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**INFORMATION TECHNOLOGY AND DISADVANTAGED
COMMUNITIES: THE PROSPECTS FOR EFFECTIVE
PHILANTHROPY**

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Information Technology and Disadvantaged Communities: The Prospects for Effective Philanthropy

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Abstract

This paper is an integrated analysis of the Digital Divide and current research on the effectiveness of public programs designed to bring IT to disadvantaged communities. The paper highlights when, where, why, and how the public and non-profit sectors can best build social capital through information technology. The discussion and findings presented in the paper will help organizations with their strategic planning and programming by allowing them to (a) more carefully define and target their IT programs, (b) design these programs to be more effective, and (c) have a greater awareness about how to assess the effectiveness of their IT programs and investments.

Perhaps the greatest promise of the Internet and new information technologies (IT) is their potential to more successfully engage disadvantaged communities in American civic, cultural, and economic life. For decades certain groups of American society have traditionally been both underclass and “information poor”—these groups include many rural communities, the housebound, the poor, the urban underclass, prisoners, and some ethnic minorities. Without a doubt information poverty has a profound impact on individuals’ lives; without access to quality information and information networks, people suffer from compromised decision making with respect to their health, employment, parenting, education, and family circumstances, to name but a few. New information technologies promise to be “the great equalizer,” and (skeptics aside) dozens of case studies more than adequately demonstrate the personal and community power that can result from access to IT by underserved populations (Westat, undated; Westat 1999; Westat 2000; Chow, Ellis, Walker, and Wise, 2000; Mark, Cornebise, and Wahl, 1997; Schuler, 1994; Chapman and Rhodes, 1997; Schön, Sanyal, and Mitchell, 1999; Irving, McGuire-Rivera, and

Downs 1999; Rohde, McGuire-Rivera, and Downs, 2000; Hawley, 2000; Breeden and others, 1998; Mele, 1999).

These success stories, and the failures too, reflect literally thousands of philanthropic experiments across the country. Computer donation programs, community technology centers, network neighborhoods, school-based activities and many others all attempt to remedy past inequality in information access and use. However, there is little *systematic* analysis and understanding about how effective these programs are, when they work and don't work, and what program design features are most important. This paper tries to remedy this gap by providing some insights into effective public IT programming by the non-profit sector. The following key points are made:

- Universal access to IT is progressing slowly among the least advantaged groups in American society, and the independent sector has (and will continue to have) a prominent role in providing alternative points of access for underserved communities.
- Effective philanthropy is not just about access.
- Preliminary research evidence suggests several critical conditions for success.
- Non-profit organizations need clear and strict guidelines for their IT programs.
- Non-IT public programs may be more effective in some circumstances.

The Digital Divide and Key Issues of Access

The latest *Falling Through the Net* report issued by the National Telecommunications and Information Administration (NTIA 2000) indicates that half of all U.S. households now have at least one home computer, and that most of those households also have Internet access (the equivalent of 41.5 percent of all U.S. homes). However, disparities by income and ethnicity persist, and in some states (particularly in the South) the gaps between rich and poor and whites and non-whites vastly exceed national averages (Bohland, Papadakis, and Worrall, 2000). Across

the U.S., the poorest Americans have one-eighth the levels of home computer ownership and Internet access as the most affluent, and on average, whites are 1.5 times more likely to have these IT resources at home than blacks or Hispanics. The NTIA data also consistently show that poor and ethnic households tend to rely much more heavily on community-based access to IT than other groups.¹

Our response to this persistent Digital Divide has been nothing short of astonishing—it is easily one of the quietest social movements in American history. Without fanfare or visible media coverage, over the past five years *thousands* of community technology centers have sprung up across the country and can be found in shopping malls, low-income housing projects, churches, schools, libraries, YMCAs, and the back of roving vans (as was the case in one program in the South Bronx). Hundreds more community networks can also be found, ranging from city-wide freenets (such as in Austin, Cleveland, and Charlotte) to specialized local networks for healthcare, education, and economic development. Most notable about this movement is that efforts to provide IT access to those on the wrong side of the Divide are (a) heavily focused on communities and community-building, as opposed to universal access in the home, (b) they derive their funding largely from philanthropic giving, and (c) they often emerge from grassroots efforts. The key issues of access to information technology by underserved groups thus reflects these three notable trends and developments:

- Although the gap is narrowing, universal access to home-based IT is progressing slowly among the most disadvantaged groups.
- Community-based solutions have emerged as viable, alternative points of access for underserved populations.
- The role of the non-profit sector is central to providing and sustaining access to IT by traditionally disadvantaged groups in American society.

