PolicyLink

Bridging the Organizational Divide: **Toward a Comprehensive Approach to the Digital Divide**

A PolicyLink Report

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PolicyLink is a national nonprofit, research, communications, capacity building, and advocacy organization advancing a new generation of policies to achieve economic and social equity and build strong organized communities. Our work is guided by the wisdom, voice, and experience of local practitioners developing innovative solutions to our nation's most pressing problems. Connecting constituencies to promising practices and policy creation that builds lasting results and systems change, PolicyLink projects promote equitable development and reverse the unfair effects of urban sprawl, secure dollars for community reinvestment, foster community participation in health care programs, train the next generation of community builders, and promote community-centered policing.

Preface

Ours is a society and economy increasingly reliant on information technology. PolicyLink has worked to understand the impact these technological transformations have on low-income communities, with two key questions guiding our efforts. First, how might existing and emerging technologies be used as a tool to support community-building efforts? Second, can we draw from the decades of experience in the community-building field to inform current efforts to bridge the digital divide, the newest manifestation of inequity?

The answers to these questions lie at the intersection between the community building and community technology movements, one of the most inspiring and creative places in the social equity field. In this space lies the potential of linking the legacy and power of the social justice field to the promise of cutting-edge technological innovations. During the last year, we have been awed by the passion and enthusiasm of pioneer community organizations, community technology centers (CTCs), and technical assistance groups, each of whom is using information technology to enhance community building efforts.

These community leaders are our national leaders. This report is a reflection of the field, and an effort to push it forward to new places with greater synergy and policy impact. We would like to thank these leaders and the many practitioners from around the country that kindly shared their time and insights with us. Their innovations are the foundation for a future community technology policy agenda; one that includes: (1) promotion of universal access and training; (2) technology capacity building for community based organizations; (3) creation of community-driven content; and (4) development of IT applications.

Special thanks go to the report's authors Josh Kirschenbaum and Radhika Kunamneni and the technology team at PolicyLink. Special acknowledgement goes to Vice President Judith Bell for her keen insight, strong leadership and tireless support of this work.

Angela Glover Blackwell
President

Introduction and Overview

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Information technology (IT) is rapidly transforming our economy and society. It is changing how we live and work. IT has the ability to generate great wealth and prosperity, but it can also exacerbate economic disparity and magnify existing inequities. Many low-income communities are isolated from recent technological advances and do not have access to personal computers, the Internet, and the interactions and opportunities these technologies provide. This experience currently defines the so-called "digital divide"- that space between those who do and those who do not have access to information technology.

Policymakers, community activists, and IT industry leaders quickly responded to the digital divide by creating policies and programs that provide low-income residents with training and access to information technologies. But, training and access leave a key policy question unanswered: "Technology access for what purpose?" IT is a powerful tool that can be used to promote equity and strengthen community institutions and infrastructure. PolicyLink believes the digital divide policy dialogue must go beyond the current access-centered paradigm. The next steps for IT policy and practice must support the creation of local content[1] and build the technology capacity of community based organizations (CBOs).

Local content and technology capacity are closely related. CBOs are rich storehouses of local information, but they frequently lack the technology capacity to either use this valuable resource themselves or to share it with other community-

serving organizations. PolicyLink refers to this lack of technology capacity as the "organizational divide" and sees it as a key component of the digital divide. Building the technology capacity of CBOs enables them to generate relevant content online, build new applications, and to use IT to help advance their missions and address pressing social problems. We believe that as digital divide policy also seeks to bridge the organizational divide, we will be building a more equitable society.

To support new policies for online content development and building technology capacity, PolicyLink has identified an exemplary set of CBOs that are using IT to support their work and extend their impact. These examples fall into six categories:

1) Advocacy and online organizing
2) Community information clearinghouse
3) Networking and online communities
4) Innovations in service delivery
5) Interactive database development
6) Community mapping

This discussion of innovative uses of information technology by community based organizations serves as a foundation for developing a comprehensive policy agenda for bridging the digital divide. That policy agenda should support four integrated components: technology access and training for individuals, technology capacity building for community based organizations, the expansion of relevant local content and the development of new applications.

This paper is organized in four sections:
1) background on the digital divide as context for understanding the organizational divide,
2) challenges facing the use of technology by the nonprofit sector and the available resources to build IT capacity,
3) promising practices using relevant content and applications, and
4) a framework for developing a comprehensive policy agenda for addressing the digital divide.

Moving Beyond Access: Addressing the Organizational Divide

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After almost a decade of policies and resources dedicated to bridging the digital divide, much has been accomplished and much remains to be done. A robust network of thousands of community technology centers has been established as a result of programs and policies initiated by federal, state and local governments and philanthropy. The nation has made great strides in providing the physical components (e.g., hardware, software, connectivity) for individual IT access. For example, Internet access for households increased from 20% in 1997 to 40% in 2000, according to the Department of Commerce's *Falling Through the Net* series, which has documented this move towards digital inclusion.[2]

In the early 1990s, as IT became commonplace, the notion of a digital divide became more of a reality for low-income communities that lacked access to training, computers, and the Internet. In response, policymakers set the bar high for the nation to achieve universal access to new technologies. This goal quickly framed the digital divide as an issue primarily focused on individuals as technology "haves" or "have-nots."

While this framing addressed the issue of widespread lack of access, it also inspired a relatively narrow set of solutions that, to date, have failed to address the multifaceted aspects of the digital divide, such as the need for relevant content, information sharing and strengthening the community-based infrastructure with technology. Moving away from treating the digital divide as solely an issue of technology access, opens up the possibilities for using IT's power as a tool to strengthen low-income communities.

In the past, social movements have worked to bridge the historic divides—of income, race and education—and to promote a more equitable and democratic society. Often, community based organizations, residents, activists, organizers, and even social service providers have spearheaded these efforts creating a vibrant infrastructure[3] in many underserved, low-income, low-wealth communities. If one goal of bridging the digital divide is to strengthen these neighborhoods using the power of IT, it is critical to understand the importance of this existing infrastructure and its connection to local constituents. Community organizations are the gatekeepers of local information and are therefore the appropriate actors for creating local content that is relevant, useful and available online. These organizations and their resident constituency bases have the wisdom, knowledge and experience to use IT as a tool for building social and economic equity, and strong organized communities.

