



Bridging the Rural/Urban Digital Divide

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Introduction

The world is getting smaller as a result of an increasing number of people having access to the Internet. Although the technology revolution and the Internet have become central features of modern global society, and overall, Internet access rates for rural households now approximate those of households across the country, many rural regions still lag in comparison with metropolitan and suburban areas in the development and application of information communication technology (IT). One implication of being on the losing side of the digital divide is that there are fewer employment opportunities as many jobs are related to the new information-based economy. It also means that there is less opportunity to participate in the myriad of online activities including training, shopping, entertainment, research and communications. In addition, and most importantly, being digitally connected has become critical to economic and educational advancement. As people use the Internet to conduct daily activities, those who lack access to those tools are at a growing disadvantage. Raising the level of digital inclusion by increasing the number of users is a vitally important goal.

By not continuing to develop IT infrastructures and accessibility to the Internet, negative repercussions on the future stability of rural communities will occur. The Internet can be a powerful democratizing force, offering greater economic, political, and social participation to communities that have traditionally been underserved, and helping developing nations meet pressing needs. But unless concrete actions are taken to ensure that everyone has a chance to share in the benefits of the Digital Age, information technology could just as easily become another resource that is denied to the people who need it most.¹

The Internet is becoming an invaluable tool for personal success and professional advancement. Increasingly, Americans are using it to find jobs, contact colleagues, locate public information, or take courses online. Familiarity with new technologies will also prepare more Americans for the high-tech workplace of the 21st century.²

As people use the Internet to conduct daily activities, those who lack access to those tools are at a growing disadvantage. Therefore, raising the level of digital inclusion by continuing to increase the number of users across rural America is a vitally important goal. Being digitally connected has become critical to economic and educational advancement.³

¹ Anonymous 2001. Extending Internet Benefits to All. AOL Time Warner Foundation. <http://www.aoltimewarnerfoundation.org/expand/expand.html>

² Testimony of Gregory L. Rohde, Assistant Secretary for Communications and Information, National Telecommunications and Information Administration, U.S. Department of Commerce, on the "Digital Divide in Rural America before the Committee on Agriculture, Nutrition, and Forestry, U.S. Senate, February 3, 2000. <http://www.ntia.doc.gov/ntiahome/congress/20300testimony.htm>

³ Anonymous, 2000. "Falling through the Net: Toward Digital Inclusion: A Report on American's Access to Technology Tools". U. S. Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration.

Is There a Digital Divide?

Much attention has been directed recently to the question of whether a "digital divide" is occurring in the United States, that is, whether Internet access is unevenly distributed across socioeconomic divisions within our society. The most recent government survey results support the perception that access to and use of the Internet are influenced by a person's race, education, and income level. Geographically, however, the study did not find that Internet use, when both narrowband and broadband users were measured together, was related to a person's residence in a small or large metropolitan area or rural area.⁴

In 1998, there were significant rural/urban Internet disparities. For example, urban households with incomes of \$75,000 and higher were more than *twenty times* more likely to have access to the Internet than rural households at the lowest income levels, and more than *nine times* as likely to have a computer at home. Regardless of income level, Americans living in rural areas were significantly lagging behind in Internet access. Indeed, at the lowest income levels, those in urban areas are more than twice as likely to have Internet access than those earning the same income in rural areas.⁵ On the bright side, 2000 data indicate that⁶:

- ?? Urban areas continued to have the highest household Internet penetration rates. The rate of growth in household Internet access in urban areas between 1998-2000 was about the same as it was for central cities, about 57%. However, the level of Internet access in urban areas started from a high level, and continued to exceed the national average.
- ?? In urban areas, 42.3% of households had Internet access, contrasted with 41.5% of households nationally in 2000. Urban households have seen a steady increase over the last three years. In 1997, the Internet penetration rate for urban households was 19.9%. It grew to 27.5% in 1998. The lowest income levels saw a 72% increase between 1998 and 2000, which translated to a 5.5 percentage point increase to the current level of 13.2% access for households with incomes under \$15,000. The \$75,000+ category had a household access rate of 78.0%, the highest single category rate for the geographic regional breakdown.
- ?? Each racial and ethnic group had higher household Internet penetration rates in urban areas than in rural areas. Urban Black households registered a 24.0% access

⁴ United States General Accounting Office. GAO Report to the Ranking Minority Member, Subcommittee on Telecommunications, Committee on Energy and Commerce, House of Representatives. February 2001. Telecommunications Characteristics and Choices of Internet Users.

