

Toward a Technologically Healthy CALIFORNIA:

A Roadmap for Policy Makers



*Prepared by
the Zero Divide Fellowship Policy Group
of the Community Technology Foundation
of California*

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“There can be no gainsaying of the fact that a great revolution is taking place in the world today . . . that is, a technological revolution, with the impact of automation and cybernation . . . Modern man through his scientific genius has been able to dwarf distance and place time in chains. Through our scientific and technological genius, we have made of this world a neighborhood and yet we have not had the ethical commitment to make of it a brotherhood. But somehow, and in some way, we have got to do this.”

Dr. Martin Luther King Jr., 1967

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To get an electronic copy of the report go to:

<http://www.zerodivide.org/initiatives/ZFellowspolicygroup>

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Executive Summary

This Roadmap proposes a statewide strategy on information technology access and use to benefit all communities in California, particularly the poorest and most underserved. It documents the critical needs of disadvantaged communities as they relate to technology and suggests policy prescriptions for the next five years. These include:

1. Bring all California communities online by 2010 through a statewide “Connection for All” campaign to offer universal availability, accessibility, and awareness of information technology.
2. Establish and implement minimal standards for digital literacy.
3. Launch a dialogue between communities, business, and government to help forge appropriate short and long term citizen technology policies.
4. Support community-based technology programs that specifically target the poorest and least connected Californians.
5. Develop Digital Empowerment Zones that attract technology businesses and opportunities to poorly connected communities.

The goal of the Roadmap is to move California toward a more technologically healthy state – a state where all communities are technically literate and have full access to appropriate information and information technology tools. A better connected, technologically empowered community will make for a stronger and more prosperous California, one that is fully prepared to meet the challenges of the 21st Century.

The Roadmap, which focuses on community-based technology solutions, was developed by a group of community technology leaders from throughout the state of California. Input was provided by community members, other community technology practitioners, policy makers, business and foundation representatives, faith-based leaders and educators. This effort is the culmination of a two-year strategic impact project undertaken by nine ZeroDivide Fellows of the Community Technology Foundation of California.

Road Rules



Introduction & Statement of Purpose

California is the sixth largest economy in the world. Much of its economic success is driven by information technology. California leads the nation in technology exports (over \$48 Billion in 2004) and has more technology companies than any other state (43,600). These advanced technologies have created millions of jobs and positioned California as the heart of innovation in the emerging fields of biotechnology, nanotechnology, and stem cell research.

However, many Californians have not benefited from the technology boom, and large segments of the population remain technologically illiterate. This is particularly alarming given that information technology literacy is an essential part of modern life. Interpersonal communications, health information, government services, commercial dealings, and educational opportunities are increasingly moving online. Broadband Internet, wireless access and mobile devices are becoming the norm. Over 60% of all jobs now require good fundamental technology skills.

Are all Californians, particularly low-income and underserved groups, prepared to fully participate in a technologically-driven society and are we in danger of creating a class of technology illiterates that will be left behind?

According to a Fall 2004 survey of low-income and underserved Californians from all parts of the state conducted by the ZFellow Policy Group, participants identified major barriers to technology access and use, including: cost, language, physical access, lack of training, and fear of technology itself. In a May 20, 2005 statewide community technology summit, participants from community organizations, business, academia and government reported that accessible and available technology is a *quality of life indicator for community health*. They concluded that insufficient access to and understanding of technology can generate social and economic inequality, and results in isolation. The participants concluded that California is not yet the technologically healthy community that it should be.

This roadmap identifies the key signposts of a technologically healthy community and presents policy recommendations to achieve a technologically healthy California – a California where ALL are connected in a meaningful and empowering way.

A better connected California will benefit the state's economy, civil society, and institutions of education and government. Most importantly, California has the opportunity to leverage one of its most abundant resources - technology and innovation - to transform society and achieve social justice in our time.

The Case for Improved Technology Access and Awareness

Although California is home to a prosperous and globally competitive high technology sector, large segments of its population remain on the wrong side of the digital divide. Latino and African-American households have much lower growth rates in broadband access, and there is still a large percentage gap in home broadband (high-Internet access) by ethnicity and income. Although Latinos and African-Americans represent

30% and 7% of the state's population, respectively, only 13% of Latino and 14% of African Americans had broadband access in 2003, compared to 32% for Whites and Asians. The gap in technology access and use by children and young adults is equally disturbing. According to a June 2005 national report by the Children's Partnership, called "Measuring Digital Opportunity for America's Children":

- Children from higher income families (annual income of over \$75,000) are twice as likely to have access to a computer at home as those in very low income families: 96% compared to 45%. For Internet access the figures are 93% versus 29%; for broadband 51% versus 7%.
- Children ages 7-17 living in households earning more than \$75,000 annually are more than three times as likely to use a home computer for word processing or desktop publishing as children in homes with an income of less than \$15,000 (56% versus 17%).
- Young adults, ages 18-25, with a household income of more than \$75,000 were nearly twice as likely to use the Internet to interact with government as young adults from households earning less than \$15,000 (20% compared to 11%).
- Only 36% of children, ages 7-17, from households earning less than \$15,000 annually say they use the Internet at school compared to 62% of children from households earning more than \$75,000.
- Nearly four times as many parents of children, ages 12-17, from households earning more than \$50,000 used email to communicate with their child's teacher as did parents from households earning less than \$30,000 (33% compared to 9%).
- More than half (53%) of teachers who have computers in public schools use computers or the Internet for instruction during class. But in wealthier schools 63% of teachers with computers use them in class compared to 50% of teachers in poor schools.
- While 20% of children from homes with an income of \$75,000 or more have PDAs, less than 1% of children from homes earning under \$15,000 have them.

Digital inequities still exist both locally and nationally. Creative policies for improving technology access and awareness are thus required. Without Internet access, technology tools, and knowledge of how to use them, we run the risk of inadvertently supporting a technology class system comprised of technology elites and technology semi-literates. Early exposure to technology is especially critical for children to ensure easy adoption of and a high level of comfort with technology over the long run.

Approached from a different perspective, these imbalances present us with a unique opportunity to develop technology-driven solutions that address the pressing needs of all communities and strengthen the social, economic, and political base in California.

***"I use technology to help my children
with their homework."***

Focus Group Participant, CARECEN Los Angeles



Terrain

What is Community Technology and Why is it Important?

One answer to the challenge presented by the existing digital divide is Community Technology. It sounds like a computer term from a Silicon Valley “dot com” company. In actuality, it is an exciting movement dedicated to helping underserved and yearning people find their voice, access services, and improve their lives.

According to the Community Technology Foundation of California (CTFC), *Community Technology includes “projects that use technological tools in innovative ways to strengthen communities.”* It includes ways of using the latest technology to enhance a community’s economic, physical, social, and political development.

Since the rapid growth of technology in society today, diverse organizations and groups have proposed numerous initiatives and innovations using technology to benefit communities. While the approaches vary, the common goal among these initiatives is to ensure that low-income, disabled and ethnic populations who live in isolated rural areas and urban inner cities in California have access to affordable technologies including broadband internet, personal computers, and training in order to improve their participation in society.

Community Technology is about *access*. Access is more than a simply plugging-in to the Internet and gaining a brief exposure to technology tools. It is also about giving people the technical training and social skills needed to use technology in order to thrive and compete in today’s information-intensive society. Community Technology becomes an enabling and productive tool, a resource for information, and a vehicle for communication. Think of computers to write resumes, Internet connection to access government services, and email for communication, as tools that will help people better their lives.

