, "Which one's fastest, easiest to use? They said, "Satellite." But they didn't tell me about the trees. I wonder how many other people they hoodwinked into getting it. I have the VOIP phone and the DSL Internet. It's more than they said at first. There's another charge, and I had to get another dedicated phone line with the local phone company, but it's still only a few

FIOS REDLINING?

Jeremy, a Philadelphia community intermediary described FIOS installation in his home.

Jeremy: The FIOS installation took 5 to 6 hours. Over that time, I had a lot of time to talk to the installer. He was blunt. The installer was a Delaware guy who got transferred up to Philly. His buddy down in Delaware didn't want to transfer because he didn't want to work in those redlined areas.' His buddy got laid off because he wouldn't take the transfer.

dollars more than I was paying before for just phone. [Talks about the providers in the area and different options...] But I have my email, my personal email, I've had it for years. If I switched I'd have to change my email address on all of my bills and everything and all of my friends and family have that address. They really get you.

Interviewer: Do you ever worry about outages?

Claudia: Oh yes. We have a lot of outages here and not just in the winter. My work has DSL too. Since I work from home, they call me up and ask me if my DSL is out so they can tell if it's an internal problem or just another outage.

Interviewer: What about for emergencies?

Claudia: Well that's why we have the mobiles. Even my mom has a mobile. She only uses it about two... three times a month, but when we were having all the problems with the satellite our family got really worried. You see, the rest of my whole family besides us is in Southern California. And the other thing is, you know, we've lived here for 30 years and we've always had the same number. With the mobiles, you can't get your landline number on the mobiles and that's the only way that a lot of our family can find us. I have a younger couple as neighbors. They drive me crazy. They are always changing their number to get a better deal. I'm old fashioned. I can't do that.

Interviewer: So you need both the VOIP phone and the mobile phone?

Claudia: Yes. It's too bad that you can't come here because I think you'd find a lot of stories. Especially with the migrant population and what they have to go through.

FIELD REPORT EXCERPT #5 COST-SHIFTING SOCIAL SERVICE SUPPORT TO LIBRARIES

This conversation took place in a focus group with librarians from the Albuquerque and Bernalillo County library system in New Mexico. It included librarians representing 6 out of the system's 17 libraries.

Interviewer: Why are people are coming to the library to use the Internet?

Julia: The issue is money. I cannot imagine the average office worker in downtown Albuquerque having enough monthly income to pay the fees that are charged by the primary broadband providers.

Phil: I think the lack of money, that's the key. That's the bottom line. But I also see at the South Valley Library, 30 percent of our users, who are recent immigrants, have no familiarity with computers. They've grown up on ranches out in the desert of Chihuahua, or Cuohila, or Nuevo Leon. They come in, and they want to use computers, because they're trying to get a job and want to put a resume as an attachment using a new e-mail account that we've helped them get, but they really don't understand keyboarding, or anything. So, I think that's a problem too.

Kathy: I agree with Phil, but it's not just the Hispanic population. I teach computer classes. The majority of the people that take advantage of them are Anglo, in their upper 40s early 50s that have never needed the skill, because their previous jobs didn't require it. But they're seeking new training because of the job environment.

Interviewer: So they're people that are unemployed? They lost their jobs?

Focus Group

November 19, 2009
Albuquerque, NM
Albuquerque Main Library

Themes

Cost Shifting, Proficiency,
Jobs, e-Government



Phil, Kathy, Eileen, and Natasha, librarians in a focus group in New Mexico

Kathy: Correct.

Phil: One of the most heart-wrenching things I see is men and women in their late 40s and early 50s who have worked at a job for 25 years or so. Suddenly they're out of a job and they never needed to use a computer previously, and they're in panic mode, because they now find that every job application they submit has to be done electronically, and they don't feel at all comfortable with that.

Natasha: There's also a huge disconnect with minimum-wage jobs, like for Wal-Mart jobs you are required to apply online. Those people are looking for a minimum-wage job. They don't have a computer at home. They don't have Internet access. But yet they're required to go to a public library where there are ten computers and hundreds of people waiting to use them, which they can only access when we're open.

Eileen: This really puts pressure on libraries. For example, K-mart doesn't keep applications on hand and they send people to us to apply online. They're shifting the cost to us. One poor lady who was trying to make a K-Mart application, and she must have clicked on something else. She was getting all kinds of pop-ups, and she was afraid she had somehow signed herself up for a cell phone with a credit card number.

David: I think a lot of our users don't really have a conceptual understanding of the Internet. So, you have people who, they filled out the application on this computer, they want to get back on this computer. I've seen people making up new e-mail addresses every time they come in.

Phil: Over the last year or so I've become more painfully aware of the pressure that a lot of these users have when they're in the library. I used to assume that maybe at their workplace they would have a computer that they could get access from time



Julia, Director of the Albuquerque/Bernalillo Library system

to time. And I realized, finally, that a lot of these people are service workers, and in their workplace, they have precious little time to ever get near a computer. It's their manager or somebody two or three steps up the pecking order who has the computer. So when they are in the library, most of the adults who are in the job search mode, or attempting to change jobs, are definitely highly focused.

Interviewer: What else besides job searches do people need help with?