¹ This finding is also supported by the CTCNet studies on patterns of use in community technology centers. See Chow, Ellis, Walker, and Wise (2000).

The implication of all three developments is that the independent sector has (and will continue to have) a prominent role in providing alternative points of access for underserved communities. For at least the next 5-10 years, closing the Digital Divide will require an ongoing expansion of access for underserved communities, a strengthening of the effectiveness of existing programs, and a vigilant eye toward keeping the ground that has been gained.

Effective Philanthropy is Not Just About Access

Most experts now agree that the Digital Divide is only minimally about access in the hardware and software sense. Other critical dimensions include computer literacy, information literacy, and appropriate content (Bohland, Papadakis, and Worrall, 2000; The Children's Partnership, 2000). This shift in thinking reflects a growing understanding that information technologies are a tool to other goals, whether that is a job for a specific individual, better healthcare for a community, or reduced crime in a neighborhood. The majority of case studies suggest that the most successful IT programs are those that focus on building human capital, creating community empowerment, and/or solving specific and concrete problems.

Another way of thinking about this issue is to consider the other factors—or complementary assets—that need to be in place for IT to have an impact. For example, adequate teacher training has long been identified as one of the key barriers to the effective use of IT in classrooms and student learning: the technology itself is useless without the ability of a teacher to understand and use it. Similarly, at-risk youth have a host of troubles that cannot be remedied solely by a computer, and successful IT programs for these children include heavy doses of mentoring, esteem-building, and discipline.

The case studies and evidence on successful programs clearly indicate that IT hardware, software, and infrastructure alone are not magic bullets for empowering disadvantaged citizens and communities. There are too many documented cases and anecdotal stories of IT centers that lay idle and unused; indeed, underutilization of community technology centers and networks is a persistent problem in public IT programs generally (Westat, 1999). What the current evidence *does* suggest is that successful philanthropy links IT access to three broader humanistic goals:

- 1. Building Human Capital:** The employment and skills training that people need to get jobs both generally and/or in the IT industry, including the IT skills needed to get jobs, such as making a resume or conducting job searches on the Internet. Building human capital also includes education-oriented projects.
- 2. Community Empowerment:** The ability of communities to do for themselves what they previously could not do, or to increase social capital within the community. Examples include the creation of community health networks, digital democracy activities, and the installation of information systems that enable communities to conduct higher order decision-making (such as the GIS system that allowed Native Americans on the Flathead Reservation in Montana to take over the management of their forest resources from the Bureau of Indian Affairs; see Rohde, McGuire-Rivera, and Downs, 2000).
- 3. Solving Specific Problems or Needs:** IT equipment and training that address problems identified by groups in need; these are often unique to particular communities. Examples include the Rural Coalition of farmers in Alabama and Mississippi, which markets family farm produce over the Internet, and an online support group for teenage single mothers.

In short, effective philanthropy is not just about providing access to equipment and networks.

Access must be embedded in a larger context of social activities that provide the training, mentoring, management, supervision, and interaction that achieves more significant human goals for liberation and empowerment.

**Lessons from the CTCs and
Community Network
Movement**

There have, unfortunately, been no prominent studies that attempt to integrate the multiple case studies on public IT projects and distill them into a methodologically valid set of best practices or design principles. The few cross-study comparisons that have been done focus largely on success stories, so it is not entirely clear what critical factors distinguish failures from successes. Nevertheless, a few critical conditions of success seem to stand out. Westat (1999) provides the following in their analysis of twelve innovative projects funded by the National Telecommunications and Information Administration; these are the factors that were common to all IT projects that had managed to expand themselves or survive beyond the length of the grant period:

- a) Projects had stakeholder support and end user buy-in; in other words, the people most likely to support and/or participate in the program knew about it ahead of time and helped plan the project.
- b) Projects were focused on fixing a real and visible problem understood by the community.
- c) Projects had a long-term plan that included sustainability as a goal.
- d) Projects applied a portfolio of best practices, including—
 - Conducting a needs assessment.
 - Conducting a feasibility study prior to final program design.
 - Involving end users and stakeholders in the decision making and implementation processes.
 - Regarding the technology as a tool for a social goal, and not an end in itself.
 - Collecting data that can be used to demonstrate project performance and effectiveness.

In addition to these success factors, public IT projects often face a set of predictable problems and barriers to success. These include problems with the physical telecommunications infrastructure in communities that delayed the technical implementation of projects; the underutilization of program activities by end users; difficulty in obtaining stakeholder and end

user support and buy-in; high rates of staff turnover; difficulty in delineating the roles and responsibilities of partners and partner follow through; and predictable and unpredictable time delays (Westat, 1999).