“We should open CTC’s in different neighborhoods to expand access for citizens”

Focus Group Participant

Little Tokyo, Los Angeles

The power of the Internet gives people the ability to learn new skills, understand a complicated political process, create new ideas, develop community, and obtain basic services like transportation, access to health, or even food. This gives people the ability to meet personal, economic, political and social needs. Community technology programs offer both training and hands-on experience to enable people to meet personal, economic, political, and social needs.

Community Technology Programs

Community Technology Programs (CTPs) are places where people can gain skills and acquire valuable labor market experience to be productive members of their communities. They can be in a community center providing technology access and training, based in existing social service agencies, traditional community centers, or as stand alone operations.

CTPs provide more than affordable connections, they teach people how to use technology, and show how technology tools can help meet economic, social, political,

professional, and personal goals. CTPs help people with both technological know-how and relevance. Setting up a CTP requires various resources: time, space, assistance, guidance, and hands-on experience. The result is a center that helps people use technology for learning, work, communication, community building, and attaining public and private resources online.

A CTP is a community production studio, copy center, cyber-library, self-paced learning studio, and even a telecommunication booth for low-income communities. It could be a nonprofit organization, community center, local school, places of worship, or a public library. Current estimates put the number of independent (non school or library based) California CTPs at approximately 1200 statewide, separate from school and library-based computer labs. CTPs use technology to help community members of all ages access the Internet that can help them find jobs, start small businesses, get information on health resources, or receive homework assistance in a safe place. It is today's high-tech community connection.

According to a 2001 U.S. Department of Commerce study, underserved populations (disabled, low income, social ethnic groups) are twice as likely to depend on community centers for computers and Internet use than are their counterparts that are more likely to have access at home, work, school, or a public library.

Offline and online community technology resources are often the only places where low-income and undeserved individuals can access information and gain understanding and skills that connect them with opportunities in their own language. Community Technology Centers and programs act as an essential lifeline in an era of profound technological change.

For specific examples of Community Technology programs see Appendix A. (Note: Provide sample programs in appendix.)

California Community Technology & Policy Developments

Initiatives in California

In the past, Community Technology initiatives in California were an outcome of private and public funding investments made to address the 'digital divide' during the 1990s. Funders helped nonprofit organizations set up centers with new hardware, software, and funds for program development, physical structures, and staffing. These initiatives were created to "bridge the digital divide," which some studies suggest is getting worse.

For most people, access to technology was just a natural progression in their daily lives. Getting a computer, a cell phone, or installing Internet, was as normal and easy as buying their first color television or microwave oven. But for

those caught in a cycle of poverty, the ability to access technology was difficult and in many cases virtually impossible.

Through social collaboration between concerned representatives in private industry, government, public institutions, nonprofit and community based organizations, some of the most innovative and cutting edge models of community technology organizations emerged to serve the technology needs of the underserved public in California.

For instance, the Community Technology Foundation of California is one of only a few private community technology funding agencies in the country. CTFC supports the development of community technology programs throughout the state. This venture is the result of a Community Partnership Agreement worth \$50 million dollars through a merger between SBC and Pacific Bell in 1996.

The state also has unique statewide regional networks of direct service providers of community technology, such as the Alliance for Technology Access, Central Valley Digital Network, Great Valley Center (Central Valley), Community Technology Organizing Committee or CTOC (Greater Los Angeles), Community Technology Network of the Bay Area (Bay Area), and the San Diego Community Technology Coalition (Greater San Diego).

Community Technology Policy

The California Community Technology Policy Group (CCTPG) is also a unique innovative community technology initiative, with national implications. CCTPG is a collaborative statewide policy advocacy network with a steering committee of 32 organizations. It advocates for public policy that supports community technology and after school programs. With the support of statewide alliances and direct service providers, CCTPG advocated for seven pieces of state legislation that were signed into law to support community technology and after-school programs.

Some of their successes were laws that: strengthened the California Teleconnect Fund to support nonprofit technology infrastructure (SB 1863, 2002 & SB 1276, 2004), developed a state broadband plan (SB 1563, 2002), directed funding for after-school programs (SB 1478 & AB 1984, 2002), provided "last mile" connections (SB 720, 2003), and created a new Digital Divide Fund (AB 855, 2003) that set aside community technology funds from the leasing of state-owned properties.

Currently, community technology agencies throughout the state are working together to continue to develop social programs based on technology that prepares the underserved, including disabled, to attain the skills necessary to participate in society and gain from public services online. CT representatives are also working on strategies to sustain CT service for the poor through their support of new legislation such as SB850, AB1458, AB1388.

"The Community Technology Center has broadband access to the Internet, At home all I have is dial-up access to the Internet."

Focus Participant,
Multicultural
Resource Center,
Crescent Park



The Roadmap

General Policy Recommendations

Despite the above-mentioned efforts at assisting low-income and underserved Californians to participate directly in the digital revolution, more comprehensive policies are now needed. Information Technology access and use is no longer a convenience, but a necessity for survival and self-sufficiency. California's continued economic and civic strength will depend, in large part, on the full participation of its residents in an information-driven society. The following policy recommendations are aimed at moving California toward a healthy, thriving, technologically empowering future.

General Goals:

1. Bring all Californians online by 2010 through a statewide "Connection for All" campaign to offer universal availability, accessibility, and awareness of information technology;
2. Establish and implement minimal standards for digital literacy statewide;
3. Launch a dialogue among communities, business, and government leaders to help forge a consensus on appropriate short and long term community technology policies;
4. Support community-based technology programs that specifically target the poorest and least connected Californians;
5. Create Digital Empowerment Zones that attract technology businesses and opportunities to poorly connected communities.

Details and suggested action steps for the above general goals are provided in the next section.

Policy Recommendation Specifics & Action Steps

1. Bring all Californians online by 2010: through a statewide "Connection for All" campaign to offer universal availability, accessibility, and awareness of information technology:
 - **Availability:** Make universal access to broadband by 2010 a state goal – with advanced and affordable broadband connections in every community, and in every household, across the state. Establish a public-private partnership to ensure affordable and convenient information technology infrastructure, equipment, and use locations, including 1) an infrastructure investment fund to provide long-term, low interest loans to companies or organizations that are deploying affordable broadband networks, and 2) a subsidy program similar to the California Teleconnect Fund allowing low-income individuals to access broadband, and up-to-date, affordable technology tools, services, and software.

- **Accessibility:** Devise standards for technology use locations, equipment, and online content to ensure that they are physically accessible and usable by seniors, disabled individuals, and all those facing physical challenges. Encourage the development of information-based content that is socially, culturally and linguistically available to all.
- **Awareness:** Implement a statewide education and PR campaign that provides general information on information technology access, tools, and resources. In addition, widespread IT training opportunities in multiple languages should be made available through local businesses, schools, community centers, nonprofit and faith-based organizations, mobile and “door to door” outreach programs.

2. Establish and implement minimal standards for digital literacy statewide

- Establish minimum guidelines and training curricula for pre-digital literacy in state preschools and Head Start, and digital literacy in K-12 schools and community colleges. Existing standards should be revised every two years in an effort to keep up with emerging technology trends.
- Establish guidelines, training curricula, and a testing system for government employees and all public workers that can be adopted by professional workers in the private sector.

3. Launch a dialogue among communities, business, and government to help forge appropriate short and long term community technology policies.