⁵ Anonymous, 1999. Falling Through the Net: Defining the Digital Divide, National Telecommunications and Information Administration. [U.S. Department of Commerce](http://www.ntia.doc.gov) - 1401 Constitution Ave. N.W. - Washington, D.C. 20230 - (202) 482-7002. <http://www.ntia.doc.gov/ntiahome/digitaldivide/>

⁶ *Falling Through the Net: Toward Digital Inclusion* National Telecommunications and Information Administration. [U.S. Department of Commerce](http://www.ntia.doc.gov) - 1401 Constitution Ave. N.W. - Washington, D.C. 20230 - (202) 482-7002. <http://www.ntia.doc.gov/ntiahome/>

rate, up from 11.7% in December 1998, and contrasted with the rural figure of 19.9% for Black households. Hispanic households had a 23.9% rate, up from 12.9% in December 1998, and above the 19.9% rural rate for Hispanic households. The White household rate in urban areas was 48.3%, up from 32.4% in December 1998, and above the national average of 46.1%.

- ?? Rural households, which historically trailed those in central cities and urban areas, are showing significant gains in Internet access. The gap between households in rural areas and households nationwide that access the Internet has recently narrowed. There was a 4.0 percentage point difference in 1998, narrowing to a 2.6-point difference in 2000.
- ?? In rural areas in 2000, 38.9% of households had Internet access, an increase of 75% from 1998's access rate of 22.2%. In October 1997, just 14.8% of rural households had online access.
- ?? Rural Black households, which have historically had the lowest rates of Internet access, made significant gains. In December 1998, 7.1% of those households had Internet access. By 2000, the figure jumped to 19.9%.

A concern embodied in the digital divide concept is that people living in rural areas might have less access to the Internet than their more urban counterparts. A study conducted by the U.S. Government Accounting Office considered Internet use in five types of geographic areas across the United States: non-metropolitan areas (areas with populations of less than 50,000) and four categories of metropolitan statistical areas (MSA), the largest of which included populations of 2.5 million or more. The study found the proportion of Internet users living in each type of geographic area to approximate the breakdown of the overall U.S. population across these areas. This implies that people living in less populated areas are just as likely to obtain some form of Internet access as those in more populated areas. This analysis, however, was based on whether users obtained any form of Internet access-narrowband or broadband. Special concerns surround the issue of whether deployment of broadband in rural areas will match that in urban areas.⁷

Information tools, such as the personal computer and the Internet, are increasingly critical to economic success and personal advancement. *Falling Through the Net: Defining the Digital Divide* finds that more Americans than ever have access to telephones, computers, and the Internet. At the same time, however, NTIA has found that there is still a significant "digital divide" separating American information "haves" and "have nots."

Specifically, overall, the growth in rural Internet household access has come at all income levels, with the lowest levels showing some of the highest growth rates. As a

⁷ United States General Accounting Office. GAO Report to the Ranking Minority Member, Subcommittee on Telecommunications, Committee on Energy and Commerce, House of Representatives. February 2001. Telecommunications Characteristics and Choices of Internet Users.

result, the Internet access rates for rural households now approximate those of households across the country.

The digital divide does exist in America but in other demographic realms. For example, access to new technologies, such as the computer and the Internet, will be crucial to the economic success of American businesses, communities, and individuals regardless of location.

Income and education disparities are other areas where the digital divide exists. For example, if you've got a household earning \$75,000 or more each year, you're 20 times more likely to have Net access at home than those at the lowest income levels. Only 6.6% of people with an elementary school education or less use the Internet -- that's barely one in 20 of them. In rural areas, if you have a college degree, you're 26 times more likely to have Internet access than those folks with an elementary school education. One last example: those people with college degrees or higher are 10 times more likely to have Internet access at work than people with only some high school education. Numbers like this suggest that we've got a digital divide based largely on education and income levels. Certainly there are also racial and demographic aspects of the digital divide, but there is more general agreement on the digital divide in regards to income and education issue when it comes to access.⁸

One additional example of where the digital divide exists is that as other communities focus on bringing Internet connectivity to their citizens, many American Indians and Alaska Natives have yet to be connected to a basic telephone network. In 1999, three reports examining the state of connectivity in Indian Country found that Native Americans face an urgent situation, one in which telecommunications and information technology infrastructure capabilities fall far behind the rest of the United States.⁹

Finally, communication infrastructure is often a major limitation to technology development in rural America. For example it is difficult, if not impossible, to establish high-speed connections such as DSL or fiber optic-based lines in rural areas. There is little incentive for the communications industry to invest in infrastructure in sparsely populated and often lower income areas. This creates little incentive for innovation, expansion and competition in these areas.

