



From **ACCESS** to

Outcomes

Raising the Aspirations for Technology Initiatives in Low-Income Communities

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Low-Income Communities

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A C K N O W L E D G M E N T S

Many people and organizations have provided instrumental help to the Morino Institute in its preparation of this paper. First, we would like to thank the dozens of community leaders, policymakers, technology experts, grantmakers, and academics who were kind enough to contribute countless hours of their time to an online community-technology discussion forum the Morino Institute hosted, through which many of the ideas presented here were honed and refined. (The complete list of participants is included at the end of this paper.) We also want to extend our thanks to Kit Collins, Elliot Maxwell, Anita Brown, Lisa Sullivan, and Bill Shore for their thoughtful reviews of and additions to this paper and to Greg Weiner for moderating our online discussion forum and for his invaluable editorial guidance.

I N T R O D U C T I O N

In just the past several years, businesses, governments, and nonprofit organizations have dedicated billions of dollars and countless hours to the goal of closing the “digital divide” and ensuring that new information and communication technologies benefit families in low-income communities. These efforts have engaged leaders from all political viewpoints and all walks of life—from school principals to US presidents, from community activists to Fortune 500 CEOs. They have helped many people understand that if we do not act, millions of urban and rural Americans will be left further and further behind as our nation races forward in the Information Age.

To date, most initiatives aimed at closing the digital divide have focused on providing low-income communities with greater access to computers, Internet connections, and other technologies. Yet technology is not an end in itself. The real opportunity before our society is to lift our sights beyond the goal of expanding access to technology and instead focus on *applying* technology to achieve the outcomes we seek: tangible and meaningful improvements in the standard of living of families who are now struggling to rise from the bottom rungs of our economy. The purpose of this paper is to make a case for why we must—and how we can—do just that.

To be sure, donated computers and Internet accounts can help expand the number of citizens who are familiar and comfortable with the computer technologies that are such a growing presence in our lives. But if we lift our ambitions, we can help people achieve much more than technological literacy; we can apply technology in targeted ways to help people meet fundamental needs, such as quality health care, effective schools, safe streets, and good jobs

that allow people to earn a decent wage as well as dignity and respect.

The United States now has a remarkable opportunity to marshal the resources and energies that have been summoned to the cause of closing the digital divide and create a powerful social movement capable of producing real improvements in the daily lives of millions of people who are living at the margins of our economy. The key is for our society to unite around a new set of aspirations for technology investments in and by low-income communities. In every case, we must ask the following questions:

- **Are we investing in technology for technology’s sake, or are we investing with real outcomes in mind?**
- **Are the intended outcomes only what outsiders think the community might want, or are they in fact what people living there see as top priorities?**
- **Are we investing with an overzealous faith in the promise of technology, or do we have a realistic appreciation for the challenges low-income communities face?**
- **Will our investments simply satisfy our desire to be philanthropic, or will they produce real improvements in people’s lives?**

Through this paper, we offer the Morino Institute’s outcomes-oriented point of view, presented in the form of ten key premises, as a starting point for those working to close digital and social divides. A preliminary version of this paper was first presented in a keynote speech by Mario Morino, chairman of the Morino Institute, to the Department of Commerce’s “Networks for People” conference in October 2000. The paper subsequently was refined with the help of more than 75 community leaders, policymakers, technology experts, grantmakers, and academics who were kind



enough to contribute to an online discussion forum the Morino Institute hosted from November 2000 to April 2001. (To see a list of participants and follow the forum's key discussion threads, visit www.morino.org/divides/participants.htm.)

Although this paper should be useful to any organization engaged in efforts to bring new tools and resources to low-income communities, it is very much rooted in our own experiences. Our views draw heavily on the knowledge developed over three decades by Mario Morino and Morino Institute staff members and advisors in designing, implementing, and managing technology-enabled solutions for corporate, government, educational, and research enterprises around the world.

Since the mid-1990s, the Morino Institute has participated in several dozen efforts to put technology to use to benefit low-income families. For example, one of the Institute's first activities, in 1994 and 1995, was a collaboration with Apple Computer to run three-day "Ties that Bind" conferences to help individuals representing schools, nonprofits, foundations, businesses, and government agencies learn how computer-based networks could be used to stimulate civic engagement and action. In addition, the Institute has worked with Leadership, Education, and Athletics in Partnership (LEAP) to support the creation of its first technology-enriched learning centers, in New Haven, Connecticut, and has supported efforts to empower displaced agricultural workers in Nebraska through the use of community networks. Using the knowledge gained from those experiences, the Institute led the Youth Development Collaborative Pilot, a comprehensive two-year effort to establish Networked Learning Centers in several community-based organizations serving the children of Washington, DC.