- Establish a 5-year statewide community technology plan that would identify a strategy to address the gaps in access to and use of information technology in communities across California.

“Internet helps me access services-It is my telephone to the world”

Focus Participant,

- Appoint a state Community Technology Czar charged with:

PATH, Los Angeles

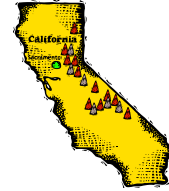
- 1) Developing a 5-year statewide community technology plan
 - 2) Establishing an ongoing research program to document the status of access to information and communications technology among California’s diverse communities and residents.
 - 3) Report annually to the Governor, the Legislature and the public on the status of information access and use by California residents.
 - 4) Conduct an annual Community Technology Summit bringing together representatives of diverse communities, industry, government, and philanthropy to develop strategies to address the technology needs of all Californians.
 - 5) Facilitate public-private partnerships to address the technology needs of underserved communities in California.
- Establish an investment fund or provide incentives and subsidies

through the State Department of Commerce for firms that design and bring to market technology tools and services targeting the needs of low income and underserved communities.

4. Support Community-based technology programs that target the poorest and hardest to reach Californians.
 - Conduct a statewide survey to determine where quantitative and qualitative technology-related knowledge and opportunity gaps exist.
 - Create a state-level program to identify and manage funding mechanisms to support proven community technology models and programs. Some potential funding resources include Local Cable Franchise support funds, the California Teleconnect Fund, fees generated by the leasing of state property to telecommunications companies, and potential benefits accruing from telecommunications mergers.
 - Broaden the scope of state-funded education, training, and workforce development programs to include community technology programs.
5. Establish Digital Empowerment Zones that attract technology businesses and opportunities to poorly connected communities.
 - Offer incentives for companies to offer low cost, high quality technology access services and tools in low-income, isolated, and overlooked areas.
 - Offer incentives for companies to establish operations and innovation centers in communities that traditionally lack information technology businesses and a technology literate workforce.

"Knowledge of computers and technology and how to use them effectively is not transferred well to people who have low levels of literacy or are simply afraid. "

Focus Group Participant, Street Tech San Pablo



The Destination

What Does a Technologically Healthy California Look Like?

A technologically healthy California is a state where ALL communities can take full advantage of information technology opportunities to achieve a higher quality of life. It is a state where an individual's personal and career aspirations are not limited by a lack of information, lack of access to technology, or lack of knowledge on how to use technology.

A technologically healthy California is a place where all people have the potential to be innovators and to contribute to and benefit from the knowledge economy. A technologically healthy California is a leader nationally and globally because:

- Our communities are online and connected
- Our children and adults are digitally literate
- Our communities, businesses, and governments are partners in meeting the information technology needs of everyone
- We view technology access and use by all as a priority
- We treat innovation as a natural resource

*"The wealth of all organizations and the wealth of all communities will be based on the sum of our organizational knowledge, which in turn resides in individual human beings . . . The appropriate use for technology is to facilitate the development of community by providing new and innovative ways to communicate more effectively. In the end, it is people, always, that create community, not technology."
Dr. Andrew Cohill-Design Nine*

Are we prepared to make this vision real?

What YOU Can Do to Support Community Technology

Here are some simple suggestions on what you can do immediately to help support community technology programs in your local area.

- Visit or support a local Community Technology Center or program in your local community.
- Set up an online-chat or video conference with CTC participants.
- Help facilitate partnership between your local technology related business and community technology centers or programs.
- Host a community technology day in your district in which you get local technologists and the technology industry to help "wire" a community based organization in your area.
- Publicize information about community technology centers or programs in your district on your website or newsletter.
- Establish community technology recognition awards in which you recognize a program in your district that is effectively using technology to address issues or a problem in the community.



Drivers & Signposts:

ZeroDivide Fellowship Policy Group and the Roadmap Project

The ZeroDivide Fellowship Program was established in October 2002 by the Community Technology Foundation of California (www.zerodivide.org). The program was established to build a community technology movement that benefits and improves the quality of life for underserved communities; cultivate a network of diverse community leaders who will shape the field of community technology and move a technology policy agenda reflective of their communities; and support the work of California community leaders in advancing a social justice agenda.

A nine-member team drawn from the ZFellows Class 1, which consisted of twenty-one community leaders throughout the state of California, elected to establish a ZFellow Policy group and pursue the development of a Community Technology Roadmap in 2003. The vision of the Roadmap was to create a policy tool for the public and private sectors leading to appropriate and sustained support for Community Technology efforts on the state level.

The project was divided into four parts:

- Community-based input (Fall 2004)
- Research on “The State of Community Technology” (Fall 2004)
- Stakeholder Input through a statewide summit (Spring 2005)
- Roadmap document (Summer 2005)

The current ZFellow Policy Group is made up of community leaders and professionals from around the state, and representing a diversity of regions, ethnicities, languages, and programs. The members include:

Marvin Andrade, Central American Resource Center (CARECEN) --Los Angeles

Paul Lamb, Street Tech, San Pablo

Rebecca Matthews, Love Center Ministries, East Palo Alto

Leonard McNeil, Council Member, City of San Pablo

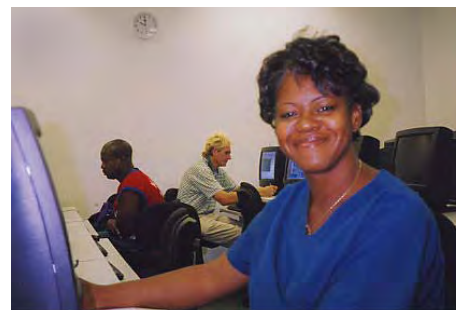
Davis Parks, Little Tokyo Service Center, Los Angeles

Julie Plevancic, Amador-Tuolumne Community Action Agency, InfoNetTC.org

Joel John Roberts, People Assisting The Homeless (PATH)- Los Angeles

Jesse Salinas, Yolo County

Micheline Wilcoxon, Community Technology Organizing Consortium – Los Angeles



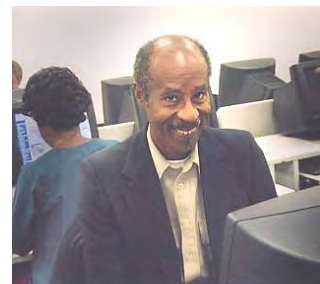
Community-based Focus Groups



During the Fall of 2004 nine leaders working in the field of community technology conducted nine separate focus groups throughout the state of California in an effort to understand the impact that technology is having on under-represented communities. These focus groups were conducted in communities that reflect the diversity of the state including demographic and geographic: rural, urban and suburban communities in northern, southern and central parts of the state. The focus group participants, totaling 90 individuals, represented a multitude of races: African American, Spanish Speaking, Asian, Caucasian; and social groups: homeless, low-income and senior citizen communities. The same questions were presented to all the focus groups, and were open-ended. Each focus group was given a ninety minute time frame to discuss their answers, issues, and concerns on the impact of technology in their communities.

