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Demand for broadband

States eye new investments, programs and statutory changes that could improve connectivity in Midwest

by Tim Anderson (tanderson@csg.org)

Across the Midwest, state legislators have heard stories about the promise of high-speed broadband, and the problems of having inadequate or no connections at all.

In her home state, Sen. Jennifer Shilling says, family-owned dairies in rural Wisconsin have been able to expand product sales well beyond state and even national borders — thanks to having a strong Internet presence.

But at the same time, she has talked to emergency responders in rural parts of her district who couldn't find a nearby Internet connection reliable enough to simply complete a state-mandated certification course.

Minnesota Democratic Sen. Matt Schmit sees the potential of high-speed broadband to do everything from improving K-12 instruction to helping keep seniors in their homes years longer with advances in telehealth.

But on a tour late last year of different communities in rural Minnesota, he heard stories about the lack of connectivity in rural health clinics and the inability of students to complete schoolwork at home due to a lack of Internet access.

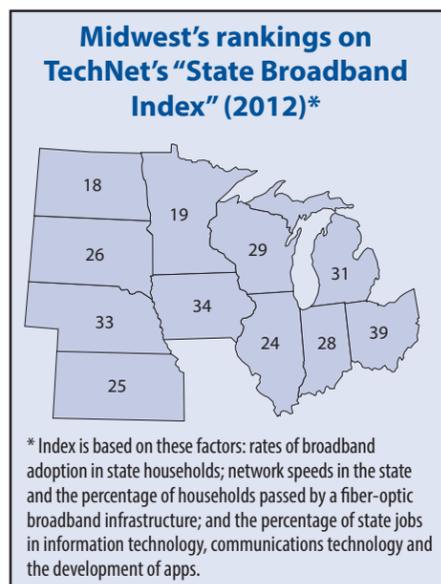
"We've spent a lot of time talking about the needs and identifying the problem," Schmit says, "now it's time to do something."

The timing may indeed be right for states to take on a greater role on issues surrounding broadband deployment and access.

For one, federal broadband dollars in the American Recovery and Reinvestment Act have largely been allocated and spent. Second, many states are now on more sound financial footing. Third, some lawmakers are increasingly viewing broadband access as an economic and quality-of-life imperative.

"Generally, when we talk about investments in infrastructure, we think about roads and bridges, water and sewer," says Shilling, a Democrat. "But broadband should be on the list of infrastructure that we view as critical."

Iowa Republican Gov. Terry Branstad echoed similar sentiments about the critical need for broadband access this past fall, when he unveiled his Connect Every



Iowan project. To compete nationally and internationally, he says, Iowa must deliver to its communities what he calls the "great equalizer" — high-speed connectivity.

The governor's goal is to move Iowa from near the bottom of Midwestern states on TechNet's "State Broadband Index" to the top (see map on this page for the state rankings).

"That's the needle that we have to move," says Amy Kuhlert, program manager for Connect Iowa.

As a starting point, Kuhlert and other members of an Iowa committee have proposed six recommendations for legislative consideration in 2014. Their ideas include new state tax incentives, loans, grants and regulatory reforms to promote a build-out of broadband by providers. The committee

also says the state should provide support for new programs that promote digital literacy and greater broadband adoption.

Iowa is not alone. Broadband policy is being discussed in many other states as well, with policymakers looking to remove the obstacles standing in the way of broader access and adoption.

'Better than a lot of people think'

On some measures, states and the nation as a whole have made significant strides on broadband deployment. Kansas Republican Sen. Pat Apple credits improved access in his state in part to the proliferation of wireless technology. Meanwhile, even in some of Kansas' sparsely populated areas, fiber-to-home projects have been completed, he says.

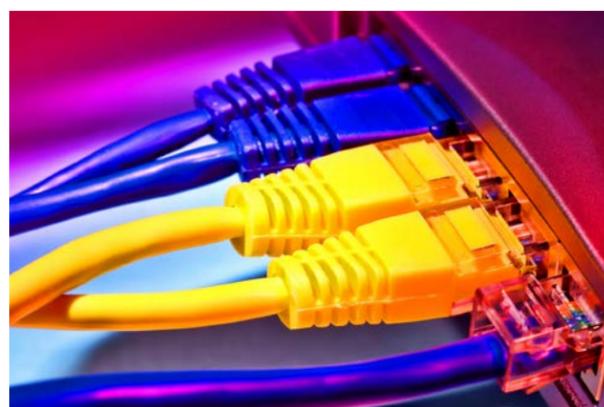
Nationwide, a vast majority of Americans (96.3 percent) now have access to wired broadband, and U.S. adoption of 4G LTE mobile broadband is greater than in any other country in the world.