Building Effective IT Programming

IT projects are especially attractive for nonprofit organizations because they can often achieve several goals at one time—not only do participants build discrete IT skills that enhance their employability and preparedness for the workforce, but they also build human and social capital. People who utilize public IT programs and resources often report higher self-esteem, a growing awareness of personal goals and responsibilities, and personal empowerment of varying kinds. Communities benefit in a host of ways, including greater civic participation and attentiveness (Kavanaugh and Patterson, 2000). For communities and neighborhoods that can be characterized as hard-to-serve, underserved, or disadvantaged, effective IT programs are clearly an instrument for community development and a partial remedy to the complex psychological and social dynamics that perpetuate the underclass.

Precisely for these reasons, nonprofits should be particularly cautious in their approach to public IT projects. It is easy to get caught up in the promise of the technology and the hearsay of success, and to forget that many projects fail and facilities go underutilized. Ten guiding principles should be followed to maximize the potential of philanthropic spending and the likelihood that funds will make a difference in people's lives, that projects are sustainable, and that programs are cost effective:

- 1) Nonprofits should have at least one grants officer with expertise in public IT programs to more effectively evaluate the potential success of a proposed project.²
- 2) Project proposals that have equipment components (hardware, software, networks) should contain an evaluation of the compatibility of the local telecommunications infrastructure with the proposed project.
- 3) Foundations should expect proposals to contain clear *social* (not technical) goals with measurable performance objectives as part of the funding requirements.
- 4) For projects that are not one-time interventions, evidence of sustainability or a plan for sustainability should be expected.
- 5) Projects should be needs-driven and contain evidence of a needs assessment.
- 6) The complementary assets necessary for a successful program should be identified as part of the project—what training, education, mentoring, management, and social interaction is required to leverage the technology? Is it clear that the grantees even understand the non-technical requirements of their project?
- 7) Projects should demonstrate that stakeholders and end users have been involved in the planning process.
- 8) Projects that are not start-ups should provide evaluation/assessment information—what are the outcomes of past activities?
- 9) Start-up projects should contain an assessment/evaluation plan.
- 10) When possible, foundations should be pro-active in building the capacity of communities to manage and evaluate their IT projects.

By way of example, consider an equipment request of \$40,000 to purchase 30 laptops for disadvantaged grade school children. The children would own these computers permanently as part of a program to improve their school performance and to give them the same technological advantages as more affluent classmates. A savvy grants officer would look for (a) evidence that teachers, parents, and (perhaps) social workers have been involved in discussions about the projects; (b) clear and measurable objectives for success, e.g., grades, attendance, drop out rates, and so on; (c) a demonstration that technical support is available to children and their families for

² A list of online and print resources for public IT programming will be made available at the conference.

using the equipment and software; (d) evidence that children in this school or district actually need computers for successful academic achievement (or, alternatively, there are clear social stigmas attached to not having a computer); (e) an evaluation plan, (f) the availability of affordable Internet connections to these families, and so on. In addition, if this is not to be a one-time intervention, how will this program be funded in the future to expand and include other children?

The Potential Opportunity Costs of IT Programming

As a final matter, one issue that is *often* neglected in IT projects and programming is the opportunity cost of these funds. In other words, what projects and programs are being given up for IT, and might these alternatives achieve the same results (or better) for less money? For example, smaller class sizes, lower teacher-to-student ratios, peer tutors, and adult mentoring can strengthen academic achievement. Using the computer example above, what else could be bought for \$40,000 that might create higher school performance for more than 30 children, or create enhanced performance for less cost? Could a teacher's aide in the classroom accomplish more? (It certainly costs less than \$40,000.)

Similarly, at-risk youth benefit from mentors, a safe after school environment, discipline, and being engaged in just about any activity that motivates them, which can be designing web pages, athletics, theater and drama, working on farms, and dozens of other well-established activities. The \$15,000 it takes to equip a multimedia lab that motivates six teens may be spent on a special theater program that motivates a dozen or more. The opportunity cost here is equivalent to "losing" the opportunity to prevent six or more children from dropping out or

failing at school. And at the moment, web page design is certainly not a precondition to successful and rewarding employment. We must be careful not to privilege what are actually basic and easily taught skills over activities that can also accomplish character-building, self-esteem, and achievement.

As the scope and cost of IT programming increases (say we move from a few thousand dollars to hundreds of thousands or millions), then the opportunity costs become greater, and the more the size of the community served and the scope of benefits becomes an issue. As one analyst pointedly put it, “is closing the Digital Divide more important than health care?” (Macharia 2000).

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