Benefits of Digital Participation

Though many regions may be lagging behind in IT, they also have the advantage of leapfrogging several generations of technology into the 21st century. The digital revolution has created a brand new economic sector that simply did not exist before. Computers, modern telecommunications and the Internet all reduce communications costs and break down geographical borders. By so doing, they are bound to speed up global diffusion of knowledge¹⁰. Furthermore, by bringing down the cost of communicating with someone on the other side of the world, IT makes it easier for

⁸ Carvin, Andy. 2000. Beyond Access: Understanding the Digital Divide. Keynote Address, NYU Third Act Conference. May 19, 2000

⁹ **Anonymous. 1999.** The Digital Divide and Indian Country. National Congress of American Indians. <http://www.ncai.org/indianissues/DigitalDivide/ddhomepg2.htm>

¹⁰ Anonymous. 2000. "Falling Through the Net". The Economist (U.S.), 356(8189).

multinational firms to move production to emerging economies to take advantage of low labor costs, but ensure close contact with the head office. This should help poorer countries attract more foreign direct investment. It also allows some previously traded services to be traded just like physical goods. Any activity that can be conducted via a screen and telephone can be carried anywhere in the world. Computer programming, airline revenue accounting, insurance claims, and call centers have all been outsourced to developing economies.

The Internet offers access to a huge amount of information and expert advice on various subjects. A single connection can be shared by many, thus, providing businesses with the many tools for survival. The World Wide Web creates an opportunity for organizations from the smallest company in the remotest part of the world to the largest manufacturing firm in a major metropolitan area to access the global marketplace. It allows for mass customization, the building of stronger business relationships, a greater degree of channel coordination, improved communication with stakeholders, and enhanced customer service. Other benefits include increases in sales and enrich long-term corporate value and competitiveness as part of a firm's overall strategic plan. Information and communication technologies serve as powerful tools for international marketing as their application allows users direct access to a number of trade information sources that are useful in doing market research and preparing for trade promotions. These technologies can also be used as a means of establishing trade contacts and a way to show the international market of upcoming products¹¹.

In addition, IT can be an important driver in poverty reduction and human empowerment. IT technologies can potentially serve rural areas and increase the capacity to acquire and communicate knowledge, the foundation of development that empowers people and communities. Participation in the information economy and the development of e-Business itself offers many possibilities for wealth creation, particularly for small and micro enterprises.

Capacity Building- Stakeholder Partnership

Given the need for co-operation among all stakeholders, including governments, the business community, non-governmental organizations (NGOs), and international organizations in addressing the challenges associated with the digital divide, it is recommended that importance will have to be placed on areas such as:

- ?? Strengthening the policy environment for disseminating IT;
- ?? Developing IT infrastructure;
- ?? Developing human resources to underpin the dissemination of IT;
- ?? Active utilization of IT in the area of development assistance.

Notable activities to foster increased rural Internet and IT participation include:

- ?? Universal Service – a program whose name makes clear its goal, consists of several elements. These different programs make phone service available and

¹¹ Ancel, B. and M. Borgeon. 1997. "New Information and Communication Technologies for Market Development". International Trade Forum, 2: 4-13.

affordable for rural and low income consumers, and lower rates on telecommunications services, Internet access, and internal networking for schools and libraries. These programs have served and continue to serve important roles. Recent evidence indicates that the digital divide in America is actually widening. Low income households are significantly less likely to be connected than medium and high income households. Equally discouraging, schools in low-income communities are also significantly less likely to be connected than schools in more wealthy communities. Universal Service is a program designed to protect equality of opportunity in America. By giving people access to communications technologies, Universal Service enhances the very value of those technologies. Furthermore, by supporting public institutions like schools and libraries, the program is helping to bring access to the tools of the future to every community in America. Critics have pointed to the evolution of technology as rendering Universal Service obsolete. According to these critics, technology, partnered with competition, will ensure that services are inexpensive and widely available. Unfortunately, these analyses typically forget to mention that prices will rise dramatically in much of the country, especially in rural areas, where new technologies have not been and are not likely to be deployed, at least in the short to medium term.¹²

- ?? Americans Communicating Electronically (ACE), the government-wide, citizen-access, and outreach initiative co-sponsored by USDA's Cooperative State Research, Education, and Extension Service (CSREES) and the Small Business Administration (SBA) is another major effort to increase technology adoption. CSREES's Economic and Community Systems (ECS) division directs information technology projects that are making thousands of screens of federal, state, and local government information accessible to millions of citizen customers. ACE members from all 14 Federal departments and agencies, state and local governments, nonprofit organizations, community groups, schools, churches, and the private sector firms are contributing their content and labor to improve citizen access to information and educational resources electronically.¹³

- ?? National Telecommunications and Information Administration (NTIA) recently reported that, among all income groups, rural areas have the lowest online participation rate. Indeed, Americans living in rural areas are lagging behind the national average in computer and Internet access, sometimes by as much as 50 percent, regardless of income level. To help ensure that the online medium doesn't bypass any segment of society, the AOL Foundation and the National Center for Small Communities (NCSC) created the AOL Rural Telecommunications Leadership Awards. The awards — now in their second year — recognize and promote telecommunications innovations that strengthen the fabric of life in rural

¹² (Anonymous 1998. Deepening the Digital Divide: The War on Universal Service, The Center for Media Education, Washington, DC. <http://www.cme.org/cme>).