Lessons from Corporate America

More than anything else, the Institute's point of view is informed by the strong sense that the lessons corporate America has learned about integrating information technology into its operations and strategies can be helpful to nonprofit organizations struggling to do the same.

Beginning in the 1960s, corporations began to invest heavily in computers and other information technologies. In many cases, however, the early investments did not live up to their promise. In the 1970s, some individual firms realized gains in productivity, and in the 1980s, productivity gains were apparent across a few key sectors. But it was not until the mid-1990s that the massive investments in information technology actually had an impact on national measures of productivity.

Why did it take so long for information technology to give a noticeable boost to the economy and to the living standards of average workers? Although companies found that it was relatively easy to install new computer systems, they had a hard time melding the technology, processes, and people into solutions that produced tangible outcomes and clear benefits to their businesses. As policy expert Andrew Blau put it in a highly informative report for the Surdna Foundation, "Money spent on [information technology] without investments in organizational change and training" was largely wasted.

As knowledge of the potential of technology spread from the technologists to the line executives and staffs—and as companies began to invest even more in training and development than they did in hardware and software—a magical series of events began to unfold. People and organizations began to understand what they had, and



their imagination, resourcefulness, and entrepreneurial instinct kicked in. They saw that they could apply technology in innovative ways to achieve hard outcomes, such as increased sales, lower costs, and faster response to customer demand.

And then things got even more interesting. The real explosion in innovation and productivity came as people within those enterprises became connected—via the Internet—to others within their organizations and in their industries and markets. Empowered by technology, people triggered a fundamental revolution in the way enterprises worked, from financial services on Wall Street to retail distribution systems on Main Street.

But it took time. Fundamental change required far more than simply plunking down a computer in front of every employee. The magic occurred when individuals came to understand the potential of technology, acquired the skills to use it, and were wired together. We believe

that those who aspire to close digital and social divides can help unleash that same kind of innovation and change in low-income communities.

Harnessing the Collective Will

Of course, corporate America had a distinct advantage in the application of technology: Competitive pressures demanded that businesses respond to the opportunities that technology introduced. The nonprofit world has no such competitive trigger. Instead, our society must use collective will as a motivating force.

If the disparate interests working to bridge the digital divide can come together and summon that collective will, we can provide a powerful push to help the United States respond to the opportunities that technology offers low-income communities. We can help communities apply technology to speed delivery of vital human services, attract new resources, facilitate neighborhood planning and community organizing, and build learning networks through which people with similar interests can share their diverse experiences.

Technology can spark community change so powerful that it will shatter the status quo. Such change will require much more than access to new tools; it will require a rigorous new focus on outcomes along with smart, large-scale investments to help communities achieve those outcomes.

After all, the measure of our nation's progress in narrowing its fundamental disparities will have little to do with how many computers and Internet connections we install. It will have everything to do with how well we can enable those who are less fortunate to elevate their own lives and the lives of their children. We hope the following premises and examples illustrate how we can meet that challenge head on. ■



Focus on Narrowing Social – Not Digital – Divides

Wide gaps in economic and educational opportunity have existed in this nation for generations and will continue for generations more. Because of those disparities, large technological gaps have developed as well.

It is time to stop focusing so intensively on the technology divide, for the real differences we should seek to narrow are America's core *social* divides: the grave disparities in economic opportunity, education, health, safety, housing, employment, and even transportation. No easy ways exist to eliminate these social disparities; if easy answers were available, the disparities would be significantly smaller than they are today. But without question, technology could do far more to help. New technologies, applied in targeted ways, can make individual and group efforts to narrow social divides far more effective.

Fight the Hype

"The best computer access in the world won't get you into [college] if you can't read and write. And while thousands of programming positions are available on-line, they'll probably go to somebody else if you don't have the resources to set up your childcare, a decent suit of clothes, and a ride to the interview. Technology really hasn't changed the fundamental rules of the game very much. The digital divide is real, but it's hardly the most serious divide for Americans seeking a better life for themselves and their families."