The following is a summary of the results from the focus group proceedings. The full focus group report is included as Appendix C. Some of the findings include:

- **Most participants needed to access computers away from home.**
- **Technology access in schools and libraries was viewed as low quality (defined as the number of computers available, time computers available, and/or no broadband connections available).**
- **Home access by those polled was also primarily dial-up.**
- **Community Technology Center access was generally of higher quality (meaning broadband access and longer access periods);.Participants identified the benefits of technology to be: enhanced communications, increased job searching/preparation, improved general access to information, and usefulness for the mobility challenged.**
- **Reported barriers included cost (initial investment in equipment and upkeep), language (English and technology-speak), public access restrictions, fear of technology, and irrelevance technology and content.**
- **All groups felt that accessing social and government services online was easier and more convenient than traditional means.**
- **Major Internet usages included access to information for education, healthcare, transportation, and affordable housing.**
- **Recommended policy changes to increase access and use were: lowering the cost of technology ownership and Internet access, more technology training, and increased availability of access.**



of

Community Technology Summit

On May 20, 2005, more than sixty leaders from the nonprofit, business, government, foundation, and education sectors from around the state participated in a Community Technology Summit in Los Angeles. The purpose of the full day convening was to share results from the focus group proceedings (above) and to gather input for the Community Technology Policy Roadmap.

The Summit participants discussed the following questions during the convening:

- What are the components of a technologically healthy community?
- What are the barriers to underserved people and communities in being part of this vision?
- What are means to overcome these barriers?
- What are the steps in developing technologically healthy communities?
- How can the roadmap be best used and marketed?

Summit participants concluded that there is a great need for a broader and more complete understanding and awareness of the significant contributions technology makes to the health of a community. Participants concurred that technologically healthy communities provide greater opportunities for people to develop professionally and personally. *Conversely*, the lack of access to technology can generate social and economic inequality and result in isolation.

In essence, the summit participants noted that accessible and available technology is a *quality of life indicator* for community health. The failure to understand the power and importance of this indicator is a major barrier to universal access. Thus, increasing awareness could be the major component in increasing technology access to underserved people and underserved communities.

The full Summit report is attached as Appendix D.

"I used technology to find the Family Learning Center and got back in to school"

Focus Group, Participant Info Net, Amador & Tuolumne County

California-wide Stakeholders

The focus groups and Roadmap summit provided input from a wide range of communities and organizations, including ninety individuals from low-income and underserved communities from around the state; over thirty California-based and national organizations and educational institutions with an expertise in and interest in technology and policy issues; more than twenty-five community technology leaders representing organizations in California; and ten leaders from businesses and foundations. However, many more voices need to be included. In an effort to forge a broad consensus on policy measures and next steps, more participation from the technology industry, community leaders and policy makers will be needed.

To find out more about how you can help with the roadmap project, please contact Micheline Wilcoxon of the Community Technology Organizing Consortium:

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Tel: (323)664-8862

Fax: (323)664-1992

Community Technology Organizing Consortium

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Los Angeles, California 90004

Appendices

a. Examples California Community Technology Program

The DISKovery Center was established in 1999, in response to community needs, to provide affordable computer access and training in Little Tokyo and the wider Los Angeles area. Since that time the DISKovery Center has served over 600 students, and continues to grow rapidly. The non-profit computer center is open to local community residents and individuals seeking job skills. The Center has twenty-two computers equipped with Windows XP and a variety of programs which include, Microsoft Office, desktop publishing, and graphics applications. The DISKovery center lab has a high-speed Internet connection, a scanner, and printers. In addition to drop-in public access hours, the DISKovery Center offers classes in both English and Japanese. For more information on the DISKovery Center go to <http://diskovery.ltsc.org/eindex.html>.

InfoNet, a program of Amador-Tuolumne Community Action Agency, is a website directory for information on community services in Amador, Calaveras, and Tuolumne Counties and is part of a regional Information and Referral Network . The project began in 2000 with the developments of InfoNet Tuolumne County accessible at www.InfoNetTC.org and later expanded to include InfoNet Amador County www.InfoNetAC.org and InfoNet Calaveras County: www.InfoNetCC.org. Another component is our Neighborhood Information Centers located in our libraries and community-based organizations such as the Homeless Shelter, Community Centers, Family Learning Centers and Job Connection sites which provide free Internet access and training to targeted low-income residents. The three websites now average 10,000 visitors per month. The 17 Neighborhood Information Centers receive an average of 20,000 visitors per year.

PATH (People Assisting The Homeless) is a Los Angeles-based regional agency serving the homeless and poor. Along with its nationally recognized PATH Mall, a unique collaboration of public and private service agencies, PATH offers its PATHFinders Job Centers. The U.S. Department of Education has certified PATHFinders as Community Technology Centers, since the programs are based on technology training and education. People learn basic computer skills, access job-readiness training, develop employment skills, learn web-based job finding techniques, and earn a high school diploma through technology. For more information, access: www.epath.org.

Street Tech (www.streettech.org): Street Tech is a nonprofit program offering professional computer training, technician certification preparation, and job placement assistance for deserving adults (ages 18 and up) from disadvantaged communities in the San Francisco Bay Area. Street Tech students undergo an intensive 3-6 month technical and life skills training programs, for 9-15 hours per week, after which they are transitioned into entry-level computer technician, help desk, and network administration jobs. Street Tech also runs a computer repair and desktop/networking support business (www.reliatech.org) and a computer refurbishment program (Re-use Tech) that provides free computers to local schools, nonprofits, and churches.

Jireh Technologies (www.jirehtech.org), a social enterprise venture that support the intersection of commerce and justice. Jireh Tech has established a Technology Learning Center at the True Hope Church of God in Christ in San Francisco and is in the early planning stages of establishing a Community Media Center in Vallejo, California. Jireh Tech provides affordable wireless broadband solutions to Internet access and provides technology applications as a tool for personal, career and community development through onsite instruction and distance learning.

Foundation for Successful Solutions-Project T.E.C.H. (Project T.E.C.H.) is committed to providing programs and services that prepare people for living and working together in this new millennium. Project T.E.C.H. has been operating its community technology program in Los Angeles at the Tom Bradley Youth and Family Center since Spring 2001, and at the South Seas House since Summer 2004.

Beyond technology skills development and its benefits (high tech), the success of Project T.E.C.H. centers are equally measured by the relationships formed in the process--the sense of self-worth and community that develops among participants. (www.fsstech.org)

The mission of the **Alliance for Technology Access (ATA)** is to increase the use of technology by children and adults with disabilities and functional limitations. Based in Petaluma, CA, The ATA is a growing national network of technology resource centers, organizations, individuals and companies. ATA encourages and facilitates the empowerment of people with disabilities to participate fully in their communities. Through public education, information and referral, capacity building in community organizations, and advocacy/policy efforts, the ATA enables millions of people to live, learn, work, define their futures, and achieve their dreams. "ATA ... connecting children and adults with disabilities and functional limitations to technology." For more information go to www.ataccess.org.

b. State of Community Technology Literature Review & Report

State of Community Technology

By

Julie Plevancic

ZeroDivide Fellowship Technology Policy Group

Strategic Impact Project

Objective One:

Review literature on community technology, provide findings and
recommendations

July 1, 2005

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Introduction

Community Technology Counters Digital Divide

The *digital divide* is defined as the gap between those with access to computers and the Internet and those without (Clinton, 2000). Studies on the digital divide have shown that city-dwellers with higher incomes and more education predominantly have greater rates of access to technology. Likewise, non-whites and those who live outside metropolitan areas struggle to obtain access to computer technology and the Internet (Leigh & Atkins, 2001). Furthermore, the term digital divide has come to mean more than a division of technology but in its bigger meaning:

[Technology] has been recognized as a new spin on divides that have existed for ages –such as those caused by differences in race, income, immigration status, disability status, and gender. Under this worldview, technology has become a tool to strengthen existing community efforts and to build new opportunities to bridge traditional divides. (Community Technology Foundation of California, 1999)

In conjunction with the technology revolution of private sector markets during the 1990s, the government began changing the way they deliver social service systems from person-to-person interface and paper transactions to virtual interface via computers and the Internet. E-government now provides Internet systems for processing applications for immigrants, applying for professional licenses, renewing a driver's license, obtaining tickets for public

transportation, or even filing income tax returns.

