

## Chapter 1

### INTRODUCTION TO THE PROBLEM

#### IDENTIFYING THE GAP IN ACCESS

Is lack of access to information technology leaving disenfranchised groups even further behind? Sophisticated information technology is no longer confined to the realm of Star Trek or affordable only to top-level executives. Anyone with a modem-equipped home computer can now hitchhike along the information superhighway relatively inexpensively. Computers are as much a part of an office workstation as a telephone, and ownership of home computers continues to increase. As prices for computers continue to drop, overall access to both computers and to the Internet continues to grow “for people in all demographic groups and geographic locations” (NTIA 1999, xiii). According to the U.S. Department of Commerce National Telecommunications and Information Administration (NTIA), “at the end of 1998, over 40 percent of American households owned computers, and one-quarter of all households had Internet access” (NTIA 1999, xiii). “The Internet,” say Novak and Hoffman, “is expected to do no less than virtually transform society” (1998, 1). But accessibility is far from universal.

Current patterns of access to information technology (IT) hint at a disturbing story in which information “haves” and information “have-nots” are separated along lines of race, socioeconomic status, education level, household type, and geographic location (NTIA 1999, Doctor 1994). Catchphrases such as “the digital divide,” “information apartheid,” and “information poverty” have been coined to capture the nature of this problem and to harness the attention of policymakers and community activists.

*Falling through the Net: Defining the Digital Divide*, the third in a series of reports published by the NTIA reports that “a digital divide still exists and, in many cases, is actually *widening* over time” (NTIA 1999, xii). According to the NTIA, “groups that were already connected (e.g., higher-income, more educated, White and Asian/Pacific Islander households) are now far more connected, while those with lower rates have increased less quickly” (NTIA 1999, 8). The report shows that, although overall access to IT is increasing at a rapid rate, particular kinds of households are gaining access while others are not. Specifically, “minorities, low-income persons, the less educated, and children of single-parent households, particularly when they reside in rural areas or central cities, are among the groups that lack access to information resources” (NTIA 1999, xii).

Graham and Marvin explain that “these inequalities in access to telecommunications networks are important because they influence the ability of people to participate in any meaningful fashion within modern information-based society” (1996: 190). A recent report published by the Benton Foundation states that although “kids in wealthier households may not take access to technology . . . for granted, the lack of access to up-to-date computers in low-income communities and to affordable Internet service in rural areas leaves many people cut off from good jobs and the chance to participate in the affairs of the broader society” (Goslee 1998, iv). The Office of Technology Assessment described the effect as “the concentration of poverty and deconcentration of opportunity” (cited in Goslee 1998, 3).

The following key findings are excerpted directly from the latest NTIA report (1999, xiii):

- Households with incomes of \$75,000 and higher are more than *twenty times* more likely to have access to the Internet than those at the lowest income levels, and more than *nine times* as likely to have a computer at home.
- Whites are more likely to have access to the Internet from home than Blacks or Hispanics have from *any* location.
- Black and Hispanic households are approximately *one-third* as likely to have home Internet access as households of Asian/Pacific Islander descent, and roughly *two-fifths* as likely as White households.
- The gaps between White and Hispanic households, and between White and Black households, are now more than six percentage points larger than they were in 1994.
- The digital divides based on education and income also have increased in the last year alone. Between 1997 and 1998, the divide between those at the highest and lowest education levels increased 25 percent, and the divide between those at the highest and lowest income levels grew 29 percent.

Practitioners and experts who participated in our fieldwork confirm that the digital divide is a real problem. They tend to recognize that an economic gap already exists between the groups of people who have access to IT and those who do not. Toni Williams (1999) of the Austin Learning Academy (ALA) says, “there is already a gap there. If we don’t want to widen it any more, we should try to give everybody equitable access”. Connie Seibert (1999), an ALA teacher, puts it this way: “If people don’t have access, then they aren’t even on the same playing field”.

Although students are more likely than any income or educational group to have used the Web in the past six months—presumably because they have access at school—the race gap in access is widest for students. Among high school and college students, 73 percent of white students own a home computer, but only 33 percent of African American students do (Novak and Hoffman 1998, 7). According to Novak and Hoffman (1998), the difference persists even when results are statistically adjusted for students’ reported household income—“household income does not explain race differences in home computer ownership” (Novak and Hoffman 1998, 7). A recent *Washington Post* story reported that “students with limited or no access to computers are falling behind in skills that educators and parents worry will cost them later” (Goslee 1998, 5).

Other recent studies show a troubling relationship between race and income. A 1998 study conducted at Vanderbilt University “indicates that racial inequities in computer ownership and Internet access jump significantly when household incomes drop below \$40,000. In such cases, African Americans were less than half as likely as Whites to own a home computer and about 60 percent as likely to have Internet access” (cited in Goslee 1998, 3). This gap diminishes when household income is \$75,000 and higher. For these Americans, the divide between Whites and Blacks has narrowed considerably in the last year but still exists (NTIA 1999, xiv).