Kathy: Well, the INS [Immigration and Naturalization Service] applications. Just the other day this woman, I mean, literally, was in tears. I have a Spanish-speaking librarian. She understands, but she can't speak as well. She sat down and went through an English application with the woman, asking and translating. Even though there's a Spanish version available, she couldn't figure it out. But the woman was in tears—total tears—because she could not get an appointment to meet with INS without going online.

Phil: I also help people with INS a lot. I'm always flabbergasted, every time I get on the INS, or ICE website, they've changed the format, and moved all the keys [buttons] around. If I go on vacation for two days and come back, it's a new learning situation! I think somebody down there in their IT department, their design department, their webmaster, whatever just changes stuff because they want to stay busy during the workday while they're drinking coffee. It's absolutely maddening. Every time I get on there, the buttons are in a different place.

Interviewer: How much of your day do you spend helping people do things online?

Kathy: I would say close to 45 percent of my day is spent helping somebody on the computer, solving an application issue, making an appointment, or filling out a form.

Interviewer: If 45 percent of your staff time is going to help people fill out job applications, get e-mail addresses, do resumes, create applications, etc. what did you have to give up? What are you now not able to do that you had time to do before?

David: Because we have a crowd of people with computer problems, we can't really dedicate the time to help somebody with complicated research, and you learn very quickly as a patron that librarians are too busy to provide that level of service.

Kathy: It's very true, and the demand for the computers is very high. On any given day, in the morning, there are no other patrons except our computer users. There are lines of people waiting to use the computers to do all that stuff.

Phil: I see just a huge amount of frustration on the part of people who just have something that you and I would do at home in two or three minutes max, logging on, and they're sitting around waiting for an hour [because of the line].

Julia: We consistently say to a segment of society, that they are not valued, and their time is worth nothing. That's the message that is given.

FIELD REPORT EXCERPT #6 VOLUNTEER WEB TRAINERS HAVE A HARD TIME STAYING CONNECTED THEMSELVES

The East Central Ministries community center sits in the middle of a block of modest adobe-style homes in Albuquerque. There we met with a group of community volunteers, La Comunidad Habla (The Community Speaks), who offer introductory training in basic computer skills and Internet use to people in this area. The neighborhood is predominantly Spanish-speaking with many New Americans.

We expected that the focus group would consist of “community intermediaries” who support “non-adopters.” We quickly realized that, in this community, the line between the two is blurred. Even the trainers have a hard time maintaining Internet access at home. They were “un-adopters” cycling through periods of connectivity and lack of connectivity depending on their financial status. At the time of our meeting, three of the five volunteers were without Internet at home. The two who did have broadband access reported disruptive quality of service issues.

Azucena, a community health worker, started offering the trainings about six years ago. The others in the group were once students in the class; now they train others. Azucena and Celia are middle aged. Claudio and Maria are in their 30s. Veronica is in her 20s. Candelario Vazquez of the New Mexico Media Literacy Project translated for us.

Interviewer: How would you describe this community, who lives here, and what it’s like?

Azucena: Well, this community is mostly Hispanic. This area is called the South East Heights. We see a lot of need here. In terms of technology, well, we at least give them a chance to learn the basics. And also, in this area we’re the only ones who give classes in Spanish.

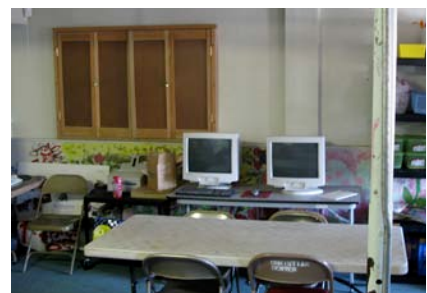
Interviewer: You were saying that a lot of people have Internet

Focus Group

November 17, 2009
Albuquerque, NM
La Comunidad Habla -
“The Community Speaks”

Themes

Cost, Provider Issues,
Bundling, Un-Adoption



Work stations used for computer training and health education by La Comunidad Habla at a community center in New Mexico

for a while and then lose it. Is that true? If so, why?

Azucena: Most times when I have it, it is because I can pay for it. Right now I'm over-billed. I didn't pay for it, and they cut it off. And mostly because of these hard times. That's what happens to a majority of people... It's out of our reach, a little too expensive, and because we don't know what wireless plan is best or anything like that. It was easy for me just to go with the first offer I got. It was too expensive, and they cut it off, and that's what happens to most of us, because we don't know what's out there, and the first person offering us something we end up buying it.



Azucena, a Community Media Health Worker with La Comunidad Habla

Interviewer: Who doesn't have the Internet and who couldn't pay the bill?

(Azucena, Celia, and Claudio raise hands)

Interviewer: So we're hearing a lot of stories of people having problems with bills and a lot of stories where you get service at one price and it turns out to be more...

Azucena: Yes, of course [Here the group explains again that none of them have the Internet at home. Claudio begins to talk about his cell phone.]

Claudio: I thought I had it [the Internet] on my cell phone, but I don't know how to use it.

Azucena: I do have the Internet [on my cell phone] but I don't know how to use it.

Claudio: It's hard to use.

Interviewer: Do most people you know have the Internet at home?