Although these local community based organizations are repositories of information, they are technology deficient. The robust network of community technology centers, with its mission of access, evolved somewhat separately from the community infrastructure. So, while most of the resources for this network have been deployed locally to bridge the digital divide they have not been used to support building CBOs' technology capacity. Building this kind of capacity will be challenging, since many of these organizations have been, historically, the last to benefit from technological innovations. They have also struggled to find ways to use technology as a tool to advance their missions. Yet, addressing this "organizational divide"—or the lack of technology capacity in the community based nonprofit sector—is the first step in engaging community based organizations in using technology to advance their missions. Once these organizations have the technical capacity, they can produce community based content, participate in the new economy, and develop new policies to support other organizations' efforts to use IT as part of a comprehensive equity-building strategy.

As we develop policies and programs to bridge the digital divide we must insure that these are linked to broader strategies for social change in two ways. First, we must allow the wisdom and experience of the existing community infrastructure to inform our work. Second, we must focus our efforts on using emerging technologies as a tool to strengthen and support the community infrastructure.

Challenges and Opportunities Facing Community Based Organizations

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Nonprofit Organizations and Technology

As the digital divide gained national attention through the late 1990s, the nonprofit sector recognized that it was experiencing a technology divide of its own. This was especially true for nonprofit community based organizations, since many lacked the resources or the capacity to maintain computer systems and generate local content. This organizational divide in the nonprofit sector prompted several technology technical assistance (TA) providers to create the National Strategy for Nonprofit Technology (NSNT), a leadership network of nonprofit staff members, funders, and TA providers. In 1998, determined to address the organizational divide from a national perspective, NSNT developed a blueprint of how the nonprofit sector could use information technology more effectively and creatively. The blueprint also highlighted the challenges facing the sector in the late 1990s:

…[that] most nonprofits are hesitant to use technology and are ill-informed about the impact it could have on their work, that funders are reluctant to invest in efforts that seem unrelated to program delivery, and that technology assistance providers are ill-equipped to provide the kind and scale of support necessary to transform the nonprofit sector's use of technology. Also, research indicates that there are disparities in nonprofits' access to and use of technology – namely, that many nonprofits in low-income communities and in communities of color are underserved with respect to technology acquisition and use.[4]

The report suggests that the nonprofit sector has been penalized in a number of ways for failing to adopt emerging technological innovations, including: 1) the inability to meet potential increases in service demand; 2) the loss of funding due to the inability to demonstrate program outcomes; 3) the inability to compete with for-profit enterprises; and 4) the inability to communicate effectively with their constituencies. A fifth penalty, identified by Trabian Shorters of Technology Works for Good in his report, *A Case For: Technology Works* might be the greatest consequence for not using these new technologies—the increased isolation or distancing of nonprofit organizations from the new economy.[5]

Shorters also documented the sector's ambivalence towards embracing technology and developed a classification system for understanding "technology cultures" in nonprofit organizations. He indicated that regardless of mission, budget, or size, and organization's relationship to information technology can be classified into one of four distinct categories:

- Unnecessary: Failing to see the benefits of technology and avoiding it as much as possible. No Internet access and limited computer use.
- Necessary Evil: Having a limited use of technology. Limited Internet access and limited computer use.
- Necessary Good: Viewing technology as a necessary part of their work. Internet access and computer use.
- Strategic Advantage: Believing that the effective use of technology will give them strategic advantage. Using both the Internet and computers as strategic tools.[6]

According to Shorters, most community based organizations fall in the "Necessary Evil" category and are far from making technology a part of their strategic tool kit. His observation is supported by a 1999 study by Wired for Good, a San José, California-based nonprofit research group, in which Silicon Valley nonprofits were asked to name the three most frequently used methods of communication. The top three responses were the telephone (77%), in-person meetings (70%), and hard-copy memos (45%). E-mail was near the bottom of the list at 28 percent and sharing files across a computer network ranked even lower at 18 percent.[7] CBOs are chronically understaffed and under-resourced and most have not attempted to generate funds or allocate the staff time necessary to integrate technology into their work despite the clear potential benefits. As a result, an IT-capacity gap has developed in the nonprofit sector.

Three Avenues For Building Technology Capacity

Although the community based nonprofit sector faces significant challenges in using IT as a tool to further its missions, a few innovative nonprofits are important exceptions. Those organizations that recognize the value of acquiring IT capacity have done so in one or more of the following ways:

1) working with technical assistance providers,
2) partnering with community technology centers, or
3) generating entrepreneurial initiatives of their own.

Avenue I: Technical Assistance Providers

In response to the nonprofit sector's lack of IT capacity, a number of organizations have arisen to provide technical assistance. These nonprofit TA providers fall into three categories—traditional technical assistance providers; IT-focused TA providers; and institutions of higher education.

Traditional, Nonprofit TA Providers. An increasing number of traditional nonprofit TA providers have added information technology services to the menu of supports they offer to community based organizations. For example, CompassPoint Nonprofit Services, in the San Francisco Bay Area, has provided management and training classes to the community sector for decades. In light of the growing need for IT-specific assistance, CompassPoint also provides technology services and co-sponsors an annual conference on nonprofits and technology. When CompassPoint and other traditional nonprofit TA providers move into the IT arena, they often bring a deep understanding of the needs and challenges of local communities that allows them to leverage this expertise to effectively offer technology services.

IT–Specific TA Providers. The shift to an information-driven economy has generated a new type of technical assistance provider — one focused explicitly on supporting the community based nonprofit sector's use of technology. NPower and CompuMentor (see box on following page) are two examples of this type of organization. These organizations provide a vital service to the community based nonprofit sector.

There are two levels to this technical assistance infrastructure—national and local. National groups tend to play research and clearinghouse roles, provide direct service and make occasional referrals to local service providers that can offer direct assistance. CompuMentor is included in this list along with the National Council of Nonprofit Organizations, the Benton Foundation, the Rockefeller Technology Project, the Progressive Technology Project, OMB Watch's Nonprofits' Policy and Technology Project, and the National Strategy for Nonprofit Technology. In some cases, these organizations (the Benton Foundation and OMB Watch) support public policy campaigns. Local groups, on the other hand, provide direct assistance by dispatching staff to organizations, linking technicians, often known as circuit riders, to organizations and offering technology courses for the staffs of nonprofits. Some examples include CompassPoint in San Francisco, NPower in Seattle and New York City, and Technology Works for Good in Washington, DC.

Institutions of Higher Education. Universities and community colleges, which are resource rich in terms of hardware, software, and human capital, serve in the increasingly important capacity of TA provider for nonprofit organizations. Many provide an important community service through assistance to nonprofit organizations and these partnerships resonate with the mandate of many institutions of higher learning to contribute to the communities in which they are located.

