The Knowledge Economy and Distressed Communities

III: Internet Access and Use

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INTRODUCTION

As a common part of daily life, the Internet offers many different functions associated with both work and leisure. Internet access is a valuable resource for business as it provides access to online marketplaces, clients and suppliers, while the educational benefits and the growing market for online services by consumers makes access a significant household function. Part of being a knowledge economy is the ability to access and use information electronically. This part of the report examines Internet access and use issues, as well as implications for work and workers.

INTERNET ACCESS

Internet access is not always a simple task, and the process concerns several elements such as computer familiarity, service cost and access to information. This section analyzes several facets of Internet access to illustrate the breadth of this function often taken for granted in an advanced economy, but it is a function not used by all. Internet access is a resource, and individual ownership of Internet access is affected by a range of factors, starting with the individual's interest in the Internet and willingness to purchase access or visit public sites such as schools ad libraries.

Computer Access: The first element for online use is access to a computer with an Internet connection. Most commonly, access is represented by a computer with Internet connection in a household, although computers can also be found in schools, libraries and other public locations. The initially high cost of computers meant that only more affluent households could afford them, but as computer costs have declined they have become more affordable. While hardware cost reductions have increased Internet access, there remain many households unable to afford a computer, and those individuals must seek other access points. Computer ownership and Internet access are often presented as desirable resources, but that presumes all people are interested in these technologies. It is important to be reminded that not everyone wants to use a computer or is interested in Internet access, and to assume a standard for a society fails to consider those with divergent views.

Internet Connection: The second element is the ability to connect a computer to the Internet. The connection can be a dedicated cable or a dial-up modem or any other means. Internet access can be available at home or work or other public places such as schools and public libraries. Thus, Internet access can be defined as the availability of a computer with a physical connection to the Internet via an ISP. Internet access usually comprises two costs, an ISP subscription and the cost of connecting to the ISP. ISP subscriptions are either an hourly rate or a set rate for unlimited access. With unlimited access users have the freedom to consume bandwidth and time exploring and using the WWW, while hourly users face an increasing cost as their time online increases. Countries with low cost unlimited access will have a more sophisticated Internet user because the pricing structure allows greater familiarity with the Internet. Important in
some locations is the cost of the telephone call to access an ISP. Many rural areas in the
United States are disadvantaged because the cost of access greatly increases overall cost.

**Internet Use:** Because actual usage of the Internet and Web cannot occur without
physical means to connect to the Internet, Internet access is often implied in terms of
Internet usage. It is clear, however, that some discrepancies may exist between Internet
access and Internet usage. An individual user could own more than one Internet access.
On the other hand, multiple users could share one Internet access either at home or in a
public location. Use of the Internet is based on the assumption that each person finds
something of interest online. Recent research suggests that access to the technology is
only one part of the digital divide, with the other element being the information available.
If there is nothing online that interests segments of American society, then the incentive
to be active online is limited or non-existent.

**INTERNET ACCESS IN MICHIGAN**

A 2000 survey of 932 Michigan residents offers insights into access and use issues for the
Internet in Michigan. For many, the Internet has become a common element in daily life,
with almost 60% of Michigan residents claiming at least weekly use of the Internet. Most
users access the Internet from home (65.1%), followed by access from work (25.2%),
homes of family or friends (5.1%), school (2.3%) and libraries (1.3%). Schools and
libraries are important access points for information and the Internet, yet may not have
been significant in this survey as respondents were all 18 years or older. For younger
residents, schools and libraries may be far more important as access points.

The high rates of Internet access reported by the survey also show that over 30% of
Michigan residents have never accessed the Internet. Of those without access, most
replied that the reason was lack of a computer at home, work or school (69.2% of those
without access), while 12.3% had tried to access the Internet and found it too complicated
or not worth the effort, and 11.3% were not interested in the Internet.

Of the many uses of the Internet, the most common were gathering information, e-mail,
and research. Least common were using the Internet to contact public officials, access
government forms, and to participate in online chat. The range of Internet activities is
presented in Figure 1.

One use of the Internet not currently employed but considered to have potential is voting
for public officials. Concerns over voting accuracy in the 2000 election have raised the
possibility of voting via the Internet. When asked about this option, Michigan residents
were divided with 51.3% somewhat or strongly opposing Internet voting and 47.2%
strongly or somewhat favoring use of the Internet.
THE INTERNET AT WORK

The shift in the economy and work from the physical nature of agriculture and manufacturing to the intangibility of information brings significant changes in the occupations and industries of most economies and societies. As technology becomes increasingly important, we face concerns about the ability of all people to access and use information technologies, such as computers, the Internet, and wireless communications; the digital divide that separates the technology haves and have-nots. Michigan residents were surveyed about their attitudes to, and experience with, information technologies, in particular, the use of technology on the job.

Computer use is an important skill for many jobs. In 1997, 50% of the American workforce used computers as part of their job, an increase from 46% in 1993. Computer use varied across society, with 44% of men and 57% of women using computers at work. Differences are also evident by race and ethnicity: White (54%); Black (40%); and Hispanic (30%). Computer use in the workplace is closely tied to better paid jobs, with three-quarters of workers in managerial, professional, administrative, and technical occupations using computers. Computer use was less than 25% for service, production, and agricultural workers. [Data from Digest of Education Statistics 2000, Table 430]
In our Michigan survey, almost half of the respondents commented on their work experience with computers, with results presented in Figure 2. Of this group, almost 60% used data entry and e-mail at work, with just under half undertaking Internet research and just over 20% performing computer programming.

With technology a common element of work, we asked workers about where they learned technology skills (see Figure 3). New skills were most commonly learned though employers or school, although personal contacts and the basic trial and error of self-teaching were also important. Less common were reading program manuals, attending a computer course or using online resources.

Some differences did emerge, most dramatically between men and women. Reading a manual was used by 16% of men and 2% of women, while school was the primary source for 32% of women and 19% of men.
As employers place greater value on worker knowledge and facility with technology, occupations change and workers often face the need to retrain or learn new skills. Maintaining and developing new skills has never been more important, as the ability to find employment and earn high wages is a challenging task in an information economy.

Maintaining skill levels in a period of technological change is an important labor and economic issue for Michigan. Two decades ago, Michigan experienced the economic damage of well-paid production workers in manufacturing being displaced and finding few, if any, equivalent jobs in the state. It is important for the Michigan workforce to be prepared to work with technology and for changing occupational demands.

As part of our study we analyzed how workers at different age levels learned about computers (see Figure 4). For most age groups, employers play a significant role in upgrading skills, followed by school and personal contacts. Not surprisingly, younger workers are trained through schools, with computer courses growing in importance as workers age. For older workers, employers and formal courses are most important, with personal contacts and school having little impact.
CONCLUSION

Our survey shows the importance of information technology to the daily life and work of many Michigan residents, at the same time there is caution due to the number of Michigan residents lacking access to the Internet, or in need of workforce training in computer skills. The types of careers and jobs currently expanding and paying good wages include information and communication technologies, advanced manufacturing (e.g., auto industries), life sciences, biotechnology, biomedical science, bioinformatics, pharmaceuticals and chemistry. These knowledge based careers are a radical shift from the previous service and manufacturing economic base found in many communities in the state of Michigan. As careers change, it is equally important that workers have opportunities to develop their careers or redirect their skills to new employment opportunities.