Azucena: The truth is, most of the people I know are always

asking me how to get connected to the Internet. I tell them to wait because I barely know as well. Then they ask where they get the best deal and all that, but because it's a minimum of \$35, it's expensive for people. Or they get it and disconnect it a month later.

Celia: I think that's why my daughter lost her connection; I know she needs it.

Azucena: We know it's something important these days, but it's also out of our economic reach—especially in these times.

Interviewer: Do you know anyone who doesn't want the Internet?

The group: No. Everyone wants to know, to learn...

Interviewer: Can you call companies like Cricket or Quest and talk to some one in Spanish about the Internet?

The Group: There are options the operators [on the phone speak Spanish]. In Cricket... Quest, also.

Interviewer: Is everything you need in Spanish? What about technical support?

Azucena: Well, I never understand them.

Veronica: Well, they say we can't help you but we'll send you a technician, but you don't understand them because of language [because the technician's don't speak Spanish]. So then it's the same as not having the option.

Interviewer: Does the operator translate?

Veronica: When they're [the technician] in my house it's nothing but hand signals.



Celia, a Community Media Health Worker

Interviewer: What's your name?

Veronica: Veronica. I came out of class late. I'm finishing my GED.

Interviewer: We asked everyone if they had Internet at home, cell phone, TV?

Veronica: I sometimes have the Internet. I don't pay for TV. I have Internet in my cell phone but it's very old and doesn't download.

Interviewer: Why is it that cell phones are more important than Internet at home?

Veronica: It's just that it's expensive, for me I often can't afford it. It's like a cable and Internet package. It's a lot if you don't pay cable, if you don't pay cable you can't have Internet and I don't have the money.

Maria: Sometimes when you get behind on bills for the month to turn the Internet back on they charge you twice as much.

Interviewer: What do you think an affordable price would be for the Internet?

Veronica: Zero. Well... You see I come from the capital of Mexico where one could use wireless. There's like an antenna for Wi-Fi in the center of the city. And everyone uses it. If there's a line here, why don't they make more of it? They have wireless at East Central Ministries. When we needed Internet we would come and sit outside, but they blocked it now. Probably so many people want to use it and there's not enough infrastructure.

Interviewer: Does anyone else want to talk about a price for what people can afford?



Veronica, a Community Media Health Worker

Group: The plan from Qwest that is \$30 per month ended up being around \$50.

Interviewer: Are there any connection fees?

Group: Yes.

Interviewer: How much?

Maria: About \$60 deposit and also you have to buy the modem at \$60.

Veronica: I rent it for \$5 per month.

Azucena: To me the little Cricket thing [wireless modem] is \$160, plus a deposit fee of \$100. The monthly charge, they said, is \$30, but because it's a package with the cell phone, I pay \$150/month. I can't get the Internet without the phone.

A BUNDLE OF EXPENSES

modem:	\$160
deposit	\$100
phone and internet package:	\$150
Total to start service	\$410

Interviewer: For that, do you get as much as you need or do you watch so you don't use too much?

Azucena: The Internet is unlimited as well as the phone. And what I'm saying is, I want the Internet without the phone, but I can't. Even if I don't use it I get charged the same. Same thing with cable, everything comes in a package.

Interviewer: A lot of people have the packages, the bundling. It seems like it's cheaper to buy two than to buy one. But then for a lot of people we've talked to—when they can't pay they lose everything.

Group: Yes because they can't pay it separately.

Interviewer: Do you think that that's a good idea, bad idea, or just different?

Veronica: Bad idea! I don't need cable, I don't watch much television. I don't want to pay cable. I would rather use the internet.

Interviewer: Are there any other recommendations that you'd have for the government? Things that would be helpful to have in this community?

Veronica: We have rights, even if we are poor, Hispanics, whites, whomever, we all have the right to access. And maybe in the upper class communities they might think it's not a problem for low-income communities, but it is a big problem.

Azucena: One of the recommendations I can give would be more [Internet] trainers for the community in general, not only for Hispanics, but also for all low-income communities, and for the resource centers as well. Another recommendation to the government would be to be careful with the agencies [communication companies], the promoters that are offering the Internet to our communities. We are already impoverished and we can't pay for a decent service, and then they come to offer us other promotions.

Veronica: They take advantage of us!

Azucena: Yeah that's right, like Veronica said, Comcast had a promotion of \$25 per month and now its \$93, Cricket also told me about a promotion of \$30 per month and I pay \$150 because I have to have phone service with the Internet as well.

Maria: It's not good being in those situations, so we have to be really careful about that. Instead of them [the communications providers] helping us they just take advantage of our needs.

FIELD REPORT EXCERPT #7 A COMPUTER INSTRUCTOR HELPS PEOPLE WITH SOCIAL SERVICE TASKS.

In this interview Candelario, a community intermediary in Albuquerque, describes his previous job in which he was paid minimum wage to do work that would have previously been done by civil servants.

Interviewer: Did people need help to fill out the food stamp applications or did they just need a place with computers and Internet where they could fill out the application themselves?

Candelario: My group of mothers all needed help filling out their food stamp applications, WIC and navigating other government websites like their citizenships etc. They needed computers and they needed help.

