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Inner City Networking: Models and Opportunities

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NOTE: At the time of publication, the author Anu Vedantham was affiliated with National Telecommunications and Information Administration. Currently, she is a staff member of the UPenn Libraries at the University of Pennsylvania.

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Abstract
Information technologies are fast becoming an essential part of most sectors of the American economy. Today, more than half of the nation's work force uses computers on the job. Having begun as internal systems in large corporations and universities, computer networks have been embraced by small businesses, individuals, and the non-profit sector. Community organizations have been able to use the new technologies in innovative ways to meet some of the social challenges present in today's inner cities. In the process of adopting these technologies, community organizations have changed the ways they are used and perceived, integrating them into their work in creative and non-traditional ways.

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Inner-city networking: Models and opportunities

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Inner-City Networking: Models and Opportunities

Judith Sparrow and Anu Vedantham

INFORMATION technologies are fast becoming an essential part of most sectors of the American economy. Today, more than half of the nation's work force uses computers on the job. Having begun as internal systems in large corporations and universities, computer networks have been embraced by small businesses, individuals, and the non-profit sector. Community organizations have been able to use the new technologies in innovative ways to meet some of the social challenges present in today's inner cities. In the process of adopting these technologies, community organizations have changed the ways they are used and perceived, integrating them into their work in creative and non-traditional ways.

How Far Has the Information Revolution Advanced?

Information technologies include basic telephone service, personal computing, and computer networking. Although these technologies are becoming everyday conveniences for many Americans, some communities are being left out. Disparities exist in levels of access between rich and poor and between suburban and inner-city residents.

Basic telephone service is available today to 92 percent of American households. However, the poorest households in central cities have a much lower telephone penetration rate of 79.8 percent, and the overall rate in urban areas is only 81.7 percent.

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Looking at educational technology, the top 20 percent of schools have nine times as many computers per student as do the bottom 20 percent. Large schools, urban schools, private and parochial schools, and schools with large numbers of Hispanic students have lower than average ratios of computers to students. In home computer ownership, while 33 to 37 million of the nation's 97 million households own at least one computer, computer ownership among the nation's 15 million lowest-income households is under ten percent.

Information Infrastructure Task Force *Industry Outlook, 1995*

"The Information Superhighway"

The evolving National Information Infrastructure (NII) is perhaps most easily identified with the Internet, the largest global computer network of networks. The Internet began as a Department of Defense experiment on networks that could survive a nuclear attack and has since grown at a tremendous pace into a decentralized, almost anarchic, structure. In 1983, there were 200 computers connected to the Internet. Today, the Internet encompasses about 50,000 networks worldwide and connects about 5 million computers. The evolution of the Internet has emphasized individual expression and provided an atmosphere that encourages diversity of opinions. Typically, users have free and unlimited access to thousands of discussion groups on an infinite range of subjects. However, the general public has had very limited access to the Internet, and the majority of today's Internet users are highly educated white males.

Cerf

Poor Americans, particularly residents of inner cities, are significantly under-represented in many indicators of information technologies. The Information Infrastructure Task Force (IITF), a federal multiagency entity, has documented many of these trends in *Putting the Information Infrastructure to Work*. All of these statistics indicate that we are a long way from achieving electronic equity.

Information Infrastructure Task Force

What Can Community-Based Organizations Contribute?

Inner-city communities face formidable problems today. Senator Bill Bradley describes our inner cities as "places where plummeting incomes, skyrocketing unemployment, deteriorating physical conditions and an absence of meaning in people's lives [come] together at the barrel of a gun, places where fear covers the streets like a sheet of ice." Although computer networking may seem irrelevant to these urgent issues, well-structured projects that combine community participation with skill-building can make concrete positive changes in urban neighborhoods.

Bradley

As part of their larger mission to address poverty, crime, and other social issues, community-based organizations (CBOs) are taking steps

to address the disparities in access to information technologies faced by residents in urban neighborhoods. CBOs provide an opportunity for residents to come together, and they have the capacity to engage neighbors in the struggle to resolve problems within the community.

The Telecommunications and Information Infrastructure Assistance Program (TIIAP) of the National Telecommunications and Information Administration (NTIA) at the U.S. Department of Commerce is a major federal initiative that provides funding for non-profit organizations such as CBOs, schools, and libraries to conduct innovative projects in community networking. In 1994, TIIAP funded 92 projects across the nation with a total of $24.4 million and, as we describe in more detail later, many of the first of the TIIAP-funded projects have provided models on how to effectively mobilize communities and improve their access to information technologies. In October 1995, TIIAP awarded $35.7 million to an additional 117 projects in the second grant round. TIIAP funds projects in a wide range of areas including community development, lifelong learning, responsive public services, and health.

TIIAP received more than 1,000 applications in its first year and more than 1,800 in its second year. The level of interest in the program indicates the need for funding for telecommunications projects in the non-profit sector. Given the high level of competition for scarce resources, a hallmark of TIIAP has been the support and dissemination of model projects—projects that implement new concepts on a small scale and that can then be applied in other communities and on a larger scale, possibly through support from private funding. TIIAP has been given the task of reducing disparities between the so-called "information haves" and "have-nots." As such, TIIAP places strong emphasis on reaching underserved communities that face high rates of poverty—in urban as well as in rural areas. In 1995, TIIAP awarded $6 million to projects that focussed on inner-city communities.