– Josh Senyak and Albert Fong, nonprofit technology consultants, writing for TechSoup.org



Concentrate on Achieving Concrete Outcomes

Efforts to help low-income communities gain the benefits of technology must be directed toward achieving specific outcomes — in other words, tangible improvements in people's standards of living. Many initiatives focus on helping people increase their technological literacy, which can be an important goal. But the application of technology also can contribute to a wide range of health, economic, and educational outcomes, from increased vaccination rates to improved job placement to higher test scores.

Focusing on outcomes is easiest when the application of technology represents just one component of a comprehensive solution to a need. It is much harder to focus on outcomes when launching a stand-alone technology project, such as providing wiring for a school or community center.

A Visionary Approach to Achieving Health Outcomes

In 1996, doctors at Charles R. Drew University, in South Central Los Angeles, reinvented the house call.

At the time, there were only seven ophthalmologists in all of South Central Los Angeles — not nearly enough to treat the area's 1.4 million residents. Given this shortage, most people with eye problems waited until their ailment became dangerously acute and then showed up in area trauma centers.

In partnership with Nortel Networks, Drew University launched a pilot telemedicine clinic in the Los Carmelitos housing development and matched a specific technology with a specific health need.

When a patient arrives at the clinic, a technician and first-year ophthalmology resident perform an initial screening and take images of the eye with sophisticated but easy-to-operate equipment. The images are immediately sent over high-speed digital lines to a board-certified ophthalmologist at the King/Drew Medical Center, who can speak to the patient over a real-time video connection, prescribe a treatment, and schedule a more intensive in-person examination if necessary. According to the project's director, Dr. Charles Flowers, "Most of the examination is completed while the patient is still at Carmelitos. If something looks suspicious, we can call for a high-magnification scan immediately."

Evaluations have demonstrated that the tele-ophthalmology program allows doctors to make highly accurate diagnoses, and patients have shown a remarkable 90 percent follow-up rate. The model has been replicated in three additional Los Angeles clinics, which now monitor more than 2,300 people, many of whom would have experienced severe visual impairment or blindness if not for the clinic.



Work Through Trusted Leaders in the Community

No matter how impressive the technology or how well-intended the motives, technology initiatives imposed on a community by outsiders are often ineffective. One clear path to achieving real-life outcomes with technology is through the existing veins of strength and vitality in the community—the organizations and individuals who have already established bonds of trust and have the proper channels to reach a relatively large number of people. As a result, those who hope to promote the use of technology in low-income communities should devote a great deal of time to identifying and then cultivating relationships with key local leaders and organizations.

Sowing Seeds of Trust in Rural Nebraska

When Steve Buttress founded the Community Networking Institute (CNI) to help remote rural towns in Nebraska apply technology to overcome their economic isolation, he quickly set out to “map” the leadership in targeted communities. He cross-referenced leaders of churches, civic clubs, and other groups, looking for people with influential roles in multiple segments of the community. Buttress found that leaders fell into a few basic roles, such as “recruiters,” who knew and invited other participants; “communicators,” on whom he could rely to spread key messages; and “blockers,” who might be opposed to change in the community. His most important finding of the mapping process, though, was that the majority of communities, especially small ones, did not have strong leadership bases at all. To address the shortage, Buttress worked with the Nebraska Rural Development Commission to create Community Builders, an initiative in which older community leaders identify, mentor, and develop younger potential leaders.

When trusted local leaders reached out to others in their communities—and when the communities realized that their futures were a matter of local will, vision, and effort—the project began to take off. In one rural community, for example, a retired pharmacist used his local contacts to convince the hospital to donate space for a technology center. By working through trusted local leaders, Buttress was able to build an online network that connected rural manufacturers, enabling them to make joint purchases at a discount. Another network enabled veterinarians in widely separated rural communities to help each other solve business problems.

“Finding the right people to work with was really the determining factor in whether we were going to be successful in a community,” Buttress says.



Support Efforts by Communities to Strengthen Their Capacity

Some low-income communities are not ready to take advantage of new technologies. In those communities, the social fabric is threadbare and people can focus on little beyond the most basic needs for food, clothing, and shelter. In such settings, the wisest investments are those that build the community's "capacity"—that is, its basic assets, such as affordable housing, health clinics, community organizations, public transportation, banking services, retail stores, roads, and sewage systems.