Interviewer: Why do you think people were coming to you for help?

Candelario: The community [in Florida] I was working in was predominantly low-income, with many below the poverty level. It was mostly Habitat for Humanity housing and affordable housing kept up through donations and government funding. There were about 100 families who used the center regularly and they mostly would come to me because of my Spanish fluency and because I was from that area. It was predominantly Haitian refugees and Mexican-Americans, and recently arrived Immigrants. I actually adapted much of my [computer class] curriculum with the parents to real world issues, and that included going through websites that they needed to navigate to fill out and stay updated with their status and for public assistance. I think that's why they would come to my classes regularly. They came because it was important for their public assistance, especially when the economy's toll on jobs hit that area hard.

Interview

January 14, 2010
Albuquerque, NM
La Comunidad Habla -
"The Community Speaks"

Themes

e-Government,
Cost Shifting



Candelario, a community intermediary in Albuquerque

FIELD REPORT EXCERPT #8 EVERYBODY DON'T HAVE COFFEE SHOPS

Philadelphia taxi driver Amendu became an enthusiastic computer user after receiving new media training at the Media Mobilizing Project in 2008. He recently signed up for broadband service at home and now has two computers. Since his training, Amendu has become involved in making and posting media about community and labor issues. These experiences have convinced him of the value of the Internet as a community-building tool, and have drawn him into local advocacy for broadband access.

Amendu: I was invited to a meeting. We had a whole network of people who was talking about this digital inclusion thing. And we were trying to figure out how come people don't have a lot of access and what kind of access people needed. And they was doing a map and a graph of the city showing that in certain parts of the city there is no coffee shops and stuff like that. And the people, without the libraries, they are cut off from it completely.

Interviewer: So how much access you can get easily depends on your neighborhood?

Amendu: Yeah, it's very important, your neighborhood. This guy came to the meeting, he was just like, well you know, people will just have coffee shops. I said: "Yeah, but in your neighborhood they got like 20 coffee shops, and my neighborhood has none. What about the people who have none?" We had to cool this conversation down. He's talking like we don't have to worry about libraries. We got coffee shops. Everybody don't have coffee shops. That just doesn't sound too feasible for a lot of people who are poor who just don't have access.

Focus Group

November 2, 2009
Philadelphia, PA

Themes

Availability, Accessibility,
Infrastructure



Amendu, a Philadelphia taxi driver who received training at the Media Mobilizing Project in Philadelphia

Endnotes

1. <http://www.nytimes.com/2008/02/10/opinion/10cox.html?ex=1360299600&en=9ef4be7de32e4b53&ei=5090&partner=rssuserland&emc=rss&pagewanted=all>

2. This low figure nonetheless represents a process of very rapid adoption over the past 2 to 3 years: “Broadband usage among adults ages 65 or older grew from 19% in May, 2008 to 30% in April, 2009” (Pew 2009: 3).

3. In some cases community representatives traveled to meet us. We met in Minneapolis with community intermediaries from Moorhead, Minnesota, and in Albuquerque with a group from Pajarito Mesa, New Mexico.

4. <http://familydollar.com/FAQ.aspx> (accessed February 1, 2010)

5. http://www.aboutmcdonalds.com/mcd/our_company/mcd_faq/employment.html (accessed February 1, 2010)

6. The libraries we visited typically had 60 minute time limits for computers, though some had 30 or even 15 minute limits during peak hours. These restrictions help librarians manage the high level of public demand.

7. <https://ereport.spps.org/campus/portal/stpaul.jsp?section=faq> (accessed February 1, 2010)

8. <http://www.boardbook.org/apps/bbv2/temp/92C9EE6A-C83A-06E4-4CD4590675E7FA78.pdf#page=11> (accessed February 1, 2010)

9. 9to5 Milwaukee kindly shared unpublished member interviews conducted in 2009, which documented member experiences with online e-government social services and Internet access.

10. The DTV (digital TV) transition came up frequently in these contexts and appears to have significantly raised the visibility of the FCC in low-income communities. A large portion of our non-adopter respondents rely on DTV converter boxes. Often, when we explained our study to respondents prior to interviews, the word “FCC” prompted accounts of the difficulties of the DTV transition. Although the voucher program was popular, we heard many complaints about decreases in the quality of reception and in the number of channels received. Several people reported that the boxes they received under the voucher program did not work or worked only erratically, or that they had not been able to get a voucher.

11. This \$800 bill was the highest reported to us, but it was by no means the only exorbitant bill we heard described. We did not examine bills and contracts to verify these stories, but the frequency of such stories warrants closer investigation.

Acknowledgements

We would like to give special thanks to the following individuals who contributed to this project.