Technology TA Providers—
National and Local Examples

CompuMentor
www.compumentor.org
CompuMentor, based in San Francisco, California, is one of the largest and oldest national nonprofit computer assistance organizations. Since 1987, CompuMentor has served over 23,000 nonprofits and schools with a range of person-to-person computer services. These include matching skilled volunteers with schools and nonprofits, technology planning and consulting. The organization recently launched TechSoup.org, a one-stop information resource for nonprofit technology issues. TechSoup provides information on hardware, finding the right software application, guidelines for selecting an appropriate database, planning your organization's network, and how to get funding.

NPower
www.npower.org
NPower is a regional nonprofit TA provider serving the Greater Puget Sound area and New York City. The organization operates on a membership basis with dues calculated on a sliding scale, depending on an agency's budget. Services include: technology assessment and planning, technical assistance for application development, basic training classes for staff, volunteer matching program, resource library and community events. NPower partners with regional and national TA providers.

Avenue II:
Community Technology Centers—
An Emerging Source of Technical Assistance

The nation's access-centered technology strategy has fostered the development of a powerful new type of institution in low-income neighborhoods—the community technology center (CTC). Present in almost every low-income community across the country, community technology centers provide free or low-cost access to and training on computers and the Internet. With missions often focused on an equitable diffusion of technology in low-income communities, CTCs tend to function independently of the existing community infrastructure. In these same communities, traditional community based organizations have tackled social and economic equity without the help of technology. Working in partnership, CTCs and CBOs, have the experience and wisdom to use technology as a tool to advance an equity agenda.

In a few instances, mature CTCs are connected to larger neighborhood revitalization efforts and provide capacity building technical assistance to community based organizations. Some CTCs have also become leaders of community building activities spearheading projects around government and democracy, health and human services, educational services, community involvement, quality-of-life information, economic development, and job training. However, many of the connections between CBOs and CTCs have been developed in the absence of policy directed at making these connections. Over the last five years, the emerging connection between the community building and community technology movements has demonstrated that CTCs could play an important role in providing technology TA to help strengthen the existing community infrastructure.

Avenue III:
Entrepreneurial, Community-Driven Efforts

The third avenue through which CBOs obtain technology capacity is through their own entrepreneurial efforts. Some CBOs have recognized the value of IT and have been successful in acquiring the necessary resources to integrate it into their work. These bootstrap efforts are often lead by a charismatic and technology-committed leader, and supported through the acquisition of public (e.g., Department of Commerce's Technology Opportunities Program) or private foundation dollars earmarked for capacity building and content development.

For the most part, technology TA has been made available on a "build-it-and-they-will-come" basis. Community based nonprofits have been expected to seek out TA providers and request the necessary services. But, many nonprofit organizations have not been exposed to the recent innovations or the potential of the Internet and have not used IT as a tool to enhance their work. In fact, in many cases technology is often considered as separate from or in competition with other program tasks rather than as a tool that can support all of the organization's work. For example, many nonprofits are not aware of CTCs in their own neighborhoods or TA providers at either the local or national levels. This isolation may cause organizations to acquire the wrong technology and training which in turn might lead to further frustration and greater reluctance to use technology as a tool. As the technology TA field matures, more outreach and education is needed to enable community based nonprofits to learn about the benefits of information technologies.

Promising Practices: Making Use of Relevant Content and Applications

4

In recent years, innovative examples of community based organizations using technology as a strategic tool to support their work have begun to surface. These organizations have overcome a range of challenges and employed a number of mechanisms to support their efforts to incorporate technology into their programmatic activities. Six primary activities that community based organizations support through the use of information technologies are summarized on the following page (see box on page 15).

These six activities have been separated in order to facilitate analysis even though they often overlap. For example, the information gathered through a community mapping process may be an important tool in an advocacy campaign, or a community information clearinghouse might be powered by an interactive database to provide information to its constituents. In addition, CBOs tend to adopt simpler applications that lie closest to their core work — such as databases to support evaluation and outreach, and listservs to enhance advocacy — first, then taking on more advanced applications such as mapping after building confidence and witnessing the power and potential of IT.

How Community Based Organizations Use IT Tools

1

Advocacy/Online Organizing. Digital technologies are effective tools to support and enhance advocacy and organizing efforts. E-mail listservs, facilitated discussion lists, online action alerts, and other IT tools, help non-profit organizations communicate with their constituencies, policymakers, and other key stakeholders. Online advocacy efforts are most successful when they promote or build upon offline activities.

2

Community Information Clearinghouse. The World Wide Web is an effective vehicle for gathering and disseminating information. Community based organizations are using the Internet to develop and share localized and issue specific information with their constituents or other stakeholders interested in their work.

3

Networking and Online Communities. One of the most effective uses of IT tools is to facilitate coordination of activities, improve communication and build or strengthen relationships. Community based organizations use a variety of resources, such as e-mail, websites, and Virtual Private Networks (VPN) to collaborate with other groups and their constituencies. In the process they are building online communities that enhance and support their offline networks.

4

Innovations in Service Delivery. Just as information technologies are leading to productivity gains in the private sector, IT tools can be applied in the nonprofit sector to improve the delivery of social services. For example, the strategic use of technology can streamline service delivery, help social service organizations serve a larger number of constituents, and facilitate collaboration across organizations.

5

Interactive Database Development. The Internet is moving more and more towards interactivity, with complex back-end databases allowing users to create individual online experiences by accessing information that is customized to their needs. Community groups use interactive databases to help their constituencies find employment, community assets, and other local information.

6

Community Mapping. Geographic Information Systems (GIS) is a computer system that assembles, stores, manipulates, and displays geographically referenced information. GIS, and other information systems, help identify and organize data according to location. These IT tools are being used by nonprofit organizations for public policy development, neighborhood planning, advocacy, and research.

Following is a discussion of how several exemplary community based organizations use technology to strengthen their work and accomplish their missions. These local successes serve as examples of promising practices that other organizations might use as models.