Goals of Community Networking in the Inner City

Community networks can help communities work toward positive economic or social change through the power of information and the potential of electronic communications. Too often, the focus is more on hardware or software than on the ways community networks can be used as tools to engage young people or develop lines of communication among community leaders. In reality, it is the human connections and organizational commitment that ensures the success of a community network.

Community Building

Inner-city communities are being torn apart by lack of communication at the local level. Lack of capital and increased crime have reduced the availability of meeting places such as community centers and recreation facilities. Through the effective use of telecommunications, CBOs can hold electronic meetings to focus on education, jobs, recreation, housing, health, and community wellness, and can start to build bonds among and within communities.

A project that has successfully engaged an entire community is the pioneering Public Electronic Network (PEN) in Santa Monica, California. PEN was the first free government-sponsored interactive communications system in the nation and was actively made accessible to all residents through public terminals, offices, and modems from the home. Using a simple text-based system and participatory discussion groups, PEN offered extensive information designed to meet residents' needs including housing referrals, legal services, and recreation programs.

The initial interest in creating the PEN system came from residents who wanted a community electronic mail system. PEN users can exchange e-mail to communicate with each other and with city government officials in more than 40 offices. They can also participate in electronic conferences with other users. A number of conferences have been held since the first "Homeless Conference" in 1989, including a "Leisure Conference" and one on "Japan." Because it provides public terminals to all residents, including the homeless, PEN empowers people who do not customarily have a voice in the community. Through PEN, several thousand residents came together to discuss a range of critical local concerns, and the community was able to create enough synergy to build a facility that provided shower and locker facilities for the city's homeless and, later, a job-training center.

Creating Community Ownership

A project is unlikely to survive for long without the development of strong commitment and sense of ownership in the community involved. If the residents of an inner-city neighborhood are not actively involved in all aspects of the design and implementation of the solution, they may well respond with skepticism, alienation, or apathy to the final system. Projects developed without active input from the community often overlook critical issues and fail in the long run. Furthermore, residents need to see tangible results from a community computer network, such as a successful job placement program or improved human service delivery.

A TIIAP project in Denver, Colorado has embarked on a creative planning process that brings all the segments of the community together

to discuss information technology. The local PBS station, the TIIAP grantee, included the homeless and very poor residents of Denver in a series of focus groups that sought to identify problems where telecommunications technology could provide a solution. Through the discussion of what information technologies could do to solve concrete problems, residents presented their visions of the ideal neighborhood and shared ideas on ways to work toward the community's goals. This project illustrates how bringing diverse groups, including those not traditionally involved, into the planning process can change the status quo; the planning process became a way for people to discuss issues of mutual concern.

A 1995 TIIAP grantee, the Metropolitan Area Advisory Committee (MAAC) project in San Diego, California, illustrates the point that a project that has been well accepted by the community can often attract corporate support as it becomes more viable. The MAAC project is a multi-purpose social service agency that has served San Diego for 30 years. Created as a Community Action Agency, MAAC focuses on the particular needs of the lowest income communities in the county, operating programs in economic development, entrepreneurial training, affordable family and special needs housing, job training, and youth employment, among others. Because MAAC has involved community organizations, neighborhood entrepreneurs, city staff, and local foundations in its evolution, it has begun to attract support from foundations and corporations. Collaboration has proved to be the hallmark of MAAC.

Economic Development

Taking a project from an inspiring vision to a reliable, working system requires solid investment of capital. Most non-profit organizations face tight budget constraints and often suffer high uncertainty regarding future income. The large initial investments that are often required to set up a telecommunications system are difficult for non-profit organizations to bear alone. TIIAP requires a one-to-one commitment of matching funds and places emphasis on creative partnerships in order to bolster the sustainability of community networking projects.

Many TIIAP projects focus on the economic revitalization of a community. In Chicago, for example, the Community Information Consortium is putting information about the Home Mortgage Disclosure Act (HMDA) online and linking HMDA to an existing network, the Neighborhood Early Warning System (NEWS). This information will significantly increase the capacity of local communities to eliminate discriminatory lending practices and promote neighborhood reinvestment. By drawing attention to inequities in investment practices, the Consortium serves as a watchdog for community residents.

In many cases, public-private partnerships have proven to be very successful at bringing in capital to inner-city communities. Large computer manufacturers, telephone companies, and cable industries have found many advantages in helping non-profit organizations put together novel demonstration projects; a successful project is the best showcase for their products. Also, partnerships that start with a single project can reduce the isolation of inner-city neighborhoods in the long run.