Project Team

Dharma Dailey – Deep Tech
Amelia Bryne – Deep Tech
Alison Powell – Oxford Internet Institute
Joe Karaganis – SSRC
Jaewon Chung – SSRC
Rosten Woo – print design

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Sandra Ball-Rokeach
Leslie Regan Shade

National Partners

American Library Association
MAG-Net: Media Action Grassroots
Network

Community Partners

Amalia Deloney
Debra Kamecke
Bryan Mercer
Andrea Quijada
Steven Renderos
Candelario Vazquez
Todd Wolfson

Community Intermediaries & Associated Organizations

See Appendix 3

Others

Sargita Nayak, 9to5 Milwaukee
Native America Calling
Kate Fink
Stuart Heady
Phoebe Sullivan

Photography by Amelia Bryne,
Dharma Dailey, Amalia Deloney

RESEARCH TEAM

Dharma Dailey conducts public interest field research and analysis on community based communication projects, working with groups such as the Federal Communications Commission, Social Science Research Council, Ford Foundation, Media and Democracy Coalition, Media Justice Fund, and Prometheus Radio Project. Dharma's work has focused on the task of taking the issues of media reform beyond the beltway, she provides expert testimony on many topics, including smart radios, FCC licensing regimes, appropriate technology, and community media to audiences across North America. Dharma is currently co-Director of DeepTech.org, a research consultancy that investigates the impact of information and communication technologies on people and the planet.

Amelia Bryne is a researcher, media theorist and filmmaker, and co-Director of DeepTech.org. Trained in cultural anthropology and new media, she uses a hybrid of social research and media making techniques to approach her work. Amelia's media research and writing has focused on the human side of communications infrastructure and technology, including work on the digital divide, wireless internet infrastructure, and frameworks for developing broadband in ways that benefit communities. She has worked with public interest research groups including the Community Wireless Infrastructure Research Project, The Ethos Group, and eCommons.

Alison Powell is an SSHRC Postdoctoral Fellow at the Oxford Internet Institute. She completed a PhD in Communication Studies at Concordia University in 2008. She has researched the social impact of networks on communities since 2003, when she formed part of the Canadian Research Alliance on Community Innovation and Networking. Alison has studied community wireless networks in the United States, Canada and Western Europe and contributed to the Ethos Wireless Better Broadband Toolkit. Her current work examines the evolution of community innovation and its impact on the future of the

internet, and develops qualitative methods for policy research. Alison is committed to conducting empirical social research that helps to develop communication and information policy for the public good.

Joe Karaganis directs SSRC projects on Media, Technology, and Culture, including the ‘Necessary Knowledge for a Democratic Public Sphere’ Program and the ‘Culture, Creativity, and Information Technology’ Program. His research focuses on the relationship between digital convergence and cultural production, and has recently included work on media piracy, broadband adoption, and data policy. He is the editor of *Structures of Participation in Digital Culture* (2007) and of the forthcoming *Toward Detente in Media Piracy* (2010).

Jaewon Chung is a Program Assistant at the SSRC, where she has worked with the Media, Technology, and Culture Program and the American Human Development Project. She has a B.A. in Sociology from the University of Pennsylvania, with a focus on Asian American Studies and Women’s Studies. Her primary interests are in qualitative methods and the practical application of social science research.

Based in New York City, the **Social Science Research Council (SSRC)** is an independent, nonprofit organization devoted to promoting innovative work across the social sciences. Founded in 1923, the Council seeks, through a diverse range of projects, to build interdisciplinary and international networks, to mobilize new knowledge on important public issues, and to educate and train the next generation of researchers. The SSRC awards fellowships and grants, convenes workshops and conferences, sponsors scholarly and public exchanges, organizes summer training institutes, and produces a range of publications, both in print and online.

Appendix 1 – Notes on Method

Qualitative research is considered reliable and valid when it is transparent—readers and participants should understand how data is collected, how analytical decisions are made and results developed. This project has aimed for maximum transparency both between researchers and participants and in the analytical findings presented in this report. The report represents a synthesis of the coded findings but also the voices of the participants.

RESEARCH FRAMEWORK

The research design was informed by an ecological approach to communications technologies, which places home broadband use within the larger context of communication networks and resources in people’s lives, and in relation to the different competencies required to use them. We assumed that people have a variety of communication needs that they meet using different technologies and social relationships, linked in a larger information ecology (Nardi and O’Day 1996) or communicative ecology (Altheide 1995). The ecological approach takes into account the complex interplay of factors shaping communications technology use. Barriers to broadband adoption, for instance, can result from a combination of skill shortages (Hargittai, 2007). These shortages can include basic literacy as well as competency in using a computer. Yet, people with low skill often use broadband services by proxy, within personal, domestic practices that are contingent on individual capacity and the help and support of others (Bakardjieva 2003). Broadband adoption is thus not simply an “on” / “off” state, but a process that can be defined in different ways, and that can be investigated from different vantage points.

Additionally, we chose a community-based approach for the study that engaged the assistance and expertise of community intermediaries. Previous research on broadband

adoption suggests that community intermediaries are important in contextualizing broadband access—providing access, equipment, training and social and cultural support (Fiser, 2009; Strover et al 2007; Forlano 2008)—and in understanding and working with disadvantaged communities. In our study, these individuals provided insights related to their communities, and helped to connect us to them.

CORE THEMES

Our initial research design was based on exploring four themes as they related to broadband adoption. These themes were adapted from guidelines for key aspects of communications infrastructures as defined from a public interest perspective (Bryne Potter and Clement 2007) and assume that meaningful broadband adoption is based on physical, digital, human, and social resources (Warschauer 2003). The four themes are:

AVAILABILITY

- Is it available where I am?
- Is the service reliable?