Innovative Community Based Organizations Using Information Technology

Type of Activity	Organization	Issue Area	IT Tools
Advocacy/ Online Organizing	Welfare Law Center, Community Voices Heard, Make The Road By Walking (New York, NY)	Welfare reform, promoting participation by low-income communities	Website, listservs , Internet, training,technical assistance
	1000 Friends of Oregon (State of Oregon)	Sprawl and other environmental issues	Listservs, e-mail, other electronic tools
Information Clearinghouse	CDC Network (Cleveland, OH)	Community development, affordable housing	Internet, e-mail, online resource bank, other e-business tools
Online Communities/ Networking	Grace Hill (St. Louis, MO)	Building social capital, neighborhood revitalization	Web-based Time Dollar Exchange system, computer mentoring, online resource bank
	Technology Access Foundation (Seattle, WA)	Organizational development for youth- serving agencies	Virtual Private Network (VPN)
Innovations in Service Delivery	Sexual Assault Crisis Center (Androscoggin, ME)	Support services for survivors of sexual violence, advocacy	Online support group (similar to a "chat room")
Interactive Database Development	East Bay Works (Oakland, CA)	Employment and training services	Web-based data systems, online job training resource bank, individualized email accounts
	Cabrini Connections (Chicago, IL)	Tutoring and mentoring	Web-based data systems, GIS technologies, resource bank mentoring services and best practices
Community Mapping	Neighborhood Knowledge Los Angeles (Los Angeles, CA)	Neighborhood revitalization, advocacy, public policy	Interactive Electronic Monitoring System, GIS, training for residents
	National Neighborhood Indicators Project, Boston Community Building Network (Boston, MA)	Neighborhood development, community building	Various information systems, including GIS, resource banks, interactive databases

Advocacy and Online Organizing

For decades the fields of advocacy and community organizing have worked to promote equity, encourage civic engagement, and build strong, empowered communities. One of their primary strategies for achieving these goals is the creation of institutions and mechanisms that allow those who have been excluded from decision-making processes to advocate for the redistribution of power and promote greater civic participation.[8] The Internet and other emerging communication technologies have the potential to facilitate that process by:

- Allowing a greater number of people to access and exchange information about their communities and public policies;
- Achieving a larger scale and efficiency to organizing efforts; and
- Building affinity relationships around issue areas across geographic spaces.

Below are two examples of organizing efforts that demonstrate the role IT can play in this process—one focused on welfare reform, the other on combating sprawl legislation.

The *Welfare Law Center's Low-Income Networking and Communication* (LINC) project was established in 1998 to support the capacity of grassroots organizations to use technology to enhance their advocacy work. The Welfare Law Center, a national law and policy organization founded in 1965, recognized that information technology could help bring low-income groups into the public debate over welfare policies. The LINC project uses technology to build and strengthen a welfare reform advocacy movement by: (1) building a communications infrastructure that allows advocates to collaborate and share information; and (2) creating a technical assistance strategy that increases the capacity of local low-income groups to mount their own organizing efforts.

The two components of LINC's communications infrastructure include: (1) a website that serves as an information clearinghouse for grassroots welfare reform organizations; and (2) a listserv that promotes dialogue and mutual mentoring for organizers, while also serving as a vehicle for coordinating national campaigns. Both the Welfare Law Center's familiarity with the issue and its network of relationships with grassroots organizations have placed it in a unique position to organize the field nationally using information technology.

At the same time, the Welfare Law Center's LINC project supports local organizing efforts in New York City by building the technical capacity of grassroots organizations. One example is *Community Voices Heard* (CVH), a group of predominantly low-income women on welfare, who are working together to make improvements in their communities, and advance the political, economic and social rights of other welfare recipients and low-wage workers. Through public and political education, community and legislative organizing, leadership development and training, CVH works to ensure that the voice of welfare recipients informs the welfare reform debate.

With LINC's assistance, CVH engages in online activities to augment their offline efforts to promote equity. For example, CVH built a Worker's Computer Center where community members can learn about the Internet and how to use it for research and organizing. Online sample letters, legislative contact information, and instructions on how to download these materials, have greatly facilitated their participation in the political process. Most recently, CVH has matched its membership database with GIS mapping software to identify members' political districts. By dividing its membership into political constituencies based on the district in which they live, CVH can quickly identify and mobilize members to meet with state legislators and ensure that their voices are represented in public policy conversations.

The Brooklyn-based *Make the Road By Walking* has also received technical assistance from the LINC project. They have posted a complaint form on their website that welfare applicants, recipients and advocates can download to report mistreatment by local welfare agencies. *Make the Road by Walking* then uses these complaints in their advocacy campaign to secure fair treatment of public benefits claimants.

IT tools are also supporting the advocacy efforts of *1000 Friends of Oregon*. This nonprofit organization founded in 1975, works to safeguard Oregon's quality-of-life through the conservation of farm and forest lands, protection of natural and historic resources, and the promotion of livable communities by combining advocacy, education and research. On the advocacy front its efforts include: defending and improving the state's land-use laws and regulations before the state legislature and state agencies; developing and advancing new policies and programs that help Oregonians manage growth at the state, regional and local levels; and litigation to establish legal precedents and to enforce existing laws.

1000 Friends of Oregon has used digital technologies in a variety of ways to support its efforts. Late in Oregon's 1997 legislative session, a bill was resuscitated that would have allowed for the development of Smith Rock, a recreation area. This happened when there was less than an hour notice before legislative hearings. Recognizing their need to mobilize quickly and aware that mail, a phone bank, or door-to-door organizing and other traditional organizing tools would be too slow, *1000 Friends of Oregon* enlisted the help of *ONE/Northwest*, to develop an Internet organizing strategy. *ONE/Northwest,* a Seattle-based nonprofit organization that provides technology TA to conservation activists in the Northwest, used their extensive e-mail list and other electronic networking activities to mobilize a legislative lobbying campaign that thwarted the bill. *1000 Friends of Oregon's* intimate knowledge of local legislative issues and relationships with the conservation community, coupled with *ONE/Northwest's* technical expertise created this success.

These examples illustrate the power of IT tools to strengthen organizing efforts. A common thread connecting all of these success stories is the fact that a CBO's thorough knowledge of the issues and the constituencies involved drove the organizing/ advocacy strategy while IT was used to strengthen and augment the work. Online activism must support and inspire offline public participation in order for the organizing and advocacy benefits of technology to be fully realized. Virtual vehicles cannot replace traditional organizing techniques; but they can enhance them. Also, as the Internet and other communications devices are used more and more to support offline organizing efforts, we must insure that low-income communities, and the organizations that serve them, have the requisite training and access to these technologies. If the above examples demonstrate that IT tools can be democratizing vehicles, it must also be remembered that these same tools can reinforce an imbalance of power if they are not available to all communities.

Information Clearinghouse

Perhaps the most powerful attribute of the World Wide Web is its use as a tool for gathering and disseminating information. Some CBOs have begun to use the Internet to develop and share localized and issue specific information with their constituents and other organizations. Some information clearing-houses focus on a geographic area, enabling residents and visitors to find valuable information about institutions, government, events and local history. Other information clearinghouses are issue-specific, allowing "communities of interest" to build their shared knowledge base.