"We're actually doing better than a lot of people think," says Robert Atkinson, president of the Information Technology & Innovation Foundation and co-author of a February 2013 study that compared the state of U.S. broadband with the rest of the world.

Broadband speeds are improving, he adds, and the cost for consumers compares favorably with that of most other countries.

Four years ago, the Minnesota Legislature set a goal of having universal broadband by 2015, with every business and household

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States have many options as they try to expand broadband access and adoption. They include establishing grant programs for providers or end users, making broadband a part of existing economic development or infrastructure programs, and updating telecommunications laws and regulations.

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Despite progress, states have long way to go on broadband access and adoption

having access to a minimum download speed of 10 megabits per second and upload speed of 5 megabits.

That goal likely won't be met, but over the past two years, Minnesota's access rate (to fixed or wired broadband, not wireless) has jumped from 57.4 percent to 74.5 percent.

"That's good, but what we tell the governor and legislators is that natural growth — meaning without policy intervention — is probably not going to get us to 100 percent," says Margaret Anderson Kelliher, the former Minnesota speaker of the House who now serves as chair of the Governor's Task Force on Broadband.

And Sen. Schmit adds that much has changed since that statewide goal was set, and he believes lawmakers should now be viewing the adequacy of broadband access through a different lens.

"Rather than focus on upload and download speeds, I'm most concerned about end user experiences with real applications, whether you're talking about applications for telehealth or business needs for file sharing," he says.

For those types of users, the minimum speeds set in Minnesota statute are insufficient.

That need for more speed — in critical public institutions such as K-12 schools, hospitals and universities — should be driving state broadband policy, says Blair Levin, a fellow at the Aspen Institute and former executive director of the Federal Communications Commission's Broadband Initiative.

To underscore the point, Levin recounts the story he learned of a school in Peru, where every student receives individualized instruction by working through

Broadband adoption, computer ownership in Midwest's households (2011)

State	% that have adopted broadband	% that own computers
Illinois	70.8%	76.3%
Indiana	64.6%	70.9%
Iowa	68.1%	76.0%
Kansas	72.1%	78.3%
Michigan	68.7%	75.7%
Minnesota	76.0%	81.4%
Nebraska	69.1%	77.3%
North Dakota	70.2%	76.3%
Ohio	66.1%	71.8%
South Dakota	68.3%	75.7%
Wisconsin	72.5%	77.0%
United States	69.0%	76.0%

Source: "Exploring the Digital Nation: America's Emerging Online Experience" (June 2013)

the website of the Kahn Academy — the nonprofit educational service whose mission is to provide a world-class education for "anyone, anywhere."

A Kahn Academy executive visited the school and watched as the teacher — by viewing on her own computer how the students were progressing — could anticipate and then deliver the precise instructional needs of each student.

"That student is about to ask me a question about negative numbers," the teacher told the executive, looking at her computer screen.

Seconds later, the student asked the question.

"That story could not occur in 70 percent to 80 percent of the classrooms in the United States," Levin says, "because they lack sufficient broadband." And as a result, the potential for delivering personalized instruction with world-class, remote educational resources is simply out of reach.

"Twenty years from now, K-12 education and health care are going to be significantly transformed by the broadband platform," he says. "The sooner you accelerate that process, the better off your state will be."

In search of 'widespread adoption'

Of course, some students and families also have inadequate broadband access in the home, or none at all. This is sometimes due to a failure of access (especially in rural areas), but other times due to a lack of adoption.

"Even with faster speeds, infrastructure alone is not enough," notes Karen Mossberger, co-author of "Digital Cities: The Internet and the Geography of Opportunity."

"There needs to be widespread and inclusive adoption of the technology."