Charlotte's Web, a TIIAP-funded project in North Carolina, has brought together a dynamic group of organizations including Time-Warner Cable, Southwestern Bell, the local school district, Johnson C. Smith University and several other local colleges, and the local public television station, WVTI. The core organization of Charlotte's Web is the Public Library of Charlotte and Mecklenburg County, and this library system has successfully reached far beyond its traditional functions to form extremely creative partnerships. By bringing together a range of local and regional interests, Charlotte's Web has built up an array of programs that serve many different parts of the community, including a highly successful job training program at a homeless shelter in Charlotte. In its first year, the most popular service offered by Charlotte's Web proved to be its job listings, and in its second year, the organization plans to also offer on-line applications and resume critiques. Charlotte's Web is also branching out in its second year to help teachers in the area's elementary and high schools with teaching methodology and curricula that introduce students to the Internet and other computing technologies.

Challenges Faced by Community Networks in the Inner City

Bringing networking technology to an inner-city neighborhood often requires a very different look at the design and use of the technology as well as at the training and end-user customization needed. Urban organizations face several issues that corporate and academic network builders never have to confront. In tackling these challenges, CBOs have arrived at new models for the use of information technologies.

Limited Literacy and Non-English Speakers

Early in the century, newspapers in foreign languages helped newly arrived immigrants become familiar with American culture. Once again, many of our largest cities are populated with immigrants, mostly from Asian and Latin American countries, who speak little or no English. Additionally, the rate of functional illiteracy is extremely high

in many inner cities. Creative use of multimedia and customized software helps to engage people who cannot read or who are not fluent in English. Graphical interfaces such as the World Wide Web (WWW) and high-tech video and audio demonstrations are also helpful in creating interest in a low-literacy audience.

Two CBOs, Plugged In in East Palo Alto, California and LEAP (Leadership, Education, and Athletics in Partnership) in New Haven, Connecticut, are conducting a TIIAP project that investigates ways to motivate inner-city youth through the use of multimedia computing. Through this project, youth of different ages from eight to fifteen are learning to work in groups to produce multimedia presentations using World Wide Web exhibits, artwork, and video. Graphics-based educational software helps young children learn to read, and the glamour of fairly sophisticated technology brings youth together to discuss and face difficult social issues as well. Plugged In and LEAP have both established active computing centers that offer full Internet access and multi-media capabilities to neighborhood residents on a walk-in basis or through structured classes. Both centers have proven to be extremely popular with residents, with the children often leading their parents to the centers.

Technological Intimidation

Urban organizations face a more nervous group of users than corporate and academic networks. In order for a system to be integrated into people's lives for the long term, a strong focus on training and end-user support is essential. Reliable software support also becomes much more important when the end-users are fearful and are, therefore, more likely to ignore broken equipment than to try to fix it. Unfortunately, non-profit organizations are often the least able to afford expensive service contracts. Also, systems that offer practical, useful information provide more incentive for users to overcome initial nervousness and to invest the time and effort necessary. Community-based computer networks have to create greater incentives for use than their workplace counterparts; they must offer concrete value to their prospective users.

The Urban League of Metropolitan Seattle is conducting a 1995 TIIAP project that will pair up high school students with mentors from high-technology firms in the Seattle area. Mentors will provide a "job shadowing" experience for the youngsters and will introduce them to the technology one-on-one. Such an in-depth mentoring relationship will provide each student with intense tutoring and with an opportunity to ask questions and learn about practical applications. In addition, the students will visit two employment sites to see firsthand how these technologies are used in the workplace.

Preparing for Obsolescence

Since non-profits have higher "opportunity costs" for their computing funds, the decisions they make can be very difficult. Non-profit organizations may not have the expertise in-house to stay abreast of the latest in computer technology. Even though funds may be scarce, non-profits are learning quickly that information technology has become a crucial requirement for their work.

The National Cristina Foundation (NCF) is conducting a 1995 TIIAP project that will set up a national system for organizing the donations of used computer equipment from corporations to the non-profit sector. NCF has been recycling used equipment at the local level for several years and has developed a system for matching the hardware and software capabilities of donors to the needs of recipient organizations. This helps organizations receive appropriate equipment at very low cost. By building a network of private donors and non-profit and public recipients, NCF also helps to build training partnerships.

Networking for the Future

Community builders need to explore the possibilities of information technology—after a realistic and thorough assessment of the particular community's needs. Information technology can be a tool used for information sharing to enhance community-building activities, for increasing public access to information, and for improving service delivery within the community at easily accessible sites. The "fairness of access" issue includes the wiring of houses or communities to the larger network, the affordability of equipment and software needed to use the network, affordable monthly rates, and the availability of training to achieve the necessary level of media literacy. Most importantly, it includes people's understanding of information technology applications, whether it is for their own personal interest, their education, or their economic development.

As noted in the examples above, information technologies are tools, not solutions to problems. The problems faced by distressed communities are complex and include education, job placement, economic development, language barriers, rising crime rates, and more. These problems demand a comprehensive approach, and information technologies provide only one strategy. Communities must also develop consistent and diverse funding sources, have residents participate in revitalization efforts, form collaborations among community organizations, and make organizational changes where necessary to respond to the increasing number and complexity of programs.

Community networking projects have shown how information technologies can be used effectively. They have created models that should now be employed in a wide range of settings; their effectiveness should be evaluated; and their successes should be disseminated.

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