Unfortunately, most studies—most notably the NTIA reports—neglect the gender aspect of the digital divide. Early research showed a wide gap between access by men and women: a 1995 Guerrilla Girls poster claimed that, at that point, the Internet was “84.5 percent male and 82.3 percent white.” Several women’s groups, most notably Webgrrrls, have been created in response to this gap. With respect to teleworking and economic changes, Graham and Marvin note that “Those at the upper end of the teleworking experience—those in control—tend to be men, while those at the lower end—those who are being controlled—tend to be women” (1996, 200). Clearly, much more research needs to be done to determine why this gap exists and how men and women experience IT differently.

## **EXPLAINING THE GAP**

Several factors help to explain the existence and persistence of the digital divide. These factors interact with each other to keep certain groups from having equal access to IT.

### **Money**

One factor is money. People in low-income areas cannot afford computers and the monthly charges necessary to obtain Internet access. Computer prices have dropped steadily in recent years, but a savings of even \$500 still does not make computer ownership affordable for many poor families. Families also need money to maintain their computers and to purchase software and peripherals. In addition, the \$20 per month required for Internet access is out of the question for many. The NTIA study found that when those with computers at home were asked why they did not have Internet access, the most common response was that the household’s occupants didn’t want such access (25.7 percent) (1999, 38). The second most common response had to do with cost (16.8 percent). The lower a household’s income, the more likely the respondent was to cite cost as the reason for not having Internet access (NTIA 1999, 39).

In addition, the Internet is primarily oriented toward consumers, which means that the overwhelming majority of sites are geared to attract white men. Graham and Marvin state that “As information becomes a vital resource, it is being commodified and traded at a price, with access being determined by one’s ability to pay. Market-based mechanisms for allocating access to information services means inevitably stark ‘information inequality’” (1996, 202–3).

There is evidence that, as prices drop, more and more people purchase computers. Indeed, personal computer (PC) ownership in the United States is now at 42.1 percent, up from 24.1 percent in 1994 and 36.6 percent in 1997 (NTIA 1999, 5). However, although a growing sector of the society perceives computer ownership as a necessity, poor families have no choice but to see it as a luxury.

## **Unequal Investment in Infrastructure**

Investment in critical infrastructure is much lower in poor urban areas and rural regions than it is in wealthier areas. According to Goslee, “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” (1998, 2). This inequitable provision of infrastructure is a form of market failure; private companies will invest in infrastructure in areas where they are most likely to yield the highest returns on their investment. Although it may be unprofitable to invest in the infrastructure of low-income areas, failure to serve these areas creates an inequitable situation requiring government intervention. We return to this issue in our policy recommendations in chapter 8.

Indeed, although information technology is often thought of as something that transcends geographic boundaries, the same places that are characterized by economic poverty also tend to suffer from information poverty. Graham and Marvin note that “inequalities in physical and electronic spaces tend to be mutually reinforcing” (1996, 191).

## **Lack of Understanding of the Problems of Access**

Existing public-sector attempts to address the problem of the digital divide, while welcome, demonstrate a failure to understand the complexity of the issue. For example, the e-rate, which is discussed at greater length in chapter 3, does not apply to community technology centers, where many low-income people prefer to use computers. And, although the Clinton administration’s highly publicized effort to wire public schools is commendable, it accomplishes little if not accompanied by funding for appropriate hardware, software, and training for teachers. Chapters 7 and 8, which discuss lessons from the case studies and policy recommendations, respectively, deal with this issue in much greater detail.

## **RATIONALE FOR CLOSING THE GAP**

Community technology activists, and others who argue that the gap in access must be closed, maintain that equal access is important for political, economic, and social reasons. Mark Lloyd argues that “communications policy is of central importance to all Americans, that it touches on our fundamental rights, that communications policy is a civil rights issue” (1998, 1). Chapman and Rhodes (1997), scholar-activists, assert that “access to the Internet is as important a part of civic life as parks, public transit, libraries, and cultural centers.”

Most researchers claim that failure to address the current imbalances in IT access will lead to more deeply entrenched imbalances between historically privileged and historically disenfranchised groups. According to Doctor (1994), “The power associated with possession of knowledge is limited to those who have the economic resources to acquire access to information technologies and are in a social environment that enables them to use that access effectively.” A 1995 study conducted by Rand Corporation (Anderson et al. 1995) warns that “An information elite still exists, made up of those with

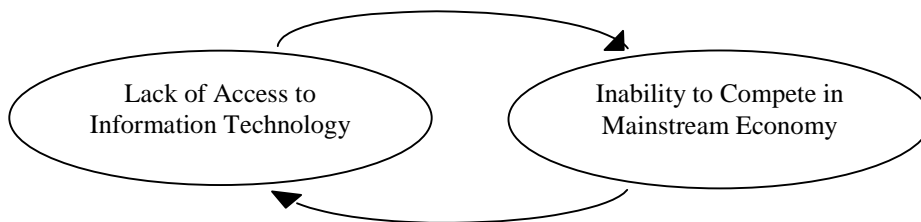
access to and knowledge about computers and e-mail. And as e-mail becomes more pervasive . . . those information haves may leave the have-nots further behind, unless we make concerted efforts today to provide all citizens with access to technology.” Claiming that “‘information poverty’ is no longer a slogan but an actual fact,” Blakely, Hadi, and Johnson (1995) argue that “the revolution in information technologies increases the already large gaps in education and access to opportunity within the social structures of all developed nations.” Goslee maintains that “even as digital technologies are bringing an exciting array of new opportunities to many Americans, they actually are aggravating the poverty and isolation that plague some rural areas and inner cities” (1998, iv).