UTILITY / VALUE

- What can I use it for?
- Is it valuable?

USABILITY

- How easy is it to use the tool to do what I want to accomplish?
- Are there physical barriers to using it?
- What skills are required?

AFFORDABILITY

- Can I afford it?
- Is the pricing clear?

Building off this initial analytical frame, the research team also asked participants to describe the drivers of broadband adoption. From this initial sampling, secondary themes emerged. For

instance: although the team expected broadband to be available in all urban areas, a theme quickly emerged regarding gaps in availability in urban neighborhoods, such as public housing complexes. The usability theme revealed the difficulty many people had in acquiring skills, and their reliance on the skills of others. The affordability theme revealed new information about the priority of broadband service among other communications services, as well as the challenges of bundling and the importance of clear bills. The utility/value theme revealed that there are significant pull and push drivers for broadband adoption that marginalized groups share with broadband adopters in general.

DATA ANALYSIS

We collected three types of data in this project: audio records of focus groups and interviews, summative notes from focus groups and site visits, and photographs and other records of observations.

Analysis of these materials began with the categorization of the materials based on the four core themes of accessibility, usability, affordability, and utility or value. Through the exploration of these themes, a list of drivers of as well as barriers to broadband access was generated.

Focus groups and interviews were directed at exploring these themes and drivers. During the focus groups, the field researchers presented the matrix of themes to the participants. This increased the transparency of the research process as participants could easily see what the goals of the research were and contribute to the development of the emergent secondary themes.

Respondent names have been changed when we did not receive permission to use their name in this report.

Appendix 2 – Community Partner Organizations

Community Partners helped us organize focus groups and meetings at the local level, acted in as informants about digital inclusion work in their communities, and put us in contact with local intermediaries and non-adopters who became part of our respondent pool.

American Library Association (ALA)

50 E. Huron

Chicago, IL 60611

Phone: 800.545.2433

<http://www.ala.org>

The mission of the ALA is “to provide leadership for the development, promotion, and improvement of library and information services and the profession of librarianship in order to enhance learning and ensure access to information for all.” In 1998 the ALA Council voted commitment to five Key Action Areas as guiding principles for directing the Association’s energies and resources: Diversity, Equity of Access, Education and Continuous Learning, Intellectual Freedom, and 21st Century Literacy.

Media Action Grassroots Network (MAG-Net)

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Oakland, CA 94612

510.444.0640

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<http://www.mag-net.org>

www.centerformediajustice.org

The Media Action Grassroots Network is a local-to-local advocacy network of grassroots social justice, media, and cultural organizations working together to shift power relations for social change through the critical use and transformation of media and communications systems. Digital inclusion activities include submitting comments to the FCC on BTOP, submitting comments to the FCC on Net Neutrality, leading the Campaign for Universal Broadband, organizing and leading the MAG-Net National Policy Day, and planning and leading the annual Media Justice Leadership Institute.

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Coordinator

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Local Partners

Main Street Project

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Minneapolis, MN 55404

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<http://www.mainstreetproject.org>

Main Street Project is a grassroots cultural-organizing, media justice, and economic development initiative working to help rural communities face today's realities with hope. We provide creative and practical tools to give rural residents of all ages, cultures, economic and immigration status the opportunity to more fully participate in all aspects of community life.

Steven Renderos

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Media Mobilizing Project (MMP)

<http://mediamobilizingproject.org/>

The Media Mobilizing Project (MMP) believes that media must be connected to the economic and social realities of everyday life. The right to free speech means little without the right to be heard. By sharing our own stories for the purposes of education, outreach, and organizing, we can disrupt the fragmentation of our issues and the isolation of our communities and build the networks necessary to address the root causes of the problems we face.

MMP facilitates the Philadelphia Digital Justice Coalition, which is comprised of over 30 organizations across the region sharing best practices and organizing for universal broadband. We also run digital inclusion trainings that are paired with media production and community journalism in low-income communities. In 2009 we trained over 200 individuals.

New Mexico Media Literacy Project (MLP)

6400 Wyoming Blvd. NE
Albuquerque, NM 87109
505.828.3129
nmmlp@nmmlp.org
<http://www.nmmlp.org>

The Media Literacy Project (MLP) cultivates critical thinking and activism in our media culture. We envision a healthy world through media justice. Since our inception, MLP has always provided workshops and trainings on media ownership, media policy, and media literacy. We worked extensively on the digital television transition in 2009, providing over 2,000 community members with information and support for their converter boxes. Our primary constituents for that campaign were Spanish-speaking, immigrant, low-income, and rural communities in New Mexico. MLP is currently working on a Universal Broadband and Network Neutrality campaign in New Mexico, stressing

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the need for our communities and families to be connected for personal, educational, economic, and health-related reasons and opportunities. MLP is a member of the Media Action Grassroots Network (MAG-Net).

Appendix 3 – Community Intermediaries

Community Intermediaries collaborated with Community Partners to facilitate our work locally and acted as informants. These included individuals in many types of community leadership roles, such as community center staff and volunteers, librarians, AmeriCorps workers, community organizers, and many others. In total 74 intermediaries contributed to the research. Individuals and organizations that wished to be listed appear below.