¹³ <http://www.reeusda.gov/ecs/ace.htm>

communities, all with populations under 10,000, and honor individual endeavors.¹⁴

?? Congress seems likely to pass a bill that would provide tax incentives for companies that bring high-speed Internet access to low-income and rural communities early in the next session. Subsidies would be an inexpensive way to address the digital divide, and the legislation has strong bipartisan support. Late in the last session a bill was introduced that would provide tax credits of as much as 20 percent to companies that bring high-speed service to regions that lack access. Although that bill did not pass, Rep. Phil English (R-Pa.) is pushing to introduce similar legislation early in the next session, and the new bill is expected to meet with widespread support from both parties. Rural areas are slowly gaining high-speed access, but the transition needs to speed up to prevent these areas from being left behind in the digital age, says Americans for the Digital Bridge executive director Thomas Cohen. About 12.2 percent of urban households have high-speed access, while roughly 7.3 percent of rural households have the technology, according to the National Telecommunications and Information Administration.¹⁵

What Else Should be Done?

Rural demand exists today for access to the broadband digital networks of the 21st century. Rural communities not connected to emerging broadband networks will suffer the same economic fate as many communities that were bypassed by the telephone network, the railroad, or the Interstate highway system.¹⁶

It is important to disseminate and utilize IT over the widest possible area, taking a holistic approach to blend access to communication technologies on one hand with food, shelter and education on another. This comprehensive manner of introduction will support sustainable investments in the communities in order that marginalized communities can benefit from it.¹⁷

To take advantage of the numerous opportunities offered by information technologies and Internet connections, policymakers need to develop public policies and infrastructures that accelerate the broader and more effective use these technologies in rural America. A proactive, multi-faceted approach to web site connectivity, which should be updated frequently, must be adopted coupled with improved training schemes and awareness campaigns as well as higher visibility for rural-oriented sites through

¹⁴ . (Anonymous 2001. Extending Internet Benefits to All. AOL Time Warner Foundation <http://www.aoltimewarnerfoundation.org/expand/expand.html>)

¹⁵ Gannett News Service, 30 December 2000

¹⁶ Parker, Edwin B. 2000. **CLOSING THE DIGITAL DIVIDE IN RURAL AMERICA**. The International Journal on Knowledge Infrastructure Development, Management and Regulation. 24(4): May. <http://www.tpeditor.com/contents/2000/parker.htm>

¹⁷ Time International, 2000. "A Great leap: Developing Countries are Finding Ways to Leverage Advances in Information Technology and Help Narrow the North-South Divide". Time International, 155(4):42-49.

listings on search engines and promotion in appropriate venues. In addition, an eCommerce strategy to enhance services to rural customers as an investment should be looked at as a way of generating commitment and participation.

In order for the urban/rural digital divide to continue to be closed, local governments must support the pursuit of bridging the digital divide by adopting supportive adoption policies and eliminating telecommunications infrastructure limitations. In addition, the private sector, that is championing the advancement of new technologies, must look beyond the profit motive to realize that it is in their interest, and the world's, to help to span the divides that have existed in the past.

Conclusion

As information and communication technology extends throughout the world, its benefits also expand. It is, therefore, vital to disseminate and utilize IT over the widest possible area, including rural America so that the benefits of IT can be maximized on a national scale. There is the need for a multi-stakeholder process and team effort among all stakeholders, including governments, the business communities, non-governmental organizations (NGOs), and national organizations to provide a coordinated approach to address IT capacity building challenges. This approach needs to accommodate the diverse needs of different regions and classes of people focusing on strengthening the policy environment for developing an IT infrastructure, developing human resources to underpin the dissemination of IT, and providing applications of IT in the area of rural development assistance.

There is no doubt that IT will revolutionize how the national community learns, interacts, conducts business, and seeks and exchanges information. The challenge is how to ensure that all participants, industrialized and developing, urban and rural, rich and poor, and all races benefit from this technology. America should strive to turn the digital divide into digital opportunities to maintain economic growth.