Larry Irving of the NTIA calls the digital divide “one of America’s leading economic and civil rights issues” (NTIA 1999, xii). IT is a critical resource because it provides access to a broad spectrum of other resources, including education, job information, and networks. Increasingly, information ranging from public notices to available jobs to health-related issues is being posted on the Internet by private corporations, government agencies, and community-based organizations. People who have neither the skills nor the equipment to access this information are at a serious disadvantage.

### Changes Wrought by the New Economy

Access to information technology is particularly important given the global economic shift away from manufacturing and toward services and other information-related industries. Current imbalances must therefore be addressed. A recent Census Bureau report cited “the increased reliance in industry on the use of computer and computer-assisted technology, which places a premium on higher skills and education,” as one explanation for the accelerating income gap between the richest and poorest Americans, which is at its widest since World War II (Holmes 1996, A10). A troubling cycle has begun to take shape, in which the lack of access to information technology and its requisite skills contributes to the widening of the income gap, which in turn creates additional barriers to the acquisition of IT. Figure 1 illustrates this cycle.

**FIGURE 1**  
**The Relationship between Access to IT and Economic Inclusion**



Researchers cite two trends as characteristic of our current economy: globalization and information-reliance (Mandel 1999). According to Mandel, over the last three years, high technology alone has accounted for 25 percent of economic growth and added about 0.7 percentage points to the overall growth rate of the economy (Mandel

1999, 5). Negroponete (1995) states that our economy has shifted from one of atoms to one of bits. This shift has already hurt manufacturing-dependent regions and the people who live in them. Wilson (1987 and 1996) describes the connection between the movement from a manufacturing to an information economy and persistent, concentrated poverty in inner cities. Castells (1996) goes further, claiming that powerful information technologies and new organizational forms facilitated by new technological media enabled a redefinition of the relationship between capital and labor. As modes of production changed, Castells writes:

Productivity and profitability were enhanced, yet labor lost institutional protection and became increasingly dependent on individual bargaining conditions in a constantly changing labor market (1996; 278).

The lack of continued investment in infrastructure, already noted, also creates a problematic dynamic for residents in poor areas of the local labor markets. According to Goslee (1998):

While public attention is often focused on whether individuals can get a service, the equally important problem is that lack of adequate telecommunications facilities makes an area less attractive for businesses. This can feed a spiral where the lack of investment at the community level leads to fewer economic opportunities for people who live there. As a result, the poverty in the neighborhood makes it a less inviting target for investment, further aggravating the problem.

Therefore, jobs in these communities are less likely to train residents for employment opportunities in the new economy, which increasingly require the ability to manipulate information and use computers.

Coupled with the issue of individuals' skills is the problem of the movement of jobs away from the central cities. New technologies have made it easier for corporations to move many of their operations to the suburbs, resulting in a decrease in jobs—particularly low-skilled “back-office” jobs—in the central cities. Residents of low-income areas must then travel farther in order to obtain better jobs.

### **Opportunities Provided by IT**

Other studies focus on the positive potential of information technology. Pitroda (1993) sees information technology as a “social leveler” with the power to “raze cultural barriers, overwhelm economic inequalities, even compensate for intellectual disparities.” Similarly, Builder (1993) claims that “unlike the technology era that preceded it, the information era is diffusing power more than it is concentrating it in the hands of elites.” Further, “the diffusion of power to individuals is eroding the relative power of all kinds of hierarchies structured on the control of information” (Builder 1993). A recent report distributed by the Morino Institute also emphasizes the potential of IT to level hierarchies and blur the lines of authority: “When people have greater access to information, and a much broader, instantaneous ability to communicate, it not only breaks down the lines of control within companies, institutions and governments, it weakens and potentially obliterates the boundaries.” Another report published by the Benton Foundation argues

that “Faster, cheaper, more diverse, and more interactive communications have shown great potential to increase citizen participation in the democratic process.” However, we agree with Graham and Marvin (1996, 193): “While some see telecommunications to be ‘technologies of freedom’ (Pool 1983), we would argue that they tend to offer freedom only to already powerful groups.”

## **CONCLUSION**

Unfortunately, many of the benefits of living in a technology-rich age accrue primarily to those who can afford to learn about and gain access to new technology. Those who cannot are left further behind. Recent efforts at the grassroots level to narrow the gap in access look promising, however, and it is to these efforts that the next chapter turns.