The hard truth is that until at least a basic level of community capacity is in place, large-scale technology initiatives have little hope of success. The only proven application of technology when community capacity is very low is to arm local activists and other "change agents" with communication tools such as email lists, which can connect them to like-minded members of other communities that have faced similar challenges.

Building a Community Block by Block in New York City

No factor is more crucial to a community's strength than the condition of its housing, and no city exemplifies this dynamic more clearly than New York.

In the early 1990s, after three decades of widespread real estate divestment and abandonment, the city owned the title to tens of thousands of dilapidated housing units in some of America's toughest, most crime-ridden neighborhoods. Over the past seven years, the Neighborhood Entrepreneurs Program (NEP), a public-private venture of the New York City Partnership, has achieved remarkable success in building community capacity by rehabilitating more than 3,500 dilapidated homes in neighborhoods once given up for dead, including Harlem's 140th Street, Brooklyn's Bedford-Stuyvesant, and the Bronx's Hunts Point.

To bring about profound, neighborhood-wide change, NEP targets clusters of city-owned buildings and then offers market incentives to help small, local entrepreneurs acquire, refurbish, and manage them. By providing affordable housing and entrepreneurship opportunities, the program has enhanced community capacity in direct ways. It has also done so indirectly, by catalyzing retail development, job creation, capital formation, and community organizing.

Helping to meet the fundamental need for safe, affordable housing has provided the foundation upon which more ambitious efforts, including those that involve clever applications of technology, can be built.



Apply Technology to Help Build Capacity

Once a community has achieved at least a basic level of capacity, technology can be a powerful tool for the next stage of capacity-building efforts. Technology can help in three ways:

- If we are willing to provide long-term resources and support, targeted applications of technology can help government agencies, community groups, and other organizations deliver services more effectively and at a lower cost.
- Technology applications can enable certain individuals, especially “early adopters,” to spark catalytic change in their communities.
- Technology applications can help create and sustain online and offline networks that introduce and interconnect people who are working toward similar goals.

Connecting the Hills and Hollows of Appalachia

Communities in the Appalachian countryside of Southeast Ohio have been devastated by the collapse of the mining industries that were once their mainstay. “It’s not only the economic disaster,” explains Russ Combs, director of the Technology Ventures division of the Appalachian Center for Economic Networks (ACEnet) in Athens, Ohio. “It’s the emotional disaster.” Technology is helping to build the capacity of those communities by strengthening their inherent assets. ACEnet has built a so-called “flexible network” that enables disparate food service businesses throughout the Appalachian region to generate more business by communicating with and learning from each other.

The network — which includes an electronic mailing list, web pages, email, and online databases of vendors and customers — is designed to enable businesses to communicate without centralized control. For example, businesses that make different kinds of food products, such as local bakeries and sausage-making operations, use the network to share information on suppliers and distributors. One Appalachian salsa company used ACEnet’s vendor database as well as other components of the network (e.g., an online forum from which they learned about trade shows) to grow from a mom-and-pop shop with annual sales of \$60,000 to an eight-person operation that is expected to rack up more than \$600,000 in sales this year.

“There is simply no regimen to it,” Combs says of ACEnet’s flexible network. “Everybody contacts everybody, and everybody works together for the common good. If we all work together at it, we all win.”



Recognize That Technology Requires Its Own Capacity

As anyone who has ever attempted to set up an Internet account or pick up the pieces after a computer system crash knows all too well, information technology is not nearly smart enough to be easy to use. Therefore, investments in technology must go far beyond funding for hardware, software, and wires; they must include significant additional funding to help people understand, apply, and manage the technology.

For most projects, no more than one-third of the funding should go to technology itself, leaving more than two-thirds for educating staff and developing programs that help organizations tap technology's true potential. In addition, large investments are sorely needed to help build and strengthen intermediary organizations that can better assist low-income communities in their efforts to acquire, apply, and support technology.

Educating the Educators in Washington, DC

In 1998, Calvary Bilingual Multicultural Learning Center, a highly respected organization providing daycare, after-school programs, training, and other services in the ethnically diverse Columbia Heights neighborhood of Washington, DC, decided to take its use of technology to a new level.

Calvary had provided basic technology instruction through a computer lab consisting of nine stand-alone PCs and three Macintoshes; the lab had dial-up Internet access but little access to broader web-based resources. Through a two-year partnership with the Morino Institute called the Youth Development Collaborative Pilot (YDC), Calvary improved its ability to apply technology, infusing it throughout the organization and its programs.

