

Title: The world on a wire: High-speed broadband unlocks the potential of the Internet age. So why is the U.S. so far behind?

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The United States ranks only 15th in the world in high-speed Internet adoption, and that's hurting economic growth, say some experts, who urge a national policy to assist, especially in rural areas.

And that's not good enough, many experts say.

Federal Communications Commissioner Jonathan Adelstein, speaking at a conference last month in Boulder, said the country's economic growth depends on a stronger broadband policy.

A national policy, he said, could improve education, health care, public safety and job opportunities, especially in rural areas.

"I just believe it needs to be a higher national priority than it is," Adelstein said at the winter Silicon Flatirons communications conference hosted by the University of Colorado's Center for Law, Technology and Entrepreneurship.

Colorado Gov. Bill Ritter also has listed broadband as a priority, and a task force has been created to examine how to ensure all residents have access to high-speed Internet services.

Task force co-chairman Phil Weiser, a University of Colorado telecommunications law professor, said the first step will be to map the areas where broadband is needed.

Weiser said he personally favors a national broadband policy in which the federal government takes the lead in funding, guidance and support and states oversee details such as identifying areas that need assistance.

How crucial are high-speed Internet services for the state as well as the country? Here are some of the issues:

Broadband coverage

The annual report by the Organization for Economic Cooperation and Development ranks the U.S. 15th in the world in broadband coverage, with 22.1 of every 100 inhabitants subscribing to high-speed Internet services.

The recent report by the Bush administration's National Telecommunications and Information Administration paints a rosier picture. It maintains that home use "of

broadband technologies" has soared from 9.1 percent in September 2001 to 50.8 percent in October. In rural areas, it increased from 5.6 percent to 38.8 percent during that period.

Adelstein says the government's current definition of broadband as 200 kilobits a second - only a few times faster than dial-up - is "kind of a joke."

Experts are divided on how concerned the U.S. should be about its world ranking. Some note that most of the leading countries are easier to provide services to because they are more densely populated than the U.S.

Denmark, for example, is No. 1, with a 34.3 percent adoption rate. South Korea, which is No. 4, is aided by public subsidies and the ease of wiring large apartment complexes in Seoul near highways.

Broadband speeds

The U.S. ranks 14th in average advertised Internet speeds of 8.9 megabits a second, according to the Organization for Economic Cooperation and Development.

That figure relates to maximum download speeds advertised by providers such as Comcast and Qwest. Consumers in some urban neighborhoods and in many rural areas in the U.S. can't begin to get those speeds. And speeds to upload information are much slower.

But the good news is that speeds overall are increasing, enabling consumers more easily to do such things online as handle huge amounts of data and watch streaming video.

Qwest, for example, is in the process of boosting speeds up to 20 megabits a second in parts of 23 key markets in its 14-state region including Denver, Colorado Springs and Fort Collins.

Lack of a third pipe

Regulators generally agree consumers would be better served by having more competition in the marketplace.

Today, there are two primary sources for high-speed Internet service: cable and DSL. Many areas of the country, especially remote areas, don't have those services and still rely on dial-up.

The Bush administration's report says that 79 percent of the country's households had access to DSL by year-end 2006. That leaves one in five without access. Qwest says about 85 percent of the households in its region have access to DSL.

High-speed Internet over cable covered 92 percent of all households as of year-end 2007, according to the government.

Wireless service, despite upgrades over the years, is much slower. And it's unclear whether the government's multibillion-dollar auction of wireless spectrum will result in a new nationwide broadband provider.

Denver-based WildBlue offers a satellite broadband service in rural areas, but the top speed is only 1.5 megabits a second.

Broadband over power lines hasn't emerged as a third option.

"We've had a lot of third pipe possibilities . . . and they haven't exactly panned out," Federal Trade Commissioner Jon Leibowitz said last month at the Boulder conference.

Economic development

Democrats and Republicans agree that broadband is important for economic development.

The Bush administration report says broadband technology knits together geographically distant individuals and businesses, increasing productivity and quality of life. "In so doing, it catalyzes economic growth and job creation," the report says.

Studies such as one issued last summer by the Brookings Institution also indicate a link between broadband adoption and job creation, at least in certain industries.

Adelstein maintained that the lack of ubiquitous broadband services, especially in rural areas, is one reason the U.S. is losing technology jobs overseas.

He says better access to high-speed Internet services would enable more Americans to work from remote areas or their home. Telecommuting also means less fuel consumption in this age of concern over the use of fossil fuels.

Many experts have cited ConnectKentucky as a potential national model. The 3-year-old public-private initiative has accelerated broadband adoption and computer use. Broadband providers cooperated in identifying and mapping areas that needed high-speed Internet services. In some cases, that alone helped stimulate investment by carriers and startups.

The results: Broadband adoption in Kentucky increased 83 percent in the past three years, compared with a national average of 57 percent. The group says 18,400 new information technology jobs were created during that period.

ConnectedNation, a national nonprofit organization, wants the Kentucky model to be replicated across the country. It released a report last month that concluded the U.S. could realize a \$134 billion annual economic gain if every state had a similar program.

It said Colorado alone could save or create 39,665 jobs each year and generate an additional \$2.3 billion economic impact.

That might be overstating the case, especially because states have different starting points - and challenges.

Education

Broadband has enormous implications for distance learning. Americans increasingly are being educated through online courses.

Take this example from the Bush administration report: Students in remote communities of Alaska joined together in a live "virtual field trip" to the Johnson Space Center in Houston, thanks to the state's broadband network. They also conducted an online discussion with an Alaskan astronaut aboard the Discovery space shuttle.

But broadband isn't available in many remote areas of the country.

Health care

Consumers can get information on the Internet about treatments and living healthier.

A doctor in a rural area can electronically send a patient's information and test results to a specialist at an urban hospital.

In a survey of Kentucky broadband users, 37 percent reported that access to health care information online saved them an average of 4.2 trips to the doctor's office or hospital in 2007.

The Bush administration report cites a government grant that helped build a wireless network in Navajo Mountain in Utah, in part to provide telemedicine services to a community 100 miles from a hospital.

Public policy

The Bush administration touts deregulation, tax relief to spur corporate investments and targeted loan and funding programs to accelerate broadband deployment in rural and remote areas.

Others say the federal government needs to do more.

Adelstein said the government must make the same effort it made to provide universal telephone service and rural electricity.

Qwest opposes more government regulation.

Steve Davis, Qwest senior vice president of public policy, noted that the company has proposed that some of the federal \$4 billion universal telephone service fund be earmarked for broadband services in underserved areas.

Weiser said he would like to see public rather than industry funds used to stimulate broadband deployment, arguing that such services are for the general good of society.

"We don't tax food to provide farm subsidies," Weiser said.

"The real question is whether we want to wait (on the free market) or does the government want to find another way to subsidize deployment?" Davis said.

In the meantime, many states, including Idaho and Iowa in Qwest's region, are tackling the problem in their own way.

Idaho, for example, created a fund to provide high-speed Internet services to neglected areas and agreed to pay half the cost to install services if a private company paid the other half.

Qwest said it helped provide broadband services to 30 previously unserved rural communities through the program.

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