ALBUQUERQUE/SANTA FE, NM

Young Women United

<http://www.youngwomenunited.org> (under construction)

Adriann Barboa

Director

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Albuquerque/Bernalillo County Library System

<http://www.cabq.gov/library>

The Albuquerque/Bernalillo County Library System provides 258 public access computers at 17 locations throughout Albuquerque and Bernalillo County. Enabling customers to access the information and resources they need is a priority for our staff.

Julia Clarke

Director

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South Valley Male Involvement Project

New Mexico Department of Health

http://www.health.state.nm.us/phd/fp/male_involvement.htm

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Isleta Pueblo Library

505.869.8119

<http://www.isletapueblo.com/library2.html>

The Isleta Pueblo Library provides materials and services to help community residents obtain information meeting their personal, educational, and professional needs. Special emphasis is placed on supplying adults with current reading materials, providing reference services to students (at all academic levels) and other information seekers, and making facilities available for local individuals, organizations, and agencies to do community work. The library serves as a learning and activities center for all residents of Isleta Pueblo.

1st-Mile Institute

www.1st-Mile.com

The 1st-Mile Institute has been established to provide broadband networked society research, education, and demonstration project services, with a dedicated focus on economic quality-of-life-enhancing networking initiatives for the State, the communities, and the people of New Mexico. The 1st-Mile Institute (with the NM State Library) is among the nation's first 18 ARRA stimulus grant awardees through the NTIA Sustainable Broadband Adoption program. Funds are to be used for the "Info/Eco" 2010: New Mexico Broadband Conference & National Open Broadband Economics Summit.

Richard Lowenberg

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Albuquerque Partnership

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La Comunidad Habla

505.232.8575

http://www.saludmanual.org/about_us2.html

La Comunidad Habla (LCH) community leaders are immigrant women from Mexico who are trained in health communication and outreach, both to create educational media and to train their fellow community members to use the media and learn about health issues and disparities. Most recently, the group has worked on projects related to health access and the improvement of the neighborhood environment. LCH partners with schools, community centers, public health centers, the Department of Health, and many non-profit groups to reach out to immigrant and non-immigrant populations and connect them to health resources, technology learning opportunities, and educational information.

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Sonia Medina

Community Media Health Worker
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Veronica Salazar

Community Media Health Worker
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New Mexico State Library

505.476.9700

<http://www.nmstatelibrary.org/>

The New Mexico State Library's mission is to provide leadership that empowers libraries to support the educational, economic, and health goals of their communities. The State Library also delivers some direct library and information services to those who do not have access to local public libraries. The State Library supports research, life-long learning, and cultural enrichment for all New Mexicans.

Quote... Unquote, Inc.

<http://quote-unquote.org>

QUQ's mission is to enhance and facilitate communication by, for, and among the diverse peoples of Albuquerque, to provide the means to train people, and to promote balanced community programming by developing and promoting the concept of public access to existing and future communications media, maintaining and operating one or more media access centers, and operating Community Cable Channel 27 and other channels in the future. QUQ's digital inclusion work includes partnering with schools and community and grassroots groups and providing them the tools to access and make their own media.

GREENE COUNTY, NY

Cairo Public Library

Cairo, NY

<http://cairo.lib.ny.us>

Debra Kamecke

Director

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Catskill Public Library

Catskill, NY

<http://catskill.lib.ny.us>

D.R. Evarts Public Library

Athens, NY

<http://evarts.athens.lib.ny.us>

Greenville Public Library

Greenville, NY

<http://greenville.lib.ny.us>

Heermance Memorial Library

Coxsackie, NY

<http://www.hml.lib.ny.us>

MINNEAPOLIS/ST. PAUL, MN

Alliance for Metropolitan Stability

<http://www.metrostability.org>

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Centro Cultural de Fargo-Moorhead

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People Escaping Poverty Project

<http://www.pepp.org>

Octavio Gomez

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Centro Cultural de Fargo-Moorhead

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Minnesota Center for Neighborhood Organizing

<http://www.mcno.umn.edu>

Margaret Kaplan

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Lao Assistance Center of Minnesota

www.laocenter.org

The mission of the Lao Assistance Center of Minnesota (LACM) is to increase the capacity of the Lao American population in Minnesota by responding to community-identified needs through developing programs and services that will promote the well-being of families and children while retaining their cultural heritage.

Bryan Thao Worra

Special Administrative Support

Lao Assistance Center

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Kinnary Pimpadubsee

Chemical Health Youth Coordinator, Lao

Assistance Center

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**St. Paul Public Library/
Rondo Community Outreach Library**

www.sppl.org

St. Paul Public Library/Rondo Community Outreach Library is an urban public library with a central library, 12 branches, and a bookmobile. The library promotes e-democracy and provides public Internet, Wi-Fi, Electronic Classroom classes, and assistance with AARP electronic tax filing.