One example of an issue-driven clearinghouse is the *Cleveland CDC Technology 2000 Team (T2K)* Initiative. The T2K initiative was organized in July 1998 by the Enterprise Foundation—Cleveland and the Cleveland Housing Network to build the capacity of Cleveland's Community Development Corporations (CDCs) by using information technology. The T2K team is comprised of a broad range of technology providers and community based organizations, including the two founding organizations and Neighborhood Progress, Inc., the City of Cleveland, Community Development Department and City Planning

Department, Cleveland Neighborhood Development Corporation, Center for Neighborhood Development, Cleveland State University, Local Initiatives Support Corporation — Cleveland Office, and Case Western Reserve University. Early in the development of T2K, a set of principles was established to guide the operations of the collaborative effort. These include:

- Coordinate technology initiatives to create a common industry platform and ensure the usefulness and consistency of T2K applications.
- Improve the efficiency and increase the quality of CDC business practices.
- Decentralize access to information and database tools.
- Promote communication and cross learning in the local CDC industry.
- Provide CDCs with strategic funding for technology startup.
- Provide accessible and affordable central support and technical assistance.

Using these principles, the T2K Team quickly began to create an information clearinghouse that would coordinate and address the immediate priorities that would be most useful to Cleveland's CDCs. The Team set out developing new products on a common, web-enabled platform in order to provide desktop access to CDCs along with central training and support. The IT Department at Cleveland Housing Network (CHN) was identified as the project manager for most new products and "www.t2k.org" was established as the fully functional web portal for the project. T2K received a major boost in September 1999 when CHN was awarded a $500,000, three-year, Department of Commerce (TOP) grant, matched one-to-one with local funds, to support the initiative.

By 2001, some of T2K's accomplishments include the following:

- Produced an on-line, CDC e-mail address book and citywide training and events calendar.
- Funded and provided technical assistance to over 30 CDCs to give over 350 staff desktop Internet and email access.
- Funded and provided technical assistance to 21 CDCs in upgrading their office IT systems, resulting in over $100,000 in total investment.
- Developed and delivered technology training to over 100 CDC staff in Excel, Access, Outlook, Windows NT, and use of the Internet.
- Rolled-out a web enabled software tool for CDC reporting to the City of Cleveland and HUD on all CDBG and HOME activities and projects.
- Piloted an online "Sales & Leasing Center" for CDCs and a Section 8 housing directory for CMHA, linked to online neighborhood tours.
- Produced online program management software for CDC Home Repair, Individual Development Account, and Asset Management Programs.
- Created an interactive "Neighborhood Indicators Database" that provides CDCs with desktop research, neighborhood planning and mapping capability; and provides funders with a system for measuring the impact of CDC initiatives.
- Deployed a "lending library' of 20 Palm Pilots for CDCs to use in conducting a variety of neighborhood surveys – gathering data that is not available from any existing source.
- Staffed a citywide "Help Desk" to provide CDCs technical support.
- Selected the location for fifteen neighborhood computer kiosks through which neighborhood residents will be able to access the wealth of information assembled by T2K and its partners.

The T2K initiative uses Internet technologies to build the capacity of community organizations via information sharing. The strength of the CDCNetwork stems from its targeted focus on a specific geography (Cleveland) and issue area (housing). Because local practitioners guide the development of the CDCNetwork, the larger organization reflects the priorities and needs of the neighborhood organizations.

Networking and Online Communities
Improving communication to coordinate activities, or share experiences and perspectives is one of the most logical uses of IT tools. CBOs use e-mail, websites, and Virtual Private Networks (VPNs) to work collaboratively with each other and improve service delivery to their constituents. This helps build online communities that enhance and support offline networks. Two examples, one, which promotes building relationships between low-income St. Louis residents, and another that facilitates youth-serving organizations in Seattle, demonstrate the power and effectiveness of online spaces.

Founded in 1903, *Grace Hill* is a neighborhood development organization serving disadvantaged communities in the St. Louis metropolitan area. The organization bases its work on the self-help tradition of the Settlement House movement and strives to: (1) work for social change within society to foster greater support and understanding of the disadvantaged; and, (2) work in disadvantaged neighborhoods to create strong, healthy, helping communities by encouraging and supporting neighbors as they help themselves and others.

Grace Hill's Member Organized Resource Exchange (MORE) is an example of a "neighbors helping neighbors" approach to community change. The MORE Time Dollar Exchange is a community based network of services that can be exchanged like currency between neighbors. The MORE system allows neighbors to earn and save "time dollars" when they volunteer their services to one another. The computerized tracking system allows *Grace Hill* to monitor and track activity while providing participating residents with a monthly report of "time dollars" earned and owed. Services bartered between neighbors under the MORE system include: auto repair, childcare, gardening, photography, tax assistance, transportation, tutoring, writing, and more. Formalizing and enhancing the skills residents already possess creates a base for an effective "neighbors helping neighbors" approach.

The "time dollar" approach was first implemented in 1982 with an accounting system maintained by *Grace Hill* staff on index cards. In 1985, *Grace Hill* computerized the "time dollar" system. This allowed staff to more easily update, categorize and share information about residents' skills and abilities. The automation led to a massive increase in the number of residents participating in the MORE Time Dollar Exchange.

In 1995, a TIIAP grant from the Department of Commerce (now referred to as TOP) facilitated a third upgrade to the "time dollar" system. *Grace Hill* used TIIAP funds to upgrade existing computer systems and establish a network of personal computers in agencies and public sites throughout the *Grace Hill* service area. This latest upgrade led to another significant increase in participation in the "time dollar" program, since residents were now able to access their accounts without the assistance of *Grace Hill* staff. At the same time, *Grace Hill* created its Computer Mentor program so that residents with some computer know-how could provide basic computer training to others in their community, enabling all interested residents to acquire the skills necessary to access their accounts online. Although *Grace Hill* initiated the Computer Mentor program to enable greater participation in the "time dollar" system, residents' initial exposure to computers and the Internet sparked an interest, for some, in more advanced IT training. Over time, *Grace Hill* has expanded the "time dollar" system to include a comprehensive online resource bank of services available in the St. Louis metropolitan area, as well as a geo-spatial mapping of community resources and assets.

The Time Dollar Exchange is a compelling example of how technology can serve as a tool for building the social capital and community network essential for strong, healthy neighborhoods. Through the use of IT, *Grace Hill* has been able to achieve a larger scale of participation and spark a resident interest in computers and the Internet, while at the same time amassing a storehouse of information about community assets and needs.