In addition, educational institutions are integrating information technology into their programs. For example, California's Golden Gate University offers an online curriculum for working professionals and many of the Universities in California require students to have email accounts or process their applications by way of the Internet.

In recent years, funding for Community Technology (CT) programs has been greatly reduced. With the struggle to provide affordable broadband to low-income populations, the priority for the technology industry to support CT programs in developing countries, and competition among limited government grants, urban CT programs are forced to adapt to a non-conducive CT climate. With limited broadband, few technology industries residing in rural communities and the elimination of government grants, CT programs in small communities struggle to maintain a CT presence. In light of decreased available funding and increased competition among CT programs for the limited funds, existing CT programs must constantly evaluate their effectiveness in providing successful programs. This paper provides findings on the state of community technology in California—based on a review of existing reports and literature—and includes recommendations for successfully navigating the current political climate to obtain the future support of our elected officials and of the technology industry.

Literature Review

CT Beginning

In the 1980s, Antonia Stone foresaw that people lacking access to computers risked being left behind in education and employment. Stone responded in 1983 by establishing the first Community Technology Centers (CTC) known as "Playing To Win" (Sargent, 2002). The network began with six centers in Boston, New York City, and Washington, D.C. (Sargent, 2002). Today many people in underserved communities use a range of CT programs to acquire computer and Internet training skills, connect with community resources, and access information. Stone's Playing To Win program became a catalyst in a community technology movement that tries to counter the digital divide.

In 1995, the Playing To Win network received a five-year grant from the National Science Foundation to develop an additional 45 centers across the U.S. and the network became the Community Technology Centers' Network (CTCNet, 2004). Today the CTCNet contains over 4,000 locations — each tailored to the need of their communities, "including settlement houses, after-school programs, church programs, adult literacy programs, and alternative schools" (Sargent, 2002, p.1). In the early 1990s, the U.S. Departments of Commerce and Education developed federal granting programs for CT to help narrow the digital divide through innovative and experimental approaches.

There is a great deal of literature available on the topic of CT and the value of such technology to communities. The efforts to secure ongoing funding streams for these programs have produced much of the literature on the topic.

Defining CT

Hecht (1998, p. 9) lists eight general categories of work facilitated by CT programs: “1) government and democracy; 2) health and human services; 3) educational services and community involvement; 4) quality-of-life information; 6) discounted access to the information highway; 7) economic development; and 8) training”.

Institutionalizing CT may be difficult with numerous community-based models and because part of their success has been in their ability to be formed out of a local vision. There is not one best representation that can fit all community technology needs. “Perhaps the simplest message to take forward is that one size does not fit all, and there cannot be a franchise approach to addressing community needs effectively through technology. Instead, locally driven solutions must be supported” (Computers In Our Future, CCPF 2000, p. 1). CT programs are still very young — just over twenty years and still in the innovative stage for developing programs that are using and providing information technology for low-income communities.

Therefore, many definitions of CT reflect this stage of discovery as it

evolves with the help of CT professionals, beneficiaries, the technology industry, the policy community, the government, academia, and philanthropy. The Community Technology Foundation of California defines community technology as “projects that use technological tools in innovative ways to strengthen communities” (1999, p. 1). For the purpose of this report, CT is defined as organizations that provide information technology access and training to historically disadvantaged populations, such as women, minorities, and low-income individuals.

CT Background & Populations Served

Data from the article, *Falling Through the Net: Defining the Digital Divide* (1999) demonstrates that schools, libraries, and other public access points continue to serve groups without access at home. For example, certain groups — the unemployed or low-income populations — are far more likely to use CT to access the Internet (Children’s Partnership, 2000). The Federal Department of Commerce conducted a study that reported of Internet users surveyed, 14.2% did not access the Internet at home; this suggests that people without home access likely log on to the Internet from another location such as school, work, or through a CT program (NTIA, 2002). The study reported that 38.2% of users without home access still accessed the Internet daily (2002). Another government report, *Community Technology Centers Program, Annual Performance Data* (2002, p.9) on grantees of the Office of Vocational and Adult

Education states:

Improving technology access for Americans who have limited access at home, school, or work is an important first step to improving opportunity, because access to computers and the Internet makes it possible to learn valuable skills and use information that can help individuals realize their dreams for education, career, and a brighter future (p.9)

The report also indicated that low-income Americans and ethnic minorities are among the most widely served by CT (2002).

A 2001 research study named “Computers in our Future” (CIOF) established the positive impact of 11 CT programs in California. The study’s findings demonstrated that the 11 CT programs were able to reach traditionally disconnected populations. Seventy-nine percent of the center’s users were Latino/a, African American, Asian American and Native American (2001). In three years beginning in 1998, the 11 CT centers provided services to over 22,500 low-income Californians. More than a third of the participants used the centers for computer training; 13% used the CT to seek employment, and others used the CT program to obtain personally significant information. The report’s summary concluded that these CT programs provided much needed assets to the communities they served.

The anecdotal evidence found in the CIOF research project demonstrated that low-income participants have benefited from CT programs by improving their performance at school and preparing them for employment; the

programs also provided participants with a way to maintain a certain level of connectivity and reliably access information that enabled them to lead self-sufficient and productive lives (2001). A research study by Servon (2002) that surveyed 123 CTC managers found that three-quarters of the respondents targeted low-income populations and more than half offered programs for senior citizens and women.

The Deeper Problem

In the Benton Foundation's 1998 report *Losing Ground Bit by Bit* Keith Fulton, director for technology programs and policy for the National Urban League, states:

Society is an organism and communications networks are its nervous system. Just as the whole body suffers if some parts of it aren't able to communicate with the rest by nerves, society suffers if some individuals and communities are digitally disconnected. "There is value," Fulton argues, "in every community in the barrio and the ghetto, in Appalachia, in Chinatown, in uptown and downtown, and eastside and westside." (p.7)

The deeper problem is that many neighborhoods living in poverty and rural communities lack the infrastructure. United Church of Christ which studied patterns of telecommunication investments "found that, all too often, telephone and cable companies have moved quickly to wire wealthier suburbs with advanced systems, while poor, inner-city neighborhoods aren't upgraded." (Benton Foundation 1998, p.10) Without the technology

infrastructure rural and inner-cities can't gain the training or access needed to compete economically. The Office of Technology Assessment calls it the deconcentration of opportunity and concentration of poverty (Benton Foundation, 1998) a common formula for inequality in America. A more equitable solution will need to address these issues as well as the financial obstacles. Economics and community technologies are just part of the solution but the problem is really a societal responsibility.

CT Services & the Internet

Many CT programs are embedded within already established community-based organizations and use a holistic approach by enhancing the existing community services (Office of Vocational and Adult Education, 2002). Such CT programs go beyond providing access for technology and also act as resource and referral centers — connecting users to personally significant information that can improve their lives (2002). Most CT studies have focused primarily on the ability of CT programs to connect beneficiaries with the work force through computer training and job search. Servon's CTC survey revealed that CTCs place strong emphasis on education and job readiness.