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Alliance of the Streets

<http://www.ststephensmpls.org/alliance.htm>

Mike Menner
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Hope Community Center

<http://www.hope-community.org>

Chaka Mkali
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Minneapolis Urban League

<http://www.mul.org>

Cheryl Morgan-Spencer
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Waite House, Pillsbury United Communities

<http://puc-mn.org>

Pillsbury United Communities (PUC) is a century-old non-profit organization dedicated to addressing the root causes of poverty in Minneapolis, MN. In keeping with its mission of creating choice, change, and connection, PUC operates 4 community centers, a community theater group, and several smaller projects. Services and programs are offered in the following strategic areas: youth services, meeting essential needs, adult education and employment, promoting health and wellness, and community engagement and volunteerism.

The Computers 4 All project, in partnership with PACE Inc., provides assistive technology options at 2 of PUC's community centers. We provide computer access for adult and youth job

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development programs, specialized computer classes for new immigrants, and computer distribution projects, focusing on providing computers and training to underserved community members. PUC is involved in Laptops for Learning, a computer distribution and education project focused on inner-city high school students planning for higher education, as well as a partnership with the Community Technology Empowerment Project, which provides Americorps members working on digital inclusion issues in PUC's community centers. We are a member of the Twin Cities Technology Literacy Collaborative.

People Escaping Poverty Project

<http://www.pepp.org>

Duke Schempp

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Lyndale Neighborhood Association

www.lyndale.org

The Lyndale Neighborhood Association is a diverse community-driven organization that brings people together to work on common issues and opportunities to ensure all community members have the opportunity to live, work, and play in a safe, vibrant, and sustainable community.

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Somali Action Alliance

www.somaliactionalliance.org

Hashi Shafi

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Twin Cities Community Voice Mail

www.tccvm.org

Twin Cities Community Voice Mail (TCCVM) provides free voicemail to homeless and very-low-income people. We serve about 5,000 people annually and have provided 53,000 voicemail numbers since we began. We also do organizing of people who use voicemail. The three groups we have organized work on action related to issues of concern to them. We advocate for access to communications technology for homeless and very-low-income people, including cell phones, Internet, and computer access.

TCCVM did widespread education and outreach regarding access to TV when DTV started. Our work also involves addressing ways that very-low-income and homeless people can have access to computers and the Internet, monitoring efforts to provide and advocating for cell phones for low-income people, and developing demonstration projects that provide cell phones to low-income and homeless people.

Hmong Organizing Project

Minnesota Center for Neighborhood Organizing
[http://www.mcno.umn.edu/
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PHILADELPHIA, PA

Generations on Line

www.generationsonline.org

Generations on Line provides Web-based software and materials that simplify the Internet and e-mail for seniors. On-screen step-by-step directions guide older adults in using the Internet and creating e-mail, often for the first time in their lives. It is free to seniors through places where they live and frequent, such as public libraries, senior centers, and nursing homes, which can obtain the program for a small fee. We are now in 1500 facilities throughout the country. We have enabled more than 35,000 older Americans and Canadians to use the Internet, provided more than 10,000 seniors with individual e-mail accounts and tutorials, and created special senior-friendly websites for certain government programs, such as Medicare.

Tobey Dichter

CEO and Founder

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Free Library of Philadelphia

<http://www.library.phila.gov>

The mission of the Free Library of Philadelphia is to provide to all segments of Philadelphia's diverse population a comprehensive collection of recorded knowledge, ideas, artistic expression, and information in a variety of media, including current technology; to assure ease of access to these materials; and to provide programs to stimulate the awareness and use of these resources. The Free Library will create a welcoming and inspiring environment for learning and will promote individual enlightenment, community enrichment, and economic vitality throughout the region.

Lynn Williamson

Free Library of Philadelphia

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williamsonl@freelibrary.org

Philadelphia FIGHT

www.fight.org

www.aidslibrary.org

www.critpath.org

Philadelphia FIGHT is a comprehensive AIDS service organization. FIGHT's mission is to provide state-of-the-art, culturally competent HIV primary care and access to clinical research, along with consumer education and a suite of social services to people living with HIV and those who are at high risk. Our goal and hope is to end the AIDS epidemic within the lifetime of those currently living with HIV, and providing access to life-saving health information on the Internet has always been a key component in all FIGHT's programs toward ending the epidemic.

For over 10 years, Philadelphia FIGHT's programs, the AIDS Library, and Critical Path have focused on addressing the disparities in access to the Internet in Philadelphia. The AIDS Library, founded in 1987, is a public access lending library devoted to providing accurate, unbiased, and up-to-date information for people living with HIV in the Philadelphia region, and its Computer Classroom is a public access space that offers computer classes on how to use the computer, how to find HIV and other health information through the Internet, and how to use technology for other life skills, such as job hunting or applying for benefits. The Critical Path Project, founded in 1989, for many years offered free dial-up Internet access to those who were the least likely to have it and currently hosts free e-mail and electronic list accounts and website hosting.

Juliet Fink

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Philadelphia Digital Justice Campaign

<http://www.facebook.com/home.php#/group.php?gid=100462975571&ref=ts>

The Philadelphia Digital Justice Campaign was created in Fall 2008 to advocate for affordable and reliable Internet access in the region. The campaign represents about 30 community organizations, technology start-ups, and media reform groups. The group is working with policymakers and advocacy organizations to raise the broadband penetration rates in Philadelphia—where about half of all households lack high-speed Internet access.

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