Working with YDC, Calvary built a Networked Learning Center to serve as a platform for a variety of educational programs. A significant amount of YDC resources were invested in management and staff development, including 18 months of intensive training.

Senior managers at Calvary were assigned personal technology mentors. YDC specialists worked closely with two Calvary staffers in particular—Marta Urquilla, the youth development director, and Jomo Graham, the technology director, both of whom had worked extensively in youth development and technology. Urquilla, Graham, and other key staff members met regularly with YDC specialists to collaborate on strategies for “project-based learning,” an approach through which students apply a range of technology tools, from the Internet to digital cameras, to explore a given topic.

The partnership yielded more than better programs; it also helped produce a stronger youth-serving organization. Staff members for school-age programs, who once relied on photocopied templates, now create documents on computers and do research online. Email is an especially useful communication tool for Calvary's largely part-time staff, many of whom work on staggered schedules while attending school. Staff members now use email as well as internal electronic mailing lists called “e-groups” to share ideas, make decisions, plan programs, and learn about each other's activities. The teaching materials from YDC training sessions are available online at www.youthlearn.org, and Calvary uses the materials as a resource both for orienting new employees and for conducting annual strategic planning. The organization has developed new databases to keep track of the students and families it serves. And Calvary's managers have a better understanding of technology's potential for not only teaching technical skills but also for helping people improve their lives.



Make the Case for Applied Technology

Individuals and organizations who are committed to closing social divides should devote considerable time and effort to building the case for the relevance of technology within low-income communities. Given the evangelical fervor for technology that infuses many digital divide efforts, some may regard this step as superfluous. The truth is that most people, especially those in low-income communities, see little reason to embrace technology.

Worse still, many people fear or distrust technology. A September 2000 report by the Pew Internet and American Life Project found that 57 percent of people without Internet access do not plan to log on. Cost is a factor for some potential users, but not for as many as one might think. In fact, UCLA's Center for Communication Policy reported in October 2000 that only 9.1 percent of nonusers cite cost as the reason for not being online.

A crucial step for encouraging people to get over their fear and distrust is showing that technology can be highly relevant to their lives. One can make the case for technology in low-income communities in many different ways, including ambitious public-awareness campaigns and large-scale community organizing efforts.

It's *Not* Preaching to the Choir

In September 2000, MIT graduate students Randal Pinkett and Richard O'Bryant launched an ambitious, well-designed technology partnership with the residents of Camfield Estates, a newly renovated low- to moderate-income housing development in Roxbury, Massachusetts. The idea was to help the residents, who already had a strong tenants association, build an even stronger sense of community by making it much easier for them to share knowledge, skills, and resources through a user-friendly online network.

Thanks to support from the W.K. Kellogg Foundation, Hewlett-Packard, Williams Consulting Services, RCN Telecom Services, and many others, Pinkett and O'Bryant were able to offer residents a remarkable deal: In exchange for attending eight weeks of comprehensive computer courses, they would receive a free new computer (worth \$1,000) and free high-speed Internet access (worth \$50 a month). Project team members, including Pinkett, O'Bryant, residents, and tenants association leaders, advertised the offer through flyers and a town hall meeting of the tenants association. Even so, residents in only half of the occupied units signed up.

"Despite the incentives," says Pinkett, "the remaining half of the development either did not see the relevance, simply were not interested... or thought it was a scam." More intensive outreach efforts have increased participation rates to about 75 percent. "For those who were not the early adopters, it has required nothing short of going door-to-door to demonstrate relevance," says Pinkett.



Make Major Changes in Public Policy

Although public officials have been quick to grasp the importance of helping low-income communities participate in the digital revolution, public policies have lagged behind public pronouncements. To achieve meaningful national outcomes rather than just a set of small, isolated victories, federal and state governments should do much more to provide frameworks and incentives to help focus philanthropic resources and stimulate private investment in low-income areas. For example:

- To bring down costs, governments should do more to ensure highly competitive markets for technology.
- Governments should dramatically increase the scale of their own funding for technology-related initiatives, not just by expanding the handful of existing, isolated programs but by seeking to integrate technology into the broad range of programs that serve low-income Americans.
- To help demonstrate the value of technology and break down barriers to its adoption, governments should take more aggressive steps to digitize government services and open new avenues of interaction with citizens.
- Drawing upon the model the federal government successfully used in responding to the Y2K challenge, the president should empower a high-level official to coordinate technology programs across government agencies and ensure greater transfer of technology-enabled solutions.