Mossberger, in particular, has studied disparities in adoption rates in Chicago and the Cleveland area. She found that "the geography of broadband adoption is pretty much the same as the geography of poverty."

Factors such as costs and the lack of digital literacy

Need for more speed: A look at notable broadband advances and policy innovations in the Midwest



As part of a larger state economic development program, **ILLINOIS** is awarding up to \$4 million in prize funding for the most-promising ultra-high-speed broadband deployment projects. Launched in 2012, the Gigabits Community Challenge is open to public and private organizations; each project must connect at least 1,000 end users to gigabit broadband speeds.



The northern **INDIANA** town of Fort Wayne was one of the first communities in the Midwest to have citywide fiber-optic broadband service. How did Fort Wayne do it? As Robert Atkinson, president of the Information & Technology Foundation, explains it, the city's mayor (Graham Richard at the time) made it as smooth as possible for private telecommunications provider Verizon to move ahead with the \$100 million investment. "He said, 'We will help you get it done,'" Atkinson explains. That meant everything from ensuring an easy permitting and regulatory process to informing the public about the need to dig up city streets.



According to the **IOWA** Association of Municipal Utilities, its state has more municipal broadband providers (28 cities) than any other state in the nation. The idea of communities building their own fiber-optic networks is spreading across the country, says Christopher Mitchell of the Institute for Self Reliance. "We are seeing a dramatic upsurge, but it's starting from a small base," he notes. The estimated cost of building such a communitywide network? About \$1,000 per person, Mitchell says.



Early in 2011, the **KANSAS** town of Kansas City got news that it would become Google's first "fiberhood." More than 1,100 U.S. cities had sought to become the first place where Google brought fiber-optic connections to an entire community — with Internet speeds of 1 gigabit per second, 100 times faster than what most Americans have today in their homes. The project has since expanded to Kansas City, Mo. A Bistate Innovations Team was then created to ensure that the entire metropolitan area makes the most of this unique opportunity.



In 2012, the **MICHIGAN** county of Charlevoix became the nation's first "connected community," under a program run by Connected Nation, a nonprofit group that works in states to expand broadband access and use. To receive the "connected county" designation, a community technology plan must be adopted that includes strategies to expand digital literacy, build awareness about the benefits of broadband, assist businesses with websites, and improve the online presence of local governments. These types of strategies can help ensure broadband demand is sufficient to warrant infrastructure investments by providers. At least five other Michigan communities have since been certified as "connected," thanks in part to the assistance of the state Public Service Commission. Michigan has more "connected communities" than any other state.



Four years ago, **MINNESOTA** lawmakers adopted an ambitious broadband goal: By 2015, every household and business in the state should have access to high-speed broadband, with a download speed of at least 10 megabits per second and upload speed of at least 5 megabits. The state will likely not reach universal access by 2015, but that decision in 2010 has helped keep policymakers focused on the need for "border-to-border service," says Margaret Anderson Kelliher, who was speaker of the House at the time and is now the governor's point person on broadband policy.



In 2011, **NEBRASKA** became one of the first states in the nation to use money from its universal service program to fund broadband deployment in unserved and underserved areas. Most states have universal service funds, which are designed to bring telecommunications service to high-cost areas. Less common is the specific use of these funds — which come from a fee charged to telecommunications providers — for broadband deployment.



A public-private partnership in south central **NORTH DAKOTA** led to what has been called "the largest fiber-to-home connection in North America, and possibly the world." All homes and businesses in the 10,000-square-mile region now have access to a fiber-optic connection. The upgrades were made by the area's two independent telecommunications cooperatives, which received \$95 million in federal rural-development loans.



According to TechNet's "State Broadband Index," **OHIO** has long been a national leader in broadband policy, serving as a model for other states and even the federal government. That leadership role has ranged from working with providers (regulatory changes in exchange for pledges from the providers to expand broadband), to helping develop local technology plans, to mapping broadband availability. More recently, the state invested \$13.1 million to dramatically increase the speed of a fiber-optic network (from 10 gigabits a second to 100 gigabits) that connects Ohio's universities and research institutions.