Technology Access Foundation (TAF), a nonprofit Seattle-based agency with a mission to provide communities of color access to technology, is another example of an organization using technology to build community. TAF is an umbrella organization that leverages and builds upon the work of other non-profits devoted to providing access to technology for children and youth in predominately minority communities. TAF also develops programs that enable students to enjoy a dynamic interaction as inventors and users of technology and providers of content. At the heart of their work is an effort to use technology to address the root causes of the cycle of poverty—low- paying jobs, reliance on public assistance, and an inadequate education. By offering opportunities to build IT skills, and linking these newfound skills to the basic education these minority youth receive in school, TAF is creating pathways to improved educational and career opportunities.

To fulfill their mission, TAF focuses on four core initiatives: (1) information technology training to enable communities of color to find employment in the IT sector; (2) computer fluency training to insure that youth have the basic IT-literacy needed to participate in our digital society; (3) increased awareness of technology's importance in low-income and communities of color and; (4) activities that inform parents and students about higher education requirements and how or where to get those requirements met.

One of TAF's projects is Connecting Communities of Color (C^3), a collaboration of technology- focused, community-based organizations and individuals who recognize the urgent need for people of color to participate in the IT revolution. TAF brought these organizations together in order to leverage their existing resources and help to create new ones. One support that TAF provides these organizations is a Virtual Private Network (VPN) that allows the C^3 consortium to more strategically coordinate their technology efforts. VPNs are a commonly utilized tool in the private sector, but few community based organizations have benefited from this powerful IT application.

Innovations in Service Delivery

Just as IT tools are leading to productivity gains in the private sector, they can also be applied in the nonprofit sector to improve the delivery of social services. The *Sexual Assault Crisis Center* is one example of how the strategic use of technology can streamline service delivery, assist social service organizations to serve a larger number of clients, and facilitate collaboration across organizations to enhance the provision of support services.

Based in Androscoggin, Maine, the *Sexual Assault Crisis Center* (SACC) is dedicated to ending sexual victimization and assisting the healing of people affected by rape, sexual assault, child sexual abuse and sexual harassment. SACC provides an array of services for survivors of sexual violence, including: a 24-hour hotline, a Sexual Assault Response Team, support groups, programs targeted at adolescents, and in-school education programs.

Most recently, SACC enhanced its existing services with online support groups. Operating on a secure, private, closed site that can only be accessed by authorized individuals, SACC allows survivors of sexual assault to connect to each other in a safe way, and at times when other support groups are not available (e.g., late evening hours). The fact that a trained staff moderates the group enables SACC to maintain control of who participates. If an unauthorized person should manage to "break into" the support group, he or she can be removed. SACC counselors also maintain offline contact with clients, enabling counselors to contact them via phone or make home visits in case of an emergency. SACC and other community based organizations are using IT in ways that make virtual and face-to-face relationships mutually reinforcing.

Once again, this tool only works if potential participants are comfortable with the technology, and, in this case, have home access to the Internet. In order to ensure that as many survivors as possible participate in the project, SACC accepts donations of computers. A SACC volunteer, who is also a survivor of sexual violence, upgrades and readies the computers for Internet use. SACC also provides basic training. The computers – with the requisite training – are given to survivors so that they can participate in the online support group.

Interactive Database Development

The Internet is increasingly moving towards greater interactivity, with complex back end databases allowing users to create individual online experiences by accessing information customized to their needs. Community based organizations have begun to use interactive databases to help their constituents find employment, learn about community assets and resources, and access other local information. Two examples, one focused on workforce development and the other on mentoring, both highlight how interactive online databases can advance community-building goals.

East Bay Works is an online directory of employment and training services available to job seekers and employers of Contra Costa and Alameda counties in California. Area Private Industry Councils, government agencies, community colleges, educational agencies, and CBOs collaborated to create *East Bay Works* because they recognized that the existing workforce development system is fragmented, duplicative, and difficult to use. *East Bay Works* is one component of a larger effort to create a comprehensive and integrated employment and training system that includes the development of 16 one-stop career centers throughout the East Bay.

The *East Bay Works* website is an interactive, regional directory of employment and training services. The site has a portal for employers, which facilitates posting and tracking jobs online. Another portal allows job seekers to post resumes, search for regional employment opportunities, and participate in discussions about training opportunities. Local wage and labor market information, an events calendar, resource listings, links to local training providers and national job banks are also available. The user-friendly interface, and the free Email accounts given to all participants, ensures that the website is accessible to as many individuals as possible.

Since its initiation in 1997, *East Bay Works* provided key information to hundreds of thousands of job seekers and employers in the San Francisco Bay Area. Online job databases have been one of the key ingredients for maintaining the labor pool of the knowledge-based economy. *East Bay Works* demonstrates how useful this type of online content is for the nonprofit sector.

Formed in 1992, *Cabrini Connections* provides a framework that enables and encourages adult volunteers to provide positive development supports to children in disadvantaged environments such as the Cabrini Green housing development in Chicago. The organization is made up of two programs—Kids' Connection and Tutor/Mentor Connection. Kids' Connection combines tutoring, mentoring, and a school-to-work approach to help participating youth complete high school and enter a career or institution of higher education. The Tutor/Mentor Connection (T/MC) was formed in 1993 as a research and advocacy arm of *Cabrini Connections*. T/MC gathers and organizes information about successful after-school tutor/mentor programs and shares that knowledge in order to expand the availability and enhance the effectiveness of services for children and youth in the Chicago region.

T/MC uses a range of IT tools to support its work. For example, T/MC maintains a database of over 12,000 volunteers, programs, businesses, foundations, media and community leaders. This database uses GIS technology to create an interactive map of Chicago with overlays illustrating poverty, poor schools, and locations of tutor/mentor programs. Online versions of this map and database help both residents, individuals and organizations to find programs and advocate for youth services in areas where there are gaps.

East Bay Works and T/MC highlight the effectiveness of interactive databases to store, share and disseminate community information. Although databases are hardly a new application, the interactive and online nature of these examples allows larger numbers of people to access information quickly and efficiently. Current applications are also more user friendly than older database software, making it easier for CBOs to integrate them into their work.

Community Mapping

Geographic Information Systems (GIS) is a computer application that assembles, stores, manipulates, and displays geographically referenced information. GIS applications are increasingly being used for public policy development, neighborhood planning, advocacy, and research. Although GIS was once used only by universities and policy/research institutes, it is increasingly being used by community based organizations in a variety of ways. GIS mapping holds great promise, as it enables CBOs to understand a community's assets, provide early warning systems, and generate information about local needs. Maps also offer a visual component to sophisticated policy issues, making policy more accessible.