A report to the Ford Foundation (Davies, Pinkett, Servon & Schwartz, 2003) recommends CT and Community Development (CD) agencies align their efforts to broaden their impact on community change. The report recommends CTCs form this synergy by functioning as public spaces that include gathering

spots for information and technology training and as a place for fostering community involvement and social interactions. *One More River to Cross* (2004) postulates that to be healthy and contributing members of society, everyone should have some way to access and use information technology. Access to information technology can help underserved people learn to use technology and teach them to apply technology to their daily lives in seeking and obtaining jobs, increasing their education level, finding and accessing health care services, planning finances, finding consumer information, and enjoying personal interests (Children's Partnership 2001, Benton Foundation 1997, Chow 1998).

With more and more low-income Americans gaining access to computers and the Internet through CT programs, Content Bank conducted a study to determine how low-income populations use the Internet, where they access technology, and what kinds of activities they use the technology to undertake (2000). Their investigation showed a high level of use among low-income Americans for self-improvement — online courses, job search or information. Of the 57% of Americans earning between \$10,000 and \$14,999 who use the Internet outside the home, the study found 20% use it for job-related tasks. The study concluded that underserved Americans desired access to online content that would help them improve their overall lives.

In response to the 2000 findings from Content Bank a new paradigm for bringing improved content to low-income populations and affordable technology

to communities can be found in a partnership between Verizon Avenue and the national nonprofit, One Economy Corporation. Together they are working to bring low-cost Internet access to the homes of low-income Americans (One Economy Corporation, 2004). Their partnership brings affordable broadband to multi-family properties in the Verizon service areas. One Economy has found that, when given a chance, reasonably priced, low-income families are willing to invest in and use technology. According to Rey Ramsey, CEO of One Economy Corporation “research shows that low-income people are more likely to use technology to improve the quality of living than higher-income people” (One Economy Corporation, 2004).

Josh Senyak and Albert Fong (2000) believe computer access for everyone is important, not because they are revolutionary, but because computers have become such a basic tool—increasingly necessary parts of our national infrastructure, phones, and highways. They are ordinary tools for the modern world.

So it doesn't matter, finally, whether everyone in America eventually owns a home computer and [DSL](#) line. What *does* matter is that all people have some way to access and use information technology, if and when needed, to meet the ordinary demands of life: to write a resume, buy a ticket, get a good price on a car purchase, send a note, or look up street directions. [Access](#) to technology then looks something like public access to libraries, recreation centers, and parks. It won't change the world. But it is one more factor that contributes to a community's overall quality of life. (Senyak & Fong, 2000)

Funding CT

Outside of government grants, foundation funding formed from corporate technology mergers such as the merger between SBC and Pacific Bell established the Community Technology Foundation of California (CTFC) in 1998 and generated \$50 million towards CT in California. Moreover, in 2001 a merger between GTE and Bell Atlantic formed Verizon and resulted in a Community Collaborative Fund managed by the California Consumer Protection Foundation (CCPF); The Fund generated \$25 million towards California CT (Verizon, 2001; CTFC, 2005). Such mergers must be approved by the California Public Utilities Company to insure provisions for the public interest; past approvals have resulted in the formation of CT foundations.

Recently, a new funding source has been slated following the passage of AB 855 in California (CCPF, 2004). CCPF noted that, the first initiative of its kind, AB 855 devotes 15% of revenues generated from leased wireless telecommunication facilities (e.g. cell towers on state property) to create a Digital Divide Fund. CCPF noted that this bill will eventually generate an estimated \$3 to \$6 million for the Digital Divide Fund annually, however it has only generated \$165,000 in its first year of 2004. While new funding sources are emerging, other funding sources from the government and foundations that helped to start-up CT programs have shifted their focus away from CT programs. The 2005 federal budget eliminated the Technology Opportunities Program — a federal program used to fund CT. Traditionally, private sector

technology industries have funded CT programs in areas where company employees work or reside; yet, recently many companies have shifted their funding to areas in developing countries (Melymuka, 2003). Gundrey's 2004 study explains the problem concisely:

According to a 1999 Foundation Center survey, less than 1% of foundation funding goes to technology. Human services (including youth) accounted for 25%; education, 20%; health, 12%; arts and culture, 14%, and the environment, 7%. If you are running a "technology program," you are severely limiting your funding options. (p. 1)

In the political and economic wake of the dot com bust, the shift from a democratic administration to a republican administration — that views the digital divide as a nearly solved problem, and the events following 9-11, CT have been experiencing a bust (Gordo, 2000).

Recommendation

CT programs, though fairly young, are known as the organizations with a mission to close the digital divide. How do we level the playing field in providing technology access to those most marginalized by society? How do we get government and industry involved in a community technology movement? The ZeroDivide Policy Group recommends the preparation of a statewide CT roadmap. This document is the first phase in making the CT road map a reality, by analyzing the history of CT, and interpreting the current state of CT so that

we can include underserved populations in a state wide vision of technologically healthy communities.

The CT roadmap will serve as a guide for policymakers in their decision-making process; it can demonstrate how to bring the best of what technology has to offer to those who lack it the most by offering the necessary resources, funding, alliances, and political influences. The benefits of CT programs revealed in these studies demonstrates a need for CT leaders, philanthropists, corporate sector patrons, and politicians to play an active role in ensuring these programs receive the sustained funding they need to continue providing benefits to future generations. In the current atmosphere of funding cut backs and more pressing national concerns—like homeland security and education— CT programs are at risk. The technology industry and the policy community can benefit by examining the value CT programs have brought to communities in their short history and to be part of the road map for ensuring that all of our diverse communities can be technologically healthy.

Although lack of resources in low-income communities is an important factor in the digital divide it does not explain the technology gap alone. Creating a method for measuring the impact of inequitable distribution of information technologies would help substantiate the mission of CT programs and assist in making equal access more of a priority to society.

People that are at a disadvantage need access and training on

information technology in order to be not just consumers but producers in today's economy. They need connectivity to communicate across multiple mediums and to participate in a democratic society. Maintaining access to CT program must be part of the plan to achieving universal access.

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ZFellows
Strategic Impact Project
Focus Group Summary Report

By

Micheline Wilcoxon

Background

Nine (9) leaders working in the field of community technology conducted nine separate focus groups in late 2004 throughout the state of California in an effort to understand the impact that technology is having on under-represented communities throughout California. These focus groups were conducted in communities that reflected the diversity of the state including demographic and geographic: rural, urban and suburban communities in northern, southern and central parts of the state. The focus group participants, totaling 90 individuals, represented a multitude of races: African American, Spanish Speaking, Asian, Anglo; and social groups: Homeless, Low-Income and Senior Citizen communities. The same questions were presented to all the focus groups, and were open-ended. Each focus group was given a ninety minute time frame to discuss their answers, issues, and concerns on the impact of technology in their communities.

How do you define technology?

Generally, all the participants from the focus groups defined technology as a broad tool that impacts all parts of life. Overall, the focus groups reported that they generally defined “technology” as a modern tool that is used to enhance all areas of their lives. Focus group participants saw technology impacting their lives through a variety of different forms, such as: cell phone usage, computers, space travel and various tools that would be considered technology-related.