Two Opportunities for Government to Spur Key Markets

A classic example of an area in which governments could do far more to catalyze private-sector efforts in underresourced communities is telemedicine. Only about a dozen states currently provide reimbursements for telemedical services under Medicaid, the primary health insurance program for low-income families. As a result, hospitals often have little incentive to make expensive up-front investments in tele-radiology, tele-homecare, tele-ophthalmology, and other well-established telemedical applications. By agreeing to cover those services under Medicaid, state governments could spur investments in telemedicine that could yield enormous cost savings for Medicaid and real care improvements for patients.

Another area involves high-speed Internet connections, without which telemedicine, distance learning, and many other advanced applications are far more difficult. In affluent areas, which experience high consumer demand for high-speed Internet connections, telecommunication companies have great incentive to rip up streets and lay fiber optic cable as fast as they can—or build the infrastructure for wireless communications. In poor urban and rural communities, the consumer demand is not as obvious; therefore, far less investment in communications infrastructure takes place.

The federal government could use several approaches to ensure that poor communities are not bypassed. For example, Congress could create tax incentives for wireless and broadband development for low-income communities. Alternatively, the Federal Communications Commission could, under the authority granted to it in Section 706 of the Telecommunications Act of 1996, ease the regulatory burden on telecommunications providers who agree to deploy broadband in low-income communities.

Whatever “carrots” governments offer, the incentives should be as meaningful as the ones used to ensure the electrification of rural America. Broadband and wireless communications soon will become just as important for economic development as electricity was in the early 20th century.



Dramatically Expand the Availability of Capital

To address a social challenge of this size, the sheer magnitude of available capital must increase exponentially, and that capital must be invested strategically. As stated in Premise Eight, federal and state governments can and must step up to the plate—but they cannot do it alone.

Many new philanthropic models could help. For example, we believe that the philanthropic and high-tech communities should join forces to create a pool of equity capital for outcomes-based technology investments in and by low-income communities—as well as to develop a pool of talent that can provide strategic management assistance to augment the capital. With participation from the largest foundations and businesses, this “social venture fund” could grow to a billion dollars or more.

Regardless of whether old or new models are used, the philanthropic sector simply must do far more to promote innovation in the use of technology to achieve social outcomes. Just as the Robert Wood Johnson Foundation has done in the field of health care, all philanthropic givers should take a close look at how they can help nonprofit organizations apply technology to achieve outcomes in their respective fields of focus, from housing to education to crime prevention to child care. Today, many grantmakers view technology as little more than an additional overhead expense.

New Models of Capital Formation

Over the past decade, several new concepts in philanthropic giving have begun to move from design to execution.

Social venture funds, the main vehicle of the new and as-yet unproven “venture philanthropy” movement, attempt to catalyze social change by strengthening community-based organizations. Investors in social venture funds are not looking for financial returns on their investment, but they seek meaningful (yet not unrealistically high) social returns in the form of real-life human outcomes. They make a substantial commitment of both money and managerial expertise and are guided by the philosophy that helping to build capacity is the best way to achieve breakthrough results. In the words of management experts Christine Letts, Alan Grossman, and William Ryan, “Behind every effective program, and especially every sustained effective program, is an organization that performs well. The challenge of large-scale impact can be reformulated as the challenge of helping more nonprofits perform better.”

Social investment funds represent a different model. Investors in such funds can earn competitive financial returns while at the same time helping to realize social returns. The Calvert funds, which are mutual funds with a civic mission, are pioneers in this field. Fund managers buy and sell stocks and bonds in for-profit companies that have “an expanded view of corporate responsibility.” They also allocate a small portion of assets for investments in low-income housing; micro-enterprise projects; and small, untried, for-profit enterprises that have identified potentially profitable ways of addressing social problems.

Then there are *community development venture funds*, like Silicon Valley Community Ventures. Here, too, investors expect at least a modest financial, as well as high social, return on investment. SVCV is a venture capital firm, however, not a family of mutual funds. It provides capital and management expertise to for-profit companies that provide substantial economic benefits to a group of targeted San Francisco Bay Area communities, such as Oakland and East Palo Alto. Among the companies in SVCV’s investment portfolio, approximately half are led by entrepreneurs who grew up or live in the target communities, and more than half of all people hired by those firms come from the surrounding low-income neighborhoods.