Neighborhood Knowledge Los Angeles (NKLA), a project of the UCLA Advanced Policy Institute, the Community Development Information Coalition, and a host of city agencies and non-profit organizations, provides residents of Los Angeles with specific information about their neighborhoods. The NKLA website integrates several databases to develop an Interactive Neighborhood Electronic Monitoring System (NEMS), which allows visitors to access comprehensive information on individual properties or neighborhoods. For example, residents can view information about tax delinquencies, code violations, utility liens, and other signs of property neglect, allowing them to develop strategies to improve living conditions. A community asset mapping component helps residents to identify and build upon community strengths. Census demographic information, as well as the ability to conduct advanced queries such as, "how many properties in my zip code are tax delinquent and have code complaints" is also available. To ensure broad community involvement and access, NKLA has created English, Spanish, and text-only versions of its website. NKLA also provides residents with training on how to use the community information found on the website as a tool for neighborhood change. As government agencies increasingly make raw data sets available online, NKLA can localize and contextualize this information in a manner that makes it understandable and relevant to community residents.

The NKLA project: provides rich and detailed information about communities, allows organizations and residents to hold government officials accountable, generates and organizes timely information about neighborhood decline, and enables community activists to craft well-informed strategies for neighborhood improvement. In addition to strengthening community development activities, this project is a perfect example of a new, community-driven model for research and public policy development. The technical knowledge of the university, coupled with the deep local knowledge of the community partners has been essential to the success of the NKLA project.

An example of a collaborative effort to strengthen the use of neighborhood-level information systems in local policymaking and community building can be found at The Urban Institute. The Urban Institute, a Washington D.C. based nonprofit policy research organization, in partnership with local community groups, initiated the *National Neighborhood Indicators Partnership* (NNIP) to create and share local socioeconomic data. All of the partners have locally self-sustaining information systems that track neighborhood conditions. Some of the neighborhood indicators that local partners track include: births, deaths, crime, health status, educational performance, public assistance, and property conditions. NNIP uses this information to build locally-driven strategies to improve distressed urban neighborhoods. Its goal is to extend the impact of local partners using information systems by collaborating, sharing best practices, disseminating project outputs, developing creative strategies to support local efforts, and building a National Neighborhood Data System that integrates information from local partners.

One of the local NNIP partners, the *Boston Community Building Network* (BCBN) works to catalyze and build upon the strengths and assets of the Greater Boston community including, its nonprofit, private, and public institutions; its growing racial and cultural diversity; and residents' ideas and shared aspirations for the future. The BCBN uses IT tools to support several initiatives including the Boston Children and Families Database, the Boston Community Building Curriculum, and the Boston Indicators of Change, Progress, and Sustainability—a civic process cosponsored with the City of Boston's Sustainable Boston Initiative.

Next Steps: A Comprehensive Policy Approach to the Digital Divide

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We are at a critical juncture in the evolution of public policy that will bridge the digital divide. We have made significant advances in creating access points for marginalized communities, but also realize that access alone is not going be to the sole solution. If the United States continues to primarily support access-centered policy, we are at the risk of building digital bridges to nowhere — a national network of computers and trained residents with little reason to use information technology. We might also miss the opportunity to aid community based organizations use IT to tackle the complex array of social and economic dynamics that divide our society. The digital revolution necessitates a new generation of programs and policies to utilize technology as a tool for building strong communities. The examples reviewed in this report offer a foundation to address two shortcomings of current digital divide policy—1) the lack of relevant community content online, and 2) the lack of technology capacity in the community based nonprofit sector.

By addressing these two deficits of current digital divide policy, we can move towards a comprehensive approach to the digital divide that includes support for individual access, as well as support for building the technology capacity of nonprofit community based organizations.

The PolicyLink vision of a comprehensive approach to the digital divide policy includes four integrated components—technology access and training for individuals, technology capacity building for community based organizations, the expansion of relevant local content and the development of new applications. (See box that follows)

A Comprehensive Policy Approach to Bridging the Digital Divide

Access for individuals, capacity building for organizations, content, and applications taken together constitute a comprehensive strategy for bridging the digital divide. The universal access movement serves the important function of building the infrastructure upon which we develop strategies for greater social and economic inclusion. Parallel to universal access strategies we need efforts that promote the development of relevant content for residents and innovative IT applications that can support the work of community based organizations focused on promoting equity.

- **Technology Access and Training for Individuals:** Universal access to computers and the Internet, combined with basic technology literacy training is a critical component to bridging the digital divide. Creating diverse and varied access points, opportunities for computer ownership for disadvantaged families, and building technology literacy constitute the basic infrastructure required for a digitally equitable society. As we continue to work towards universal access it is important to create access points in locations that fit in the lives of the technologically underserved, whether by co-locating with community based institutions they already utilize, public housing projects, libraries, etc. Additionally, as further advances in broadband technologies occur we must insure they are made available to all segments of society.

- **Technology Capacity Building for Community Based Organizations:** Community organizations are the gatekeepers of local information and are the essential ingredient for creating local content that is relevant and useful to low-income residents. Building this kind of capacity will be challenging, since many of these organizations have been, historically, the last to benefit from technological innovations. Yet, addressing this "organizational divide"—or lack of technology capacity in the community based nonprofit sector—is the first step in engaging community based organizations in using technology to advance their missions. Once these organizations have the technical capacity, they can produce community-based content, participate in the new economy, and develop new policies to support other organizations' efforts to use IT as part of a comprehensive equity-building strategy.

- **Relevant Content, Created By and For Communities:** A recent strategic audit of online content conducted by the Children's Partnership demonstrated that another dimension of the digital divide is the lack of content that is relevant to the lives of low-income and underserved communities.[9] The study indicates that the content most useful to communities at risk of being left behind includes the following: (1) employment, education, business development, and other information; (2) information that can be clearly understood by limited-literacy users; (3) information in multiple languages; and (4) opportunities to create content and interact with it so that it is culturally appropriate. PolicyLink views the development of relevant online content—created by and for low-income communities—as a critical component to bridging the digital divide. The presence of content that addresses the needs of the underserved can spark a desire to acquire access to and facility in using digital technologies. As such universal access and relevant online content are mutually reinforcing variables in the digital equity equation.

- **Development of Innovative Information Technology Applications:** Information technologies are powerful tools that have revolutionized production processes and increased productivity gains in many sectors of the economy. These technologies can also be as a tool for community problem solving. For example, innovative IT applications can enhance and improve service delivery, create social and economic opportunity.