The focus groups generally saw the effects of technology as having a positive impact on their lives, such as: improving communication and easier access to information. Along with the positive impact of “technology”, all the focus groups expressed concerns of the negative impact that technology could possibly have on their lives: focusing on privacy issues, and technology going too far in terms of replacing human interaction and controlling society. Also, most focus group participants expressed concerns about the negative impact of technology on the social aspects of their families, such as interfering with family social interactions.

How do you use technology?

Focus group participants were extremely insightful about how they reported using technology in their day to day lives. Generally, all groups defined the word “technology” very broadly and did not restrict the definition to only the use of computers and/or the Internet. The broad use of the term “technology” included: scientific, futuristic, consumer and information technology services and devices. All the focus groups reported using technology in many aspects of their lives. They had a great understanding that current technology is embedded in devices they use daily. They reported that technology has an impact on a broad array of

everyday tasks that support the interactive use of “simple to use technologies” such as: microwaves, fax machines, appliances and other common items that use technology but would not be considered advanced or complex technology. The groups also reported using complex computer technology that requires more training, such MS Office, GIS mapping, and using the Internet.

Where do you access technology and how would you describe the quality of that access?

Focus group participants reported accessing technology in a variety of locations within their communities: schools, libraries, home and community centers. Most of the participants reported that they access computer technology away from their homes. They reported that technology in libraries and schools is low quality. They defined low quality access in two ways:

- ***Number of Computers Available***

Limited number of computers that were available for use by clients. The number of accessible computers not being sufficient for the number of users; very limited time periods (30 minute on average); or inconsistent availability (there were not any computers available to use).

- ***Broadband vs. Narrow Band***

Narrow band access was another quality issue. Focus group participants recognized that to access internet technology via dial up was slow and reduced the quality of accessing content on the internet. Generally, they reported low quality of access at home because the only affordable method in which to access internet was dial-up.

All the focus group participants rated their access to technology via community technology centers as high quality access due to the fact that technology centers offered broadband. The centers often had a greater number of computers available for use which increased their probability of actually using the computer on a regular basis and for a longer period of time.

How do you benefit from using technology?

There were a great number of benefits from the use of technology reported by all the focus groups. But there were some benefits that were significant, as reported by all groups.

- ***Communication***

All the participants saw improved communication as an important benefit of using technology. Participants reported using email as a way of keeping in touch with family members in the US or overseas. In addition to improved communication, participants also reported that internet technology was a more affordable way of communicating with members of family.

- ***Employment***

All focus group participants reported that they use technology to seek employment. They talked about doing job searches on the internet or using word processing software to develop resumes.

- ***Access to information***

All groups reported the increased ability to access information using the internet. Participants reported accessing information in general; parents stated an increased access to information about their student academic progress; others talked about accessing news, employment sites, etc.

Some focus groups saw a benefit of using technology as a way to empower people that have limited mobility, such as senior citizens and the disabled. Participants saw internet technology as a useful tool for people with limited mobility to manage their everyday lives. Other benefits included online shopping, banking and other entertainment resources such as games and music.

What are the barriers to accessing technology?

All focus groups reported two primary barriers to technology: cost and language. Participants said that the initial cost of purchasing a computer was not the barrier, but the cost of upgrades and maintaining their computer was one of the biggest barriers. Issues presented by all focus groups were that technology changed too often and the need for updating was a consistent expense. The cost and upkeep of computer ownership was a barrier to accessing and using computers in homes.

Language was also reported as the second major barrier to technology. This was not just English to a foreign language barrier, but also the actual computer/technology language itself was a barrier to technology.

Other barriers to accessing technology included the physical ability to use the technology at locations where computer access was offered. Group participants

often referred to the limited numbers of hours of use in centers, libraries and schools. Participants stated that hours of operations for access points were limited to regular business hours which limited the times in which they could use computer technology.

Additional barriers included parent education, fear of technology and attitudes toward technology itself.

How do you use technology to access services and how can it impact your life when trying to access food, housing, employment, health services, etc.?

Overall, participants stated they used technology to access general information that impacted basic needs; but there was not one major area of need that was reported by all. All groups reported that using internet technology to access social and government services was easier and more convenient.

Participants used technology to access information on public transportation services offered in their communities. They reported using the internet to get bus schedules or flight information. However, transportation was not an overarching theme of the group. Probably because public transportation is not readily available in all communities, and not all areas in California offer online public transportation information.

Participants from a small number of focus groups mentioned using the internet to get information to search for affordable housing. One group participant mentioned using the internet to get information on purchasing a home.

However, a constant theme was that the internet made it easier and more convenient to access a variety of government and private social service programs that offered assistance. Other areas that participants mentioned were access to healthcare information and educational information.

What changes do you want to see to make sure you can have continued or improved access to technology and how do you recommend this be done?

Lower the cost of computer ownership. This was a constant idea that was talked about in all focus groups. Participants also talked about having more access to education on how to use technology.

Improve physical access to computer technology by increasing hours at centers, libraries and schools.

d. May 2005 Community Technology Summit Report

Organizations & Z-fellows that Participated in the Focus Groups:

Joel Roberts, People Assisting The Homeless(PATH), Davis Parks, Little Tokyo Service Center, Paul Lamb, Street Tech, Marvin Andrade, CARECEN, Julie Plevancic, Infonet TC, Leonard McNeil Multi-Cultural Family Resource Center, Micheline Wilcoxon, Community Technology Organizing Consortium, Jesse Salinas Community Resource Project, Inc, Rebecca Matthews, Love Center Ministries,



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Community Technology Summit

May 2005

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Purpose

The ZeroDivide Fellows (ZFellows) conducted the May 20, 2005 California Community Technology Summit to help define the Roadmap for Technologically Healthy Communities in California. The Roadmap will present a statewide vision for community technology. Other work conducted by the ZFellows to supplement the summit work includes 9 focus groups and a comprehensive literature review.

Process

The ZFellows invited community leaders from government, industry, academia, philanthropy, nonprofits, faith-based organizations and community technology to participate in the summit. The participants represented the rich diversity of the state's geographic regions and ethnicities who demonstrated a history of making significant contributions in the area of community technology.

After opening remarks by Micheline Wilcoxon, Paul Lamb provided background on

- Community Technology and its importance
- Policy developments
- Focus group work
- The State of Community Technology

The summit participants then worked in breakout groups, lead by volunteer facilitators and assisted by note-takers. The breakout group discussions lasted for 2 hours. In these groups the summit participants discussed and agreed upon the following questions

- What are the major components of a technologically healthy community?

- What are barriers to low-income and underserved communities in being part of this vision?
- What are the means to overcome these barriers?
- What are the steps in developing technologically healthy communities?
- What are the best make use of and market the roadmap?

After lunch, with Senator Alarcon as the key note speaker, each group reported out on their work. A synopsis of this work follows.

Results

Executive Summary

Although community technology was broadly defined as “projects that use technological tools in innovative ways to strengthen communities,” the summit participants mainly focused on *information* technology. Thus, when the term “technology” is used, it relates specifically to “information technology.”

The overarching factor in *all* the discussions was the need for a broader and more complete understanding and awareness of the significant contributions technology makes to the health of a community. Essentially, the summit participants related that technologically healthy communities provide greater opportunities for people to develop professionally and personally. *Conversely*, the lack of access to technology can generate social and economic inequality, and result in isolation.

In essence, the summit participants stated that accessible and available technology is a *quality of life indicator* for community health. The lack of understanding of the power and importance of this indicator is a major barrier to universal access. Thus, increasing awareness could be the major component in increasing technology access to underserved people

and underserved communities.