Dramatically Broaden the Scope of Efforts

In order to apply technology effectively in low-income communities to help people improve their lives, we must be prepared to confront challenges that are far greater than most public- and private-sector leaders have yet acknowledged.

Community needs are hauntingly large, and community capacity is dangerously weak. Technology is becoming more expensive and complex. Technical talent is in acutely short supply. The nation has few large-scale providers capable of serving the need for technology-enabled solutions in low-income communities.

The problems cannot be solved piecemeal; they require comprehensive solutions that integrate people, processes, and technology. They demand a fundamental shift in thought and action in public policy, philanthropy, and corporate and nonprofit leadership. Anything less than a massive mobilization of resources, financing, talent, and innovation is destined to produce only incremental and isolated victories.

Chile's Ambitious *Enlaces* Program

Many US firms have helped lead the Information Revolution, but other nations have made a greater national priority of harnessing information technology's potential for social change. The Republic of Chile offers a good example. Although prosperous by Latin American standards, Chile has a per capita income only one-third as large as that of the United States. Over the past decade, Chile has fostered a domestic telecommunications market that is one of the most competitive in the world. They have seen technology as a key way of ensuring the country's place at the table with—and, in the case of its important agricultural exports, on the table of—the world's leading economies.

Today, Chile is home to perhaps the world's most ambitious experiment in the use of technology to support the reform and modernization of an entire national educational system. The Chilean Ministry of Education has partnered with several telecommunications firms and the World Bank to invest more than \$100 million in a computer and social network called *Enlaces* (a Spanish word meaning "links"). Despite enormous challenges facing the Chilean education system, the Enlaces network is helping to improve quality, efficiency, and equity of primary and secondary education throughout the country.

Like the Universal Service (e-rate) program in the United States, the Enlaces program has enabled thousands of poor schools to connect to the Internet. Enlaces goes far beyond ensuring access, though. It provides extensive training to help teachers integrate the technology into the school curriculum and design collaborative learning projects that involve children all over the world. It also offers online and offline technical support, up-to-date classroom materials, and practical tools for keeping track of attendance and automating other mundane management tasks. Most important, it brings together teachers and students from across the country into a unified—and unifying—learning community, helping teachers and students share their experiences in discussion groups and speeding reforms to some of the most isolated Andean highland communities.

According to early program evaluations, Enlaces has begun to achieve impressive outcomes, including reductions in drop-out rates, increases in cognitive development, and enhanced job prospects.

It is not clear whether the United States could or should create its own version of Enlaces. But it is clear that Enlaces's widespread impact is a direct, if not inevitable, result of big thinking at a national level.



C O N C L U S I O N

Malcolm Gladwell's book *The Tipping Point* illustrates the premise that movements and ideas, like tall objects, often have tipping points; once they hit that precise point, dramatic change can come about quickly. The book has struck a powerful chord with entrepreneurs and change agents from both for-profit and nonprofit enterprises.

Where is the tipping point for America's digital divide efforts? What will it take for the nonprofit sector's investments in information technology to begin to achieve hard and fast outcomes on a national level? No one can say for sure, but trends in the business world may provide some hints.

Business investments in information technology grew modestly between 1987 and 1994, rising from 3.6 percent of business income in 1987 to 4.0 percent of business income in 1994. Business investment in information technology exploded after 1994, rising from 4.2 percent of income in 1995 to 6.3 percent in 2000, an increase of 50 percent. It is probably no coincidence that this explosion in spending occurred as information technology was beginning to make its imprint on national productivity growth.

Assuming for the moment that the tipping point for nonprofit organizations is roughly comparable to that for businesses, what would it take to spark widespread change in the social-service sector of the nonprofit world? Back-of-the-envelope estimates suggest that it would take an additional \$3 billion per year in funding for technology and another \$10 billion in training, development, and support for that technology.

As a society, we must summon the finances and moral courage to push toward this potential tipping point. The window of opportunity is small, and the price of inaction would almost certainly be far steeper than the cost of action. The consequences of inaction would take two forms. First, enormous opportunities would be missed, through the loss of financial and social contributions that people in low-income communities could be empowered to make. Second, tens of billions of dollars would be added to entitlement payments and other social payments. It is no exaggeration to conclude that if we do not dramatically increase the size and effectiveness of our efforts, we could cement a permanent underclass in our society.