Policy Approaches

Since the digital divide first emerged as a national policy issue in the early 1990s, not enough has been done to bring technology resources to community based organizations or to use technology to extend the work of the existing community infrastructure. A comprehensive approach to the digital divide must address these policy gaps. This section highlights policy issues to help move from the scattered local successes of community based organizations utilizing IT as a strategic tool to building a vibrant infrastructure that creates dynamic content and applications. Below are four areas in which policy and program supports are needed to address the barriers facing CBOs and create an environment that promotes the use of information technology in a comprehensive manner.

Capacity Building. Enhancing the technological capacity of community based nonprofits is an important step towards bridging the digital divide. These groups are the rich repositories of local information that enables them to use IT to develop invaluable content and applications. Also, as their technology capacity increases, CBOs will be better able to secure new resources; modify their own ambivalence towards technology; and influence future policy. Suggested strategies to build the IT capacity of community organizations include:

- Forge strong local relationships between CBOs and CTCs by: 1) creating venues for collaboration; 2) identifying concrete areas where linkages are possible (e.g., job training, economic development, etc.); and 3) developing intermediaries that facilitate relationship building and garner resources for support.
- Encourage collaboration between TA providers and CBOs through: 1) increased outreach to community groups by technology TA providers; 2) forums that create opportunities for mutual learning; and 3) programs that fund and support these and other capacity-building relationships.

Resources. In order for community based organizations to develop content and applications that strengthen their programmatic work, they will need additional financial resources. Too often limited budgets force organizations to choose between technology and other activities, when technology's importance is underscored by the fact that it is a tool that can support a range of activities. Some policies and programs that would increase the CBO's available IT resources include:

- Increase funding for programs like the Department of Commerce's Technology Opportunities Program (TOP).
- Create new federal, state and local funding streams that support nonprofit organizations' use of information technology.
- Direct private sector funding for IT programs designed to support community groups' efforts to build their technological capacity.
- Increase philanthropic support for IT components of various ongoing community initiatives.

Public Policy. Community based organizations have been a minority player in most public policy initiatives despite the fact that the federal government has contributed hundreds of millions of dollars to create a supportive technology infrastructure. Federal, state and local policies must be reshaped so they are more in sync with CBOs' technology while also promoting the development of local content and applications. Federal mechanisms that can support the next phase of IT programs include:

- Expanding the Technology Opportunities Program's mission of to emphasize content and IT application development.
- Expand the Department of Education's E-Rate program so that CBOs can benefit from telecommunications discounts.
- Insure that innovations in broadband technology are extended to community based nonprofits.

Culture-of-Use. Community organizations must shift their thinking and view technology not as a "necessary evil" but as a strategic tool if we are to develop the content and applications necessary to bridge the digital divide. Strategies that promote a culture-of-use in community based organizations, and the disadvantaged constituencies they work with, are critical. Some activities that promote a culture- of- use include:

- Developing stronger and deeper linkages between technologists and community builders so that awareness of technology's impact is better understood by CBOs.
- Creating an inventory of community based applications, along with technology descriptions, that illustrate how IT tools can be used as a tool for social change.
- Create online and offline opportunities for community based organizations to share knowledge and experience around developing content and applications.

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1 Content is relevant and meaningful community based information on topics such as employment, housing, community events, education, childcare, and social services. This information must be able to be understood by limited-literacy users, published in appropriate languages and offered in culturally appropriate manners (Children's Partnership, *Online Content Development for Low-Income and Underserved Americans—The Digital Divide's New Frontier,* 2000).

2 National Telecommunications and Information Administration, US Department of Commerce. *Falling Through the Net.* Series 1995, 1998, 1999, 2000.

3 Community infrastructure includes residents, activists, community development corporations, social service organizations, affordable housing developments, faith institutions, business owners, schools, etc. working together and independently to address poverty and racism.

4 The Planning Partners for a National Strategy for Nonprofit Technology. *A Blueprint for Infusing Technology into the Nonprofit Sector.* 1999.

5 Shorters, Trabian. *A Case For: Technology Works. 1999.*

6 Shorters, Trabian. *A Case For: Technology Works. 1999.*

7 Wired for Good—A Joint Venture of Center for Excellence in Nonprofits and Smart Valley, Inc. *Technology Survey Final Report.* 1999.

8 Stoecker, Randy. *Cyberspace vs. Face to face: Community Organizing in the New Millennium.* 2000.

9 The Children's Partnership. *Online Content for Low-Income and Underserved Americans—The digital divide's New Frontier: A Strategic Audit of Activities and Opportunities.* 2000.

Appendix A: Technology Technical Assistance Providers and Case Study Examples: World Wide Web Citations and References

Benton Foundation
www.benton.org

Community Technology Centers' Network
www.ctcnet.org

CompassPoint Nonprofit Services
www.compasspoint.org

CompuMentor
www.compumentor.org
www.techsoup.org

National Council of Nonprofit Associations
www.ncna.org

The Nonprofit Technology Enterprise Network
www.nten.org

Npower
www.npower.org
www.npowerny.org

OMB Watch
www.ombwatch.org

Progressive Technology Project
www.progressivetech.org

TechRocks
www.techrocks.org

Technology Works for Good
www.technologyworks.org

Case Study Examples
(Listed in order of appearance)

Welfare Law Center's Low-Income Networking and Communications Project (LINC)
www.lincproject.org

1000 Friends of Oregon – ONE/Northwest
www.friends.org
www.onenw.org

Cleveland CDC Technology 2000 Team (T2K)
www.T2K.org

Grace Hill
www.gracehill.org

Technology Access Foundation
www.techaccess.org

East Bay Works
www.eastbayworks.org

Cabrini Connections
www.tutormentorconnection.org

Neighborhood Knowledge Los Angeles
http://nkla.sppsr.ucla.edu

National Neighborhood Indicators Partnership
www.urban.org/nnip

Boston Community Building Network
www.tbf.org/current/bcbn.html

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Servon, Lisa J., and John B. Horrigan. 1997. Urban poverty and access to information technology: A role for local government. *Journal of Urban Technology* 4 (3): 61–81.

Shorters, Trabian. 1999. *A Case for Technology Works.*

Stoecker, Randy. 2000. *Cyberspace vs. Face to face: Community Organizing in the New Millennium.*

Wired for Good – A Joint Venture of Center for Excellence in Nonprofits and Smart Valley, Inc. 1999. *Technology Survey Final Report.*

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