The following sections present the summit participant responses to the questions posed to them in breakout groups, namely,

- I. What are the components of a technologically healthy community?
- II. What are the barriers to underserved people and communities in being part of this vision?
- III. What are means to overcome these barriers?
- IV. What are the steps in developing technologically healthy communities?
- V. How can the roadmap be best used and marketed?

I. What are the components of a technologically healthy community?

The four breakout groups reported similar components of a technologically healthy community; namely that technology is (a) available and (b) accessible, thus assuring that it is relevant, and sustainable.

A. Availability

A key component to technologically healthy communities is having technology *available* at all levels. This means that the infrastructure is in place for the equipment, and that the equipment (hardware and applications) is in locations that are convenient and comfortable. Specifically,

Infrastructure

The best delivery system for the technology – both for public and personal access – should be omnipresent

□ Equipment

The most recent hardware and applications should be available for everyone who wants it

□ Location

Universal availability means that business and public centers and mobile units are convenient, comfortable and relatively private

Home-based availability assumes that infrastructure and equipment is available in people's homes

B. Accessibility

Although the technology may be available, it may not necessarily be accessible. Therefore, the summit participants stressed three major aspects that could make *available technology accessible*. These aspects are (i) economically, (ii) socially, and (iii) knowledge based.

1. Economic

For community technology to be accessible, it must be affordable and sustainable. In other words, the participants stated that community technology should provide universal, affordable access to home-based and private technology *in the long-term*. Not only should technology be available, but it must be upgraded in an affordable and timely manner.

2. Social

The aspects of social accessibility revolved around content relevance. The summit participants strongly expressed the need for content to reflect the diversity in culture and language – that the design be “user-centric.” They also stated that the end-user should be able to access technology despite his/her

Age

Language skills and/or native language

Education

Physical features, including:

Disabilities

Hygiene (e.g. *“many homeless people don’t have access to showers so they may not be socially acceptable and are often not allowed in libraries”*)

Furthermore, the summit participants stated that for trust to be built into the system, that community technology must be secure, private and non-monitored.

Finally, to guarantee that content is relevant to the end-users; the summit participants suggested that the roadmap address service provider integration. This would assure that all the elements of the entire social service network are connected efficiently, and thus would increase accessibility.

3. Knowledge

The third factor in assuring that the available community technology is also accessible is knowledge-based. Having community technology available in homes, private and public settings, and having the content be relevant and complete, does not necessarily assure accessibility. One must also know how to use the technology. Therefore, training for end-users is essential. The comprehensive skills training should be offered by qualified people to a wide range of competencies and skills. Additionally, it should be focused on individual needs.

II. What are the barriers to low-income and underserved communities in being part of this vision?

Summit participants cited the overarching problem of lack of awareness as a major barrier to underserved populations’ access to community

technology. Specifically, the participants pointed out the lack of general awareness regarding the importance for underserved persons to access community technology and the ramifications of not availing access. They also mentioned that although resources may be available, underserved people and service providers may not be aware of those resources.

Not surprisingly, the barriers to low-income and underserved people and communities gaining access to available community technology directly reflect the components of a technologically healthy community. Specifically, the infrastructure and equipment is often not available. If it is available, it is oftentimes not accessible because of cost.

Moreover, in many communities, the content is not socially or culturally relevant, or complete. What's more, qualified, consistent training to use community technology is often nonexistent.

The summit participants also mentioned market forces as another important barrier to delivering community technology to those who are underserved. Community technology infrastructure and equipment is generally privately owned and private corporations focus on shareholder value, i.e. profit. This profit motive that drives most private corporations does not necessarily translate well into community building for underserved populations and regions. The reason is that the profit margin is often small to non-existent in limited markets with limited resources, such as supplying infrastructure to rural areas or developing equipment for disabled persons.

III. What are the means to overcome these barriers?

The participants suggested several means to overcome these barriers.

A. Awareness

1. Seek national technology champions with the resources, recognition, clout and desire to build goodwill, emphasizing the importance of image on profitability.
2. Find a strong public leader to advocate for Public Policy

3. Assure community engagement to increase awareness, identify resources and advocate for change
 4. Develop a venue for intellectual exchange
- B. Availability and Affordability
1. Introduce low income tax credits to help low-income people afford the technology
 2. Establish economic incentives for corporations to bring infrastructure and equipment to low-income communities and underserved persons.
 3. Investigate means to access the infrastructure through long-term investment (e.g., revolving loans, venture capital)
- C. Market forces
1. Regard community technology as a utility to which everyone deserves equal access. This universal access will continue to be a problem unless delivering community technology is one of the following
 - a. Made profitable by using tax-incentives or subsidies
 - b. Publicly-controlled
 - c. Mandated through legislation or regulated
 2. Consider community capacity building to encourage communities to own their own community technology such as broad band networks and/or to establish private-public partnerships

IV. What are the steps in developing technologically healthy communities?

The summit participants suggested that the roadmap

- Prioritize the range of needs of clients
- Serve the ethnically, culturally, socially, geographically diverse client base
- Create a process that promotes objectivity and innovation
- Frame discussion in terms/language of the public benefits movement

The steps that the summit participants recommended to develop technologically healthy communities are similar to the steps used in strategic planning; (a) conduct research, (b) identify the strategic issues, (c) develop strategic intent and directions, (d) develop goals and objectives and identify resources and partners to help implement the plan, and (e) evaluate progress and modify the steps.

A. Conducting the Research

The participants suggested a multi-faceted comprehensive research approach of assessing community need, asset/ technology availability, policy enactment and best practice models.

1. Community assessment.

Summit participants suggested that the ZFellows discover what people need and want from community technology, and investigate means to reach “the unreachable” such as elders, people with disabilities and immigrants. Earlier this year, the fellows conducted some of this research by facilitating state-wide focus groups. The focus group questions were

- a. How do you define technology?
- b. How do you use technology?
- c. Where do you access technology and how would you describe the quality of that access?
- d. How do you benefit from using technology?
- e. What are the barriers to accessing technology?
- f. How do you use technology to access services and how can it impact your life when trying to access food, housing, employment, health services, etc.?
- g. What changes do you want to see to make sure you can have continued or improved access to technology and how do you recommend this be done?

2. Asset assessment

Very basically, map out what is available in the way of community technology to include at least

- h. Infrastructure
- i. Equipment – hardware and applications
- j. Emerging technology
- k. Resources
- l. Training

3. Policy assessment

- m. What policies are existent
- n. What opportunities are available for forming policies

4. Best practices model assessment

Examples include

- o. Policy
 - i. Philadelphia Universal Wireless
- p. Technology
 - i. Japan
 - ii. Norway

B Identifying Strategic Issues

Much of this work is complete. The focus group and summit participants listed the barriers to a technologically healthy community. Additionally, the literature review should complement the community and summit research.

C. Developing Strategic Intent and Direction

The ZFellows could use the background work conducted to create a clear, concise project objective statement and a vision statement for the roadmap. For the vision, the summit participants suggested that it depict how the world would be better with technologically healthy communities. The project objective statement should summarize the purpose of the work.

D. Developing Roadmap Goals and Objectives

When developing the goals and objectives, the summit participants suggested that the ZFellows' plan

1. Involves key stakeholders in the process without overburdening them
 - a. Forms Public/Private/Nonprofit Partnerships
 - b. Is inclusive when calling upon the experience and