In its most recent report to the U.S. Congress on broadband technology, the U.S. Department of Commerce highlights the ongoing work of **SOUTH DAKOTA's** Bureau of Information and Telecommunications. The state agency travels across the state to help local schools, libraries, health care facilities, local governments and others adopt technology plans. Grant funding is also made available to help these "community anchor institutions" achieve their technology and broadband objectives.



In 2013, **WISCONSIN** legislators established a new grant program to expand broadband to underserved areas of the state. Under the plan, \$4.3 million can be allocated over the next 10 years. The new grant program will provide dollars for public-private partnerships to expand broadband access, as well as expansion projects undertaken by private telecommunications providers.

hinder adoption rates, which in turn affect the ability of individuals and even entire neighborhoods to prosper.

“It’s nearly impossible to search for a job without going online,” Mossberger notes.

Atkinson says one critical factor impeding adoption is the lack of computers in many U.S. homes; compared to northern European countries, for example, the United States has a low rate of households that own computers.

Policy ideas, options for states

States are in a position to at least play a role in addressing many of the issues surrounding broadband speed, access and adoption.

In Minnesota, the Governor’s Task Force on Broadband has issued a new set of recommendations for legislative consideration in 2014.

They include eliminating a tax on telecommunications equipment (to promote more investments by providers) and providing direct loans, loan guarantees or other financial incentives to expand broadband access. Such state intervention is needed, the task force says, to “help bridge the gap between what is financially feasible and the actual costs of providing broadband” in some of the state’s sparsely populated areas.

On the adoption/user side, the task force proposes creation of a state fund that would help pay for connectivity services for low-income populations.

“Our argument is that these are short-term investments that can make a big impact economically and in the quality of life of Minnesotans,” Anderson Kelliher says.

Sen. Schmit, too, hopes the Minnesota Legislature

% of population without access to fixed broadband (download speed of at least 4 megabits per second/ upload speed of 1 mbps)			
State	% in state	% in non-rural areas	% in rural areas
Illinois	3.3%	0.4%	25.6%
Indiana	4.3%	1.3%	12.4%
Iowa	7.1%	0.7%	18.7%
Kansas	7.7%	1.0%	27.0%
Michigan	6.3%	0.8%	22.4%
Minnesota	8.0%	0.8%	27.7%
Nebraska	10.1%	1.9%	33.0%
North Dakota	15.9%	2.5%	36.2%
Ohio	3.4%	0.5%	14.0%
South Dakota	21.1%	3.2%	44.6%
Wisconsin	6.9%	0.1%	23.0%
United States	6.0%	69.0%	76.0%

Source: Federal Communications Commission, “Eighth Broadband Progress Report” (2012)

will begin considering broadband as part of future bonding plans, included alongside the state’s other public infrastructure priorities such as roads and bridges.

He adds that the state needs to revisit some of its antiquated telecommunications laws; near the top of that list is the removal of a decades-old statute that requires a local referendum and approval by 65 percent of local voters for a city to provide municipal phone service. This law has led to confusion about whether it applies to publicly owned broadband.

More and more municipalities around the country are, in fact, considering or moving ahead with plans to

build their own communitywide fiber optic networks, says Christopher Mitchell of the Institute for Self Reliance.

“They don’t see the cable and DSL networks as capable of supporting the job growth that the region is trying to foster,” Mitchell says in explaining the trend.

“We’re getting to the point where having fiber in a large part of the community goes from being a first-mover advantage, like where Kansas City is [due to Google Fiber; see bottom of page 6], to it being a matter of needing fiber just to tread water [in the global economy].

“We’re not there yet, but we’re moving in that direction.”

According to Mitchell, 19 states — including Michigan, Minnesota, Nebraska and Wisconsin in the Midwest — have some barriers to municipal-owned fiber networks.

Levin urges states to remove those barriers.

“My view is you don’t want to take anything off the table,” he says.

“It is the rare case when cities want to build their own networks. But they can lay a lot of the infrastructure that lowers the cost of deploying fiber, which is good. And cities should have the right to do what’s in their interest, especially when we know there are cases where the market stalls out.”

But Atkinson believes publicly owned networks should be far from the first option pursued by municipalities or encouraged by states. The first steps, he says, should instead be removing regulatory hurdles for private providers and trying to establish public-private partnerships to improve broadband deployment and speeds. ★



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