The challenges are large, but so is the opportunity. Efforts to close the digital divide have mobilized resources and sparked attention across the nation. Now is the time to leverage the resources already committed to this cause and use them as a down payment toward the far more sizeable investments that will be required. Together, we can unite our efforts around shared expectations and goals and create a powerful social movement. Together, we can work to create a broad, grassroots awareness that it is crucial for technology applications to be firmly rooted in the real needs and realistic capacities of the low-income communities they are meant to serve. Together, we can achieve lasting improvements in the lives of America's most hard-pressed citizens. ■

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PREMISE ONE :

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PREMISE TWO :

Concentrate on Achieving Concrete Outcomes

Charles R. Drew University of Medicine and Science
telemedicine initiative:

www.cdrewu.edu/telemedicine/

Contact: Dr. Charles Flowers, Director of Refractive Surgery,
Charles R. Drew University of Medicine and Science.

Phone: (323) 357-3449

Nortel Networks' information on the Drew University
telemedicine initiative:
www.nortelnetworks.com/solutions/education/collateral/bc_drew.pdf

King/Drew Medical Center:
<http://ladhs.org/mlk/>

PREMISE THREE :

Work Through Trusted Leaders in the Community

Community Networking Institute (CNI):

Contact: Steve Buttress, Executive Director.

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Community Builders:

www.rdc.state.ne.us/

Contact: Amy Larrick, Community Builders Coordinator, Nebraska
Rural Development Commission.

Phone: (402) 471-8786

Email: alarrick@mail.state.ne.us

PREMISE FOUR :

Support Efforts by Communities to Strengthen Their Capacity

Neighborhood Entrepreneurs Program (NEP), New York City
Housing Partnership:

www.nycp.org/NEP.htm

Information on NEP from the Drucker Foundation's Nonprofit
Innovation Discovery site:

pdf.org/innovation/innovation/innovation.asp?innov_id=81

Information on NEP from the John F. Kennedy School
of Government's Innovations in American Government
Awards page:

www.innovations.harvard.edu/winners/1999/nepny99.htm

PREMISE FIVE :

Apply Technology to Help Build Capacity

Appalachian Center for Economic Networks (ACEnet):

www.acenetworks.org

Contact: Russ Combs, Director, Tech Ventures Division.

Phone: (740) 592-3854

Email: russc@acenetworks.org

José Madrid Salsa:

www.josemadridsalsa.com/



P R E M I S E S I X :

Recognize That Technology Requires Its Own Capacity

Calvary Bilingual Multicultural Learning Center:
www.cbmlc.org

Morino Institute's Youth Development Collaborative Pilot (YDC):
www.youthlearn.org/about/ydc_intro.html

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Randal Pinkett:
web.mit.edu/rpinkett/www/

Richard O'Bryant:
web.mit.edu/crcp/who/researchers.html#richard

Camfield Estates online network:
www.camfieldestates.net

P R E M I S E E I G H T :

Make Major Changes in Public Policy

American Telemedicine Association:
www.americantelemed.org

Contact: Jonathan Linkous, Executive Director.
Phone: (202) 223-3333
Email: jlinkous@americantelemed.org

Telecommunications Act of 1996:
thomas.loc.gov/cgi-bin/query/z?c104:S.652.ENR:

P R E M I S E N I N E :

Dramatically Expand the Availability of Capital

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www.hbsp.harvard.edu/products/hbr/janfeb99/99108a.html
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Calvert Social Investment Funds:
www.calvertgroup.com/sri.html

Contact: John Blanchard, Jr., Senior Vice President, Social Products and Policy.
Phone: (301) 951-4800
Email: john.blanchard@calvert.com

Silicon Valley Community Ventures (SVCV):
www.svcv.org/

Contact: Lauren Sudeall, Operations and Marketing Manager.
Phone: (415) 863-4305
Email: lsudeall@svcvc.org

P R E M I S E T E N :

Dramatically Broaden the Scope of Efforts

Enlaces Program:
www.enlaces.cl/index.html

Contact: Dr. J. Enrique Hinostraza, National Deputy Coordinator.
Phone: 56 45 325252
(if dialing from the United States, add 011 before the number)
Email: ehinost@iie.ufro.cl

US Universal Service Program:
www.universalservice.org

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