

## Broadband blues

### Part I: Broadband duopoly shaped by 2005 court decision

December 11, 2007

By Tim Doyle

The Rocky Mountain oasis of Colorado evokes images of tony ski towns and breathtaking views of snow-capped peaks.

But the state, like many in America, suffers from a very ugly truth of the U.S. in the 21st century: Less than half of the 2.1 million households in the state are connected to high-speed Internet.

The state's low population density causes many Internet service providers to shy away from rolling out high-speed lines and bridging the digital divide.

"It's grossly under-deployed," Frisco, Colo., Mayor Bernie Zurbrigen told SNL Kagan. "There are a whole lot of places without a lot of people."

While the U.S. leads the world in residential broadband connections with 58.2 million, it ranks 15th on a per capita basis, according to the Organization for Economic Cooperation and Development. America's broadband adoption rate falls far lower than other countries with high per capita gross domestic product rates.

This causes serious concerns for policymakers and companies as studies show that having access to high-speed Internet leads to enormous economic benefits. Broadband promises to improve education, health care and public safety over the Web, and even reduce carbon emissions with more telecommuting.

"Clearly something is broken here," Christopher Putala, executive vice president of EarthLink Inc., told SNL Kagan. "There's no reason that citizens in Bangalore should have greater access to broadband than citizens in North Dakota."

While scarce population stands as a true roadblock to deploying broadband in parts of the U.S., competition remains an even bigger obstacle.

Of those 58.2 million broadband connections in the U.S., AT&T Inc., Verizon Communications Inc., Qwest Communications International Inc., Comcast Corp., Time Warner Cable Inc., Charter Communications Inc. and Cox Communications Inc., the largest cable modem and DSL carriers, control a whopping 45.7 million of those lines as of the end of 2006, according to FCC and company data.

#### Brand X

The current U.S. duopoly of technologies and a lack of choice in broadband providers in some areas were forged by a crucial Supreme Court decision in the summer of 2005, the National Cable & Telecommunications Association vs. Brand X Internet Services.

The case centered on the small ISP trying to get the FCC to open cable company lines to forced lease rates, much like phone companies were required to do at the time with MCI Inc. and then AT&T Corp.

Telecom law and precedents made before the advent of the Internet distinguish computer and phone services as information and telecom services, respectively. Telecom services must charge reasonable rates, set up interconnected networks and contribute to the Universal Service Fund, while information services have no such requirements.

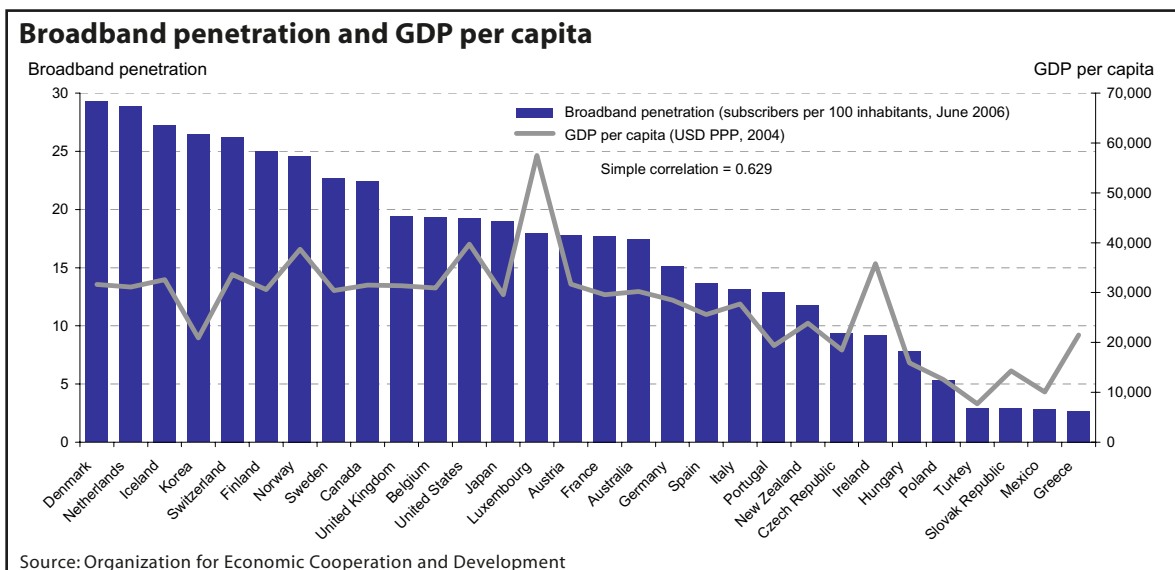
For more than 100 years, common carriage rules have applied to transportation and communications services as a means to ensure fair service to the public. The rules took root in the U.S., and in 1848 New York state ingrained them into communication policy by requiring telegraph companies to provide nondiscriminatory service to competing companies. In 1934, common carriage regulations were codified in the Communications Act.

But, of course, times changed and laws were updated.

In the late 1970s, the FCC created the information service classification for the processing of computer information over telephone lines. The thought here was that the fast-moving competitive market of data and computers did not need to be subject to archaic phone regulations, which at time applied to the AT&T monopoly.

In 2002, the FCC ruled broadband Internet from cable companies was an information service and the case meandered through the judicial system to the Supreme Court.

The court agreed with the FCC, noting that data coming through a cable broadband connection gets processed by a computer, which is part and parcel of the cable broadband service. Moreover, the court rejected MCI's claim that the FCC's ruling on DSL as a telecom service was inconsistent with its 2002 ruling of cable modems as an information service and opened the door for deregulation of the other dominant high-speed Web service.



"Unlike at the time of the DSL order, substitute forms of Internet transmission exist today, including wireline, cable, terrestrial wireless and satellite," Justice Clarence Thomas wrote in the 6-3 decision. "The commission therefore concluded that broadband services should exist in a minimal regulatory environment that promotes investment and innovation in a competitive market. There is nothing arbitrary or capricious about applying a fresh analysis to the cable industry."

Later that summer, the FCC ruled DSL to be an information service, freeing the Bells from set rates it had to charge. While cable was never open prior to Brand X, Covad Communications Group Inc., EarthLink and other high-speed providers used the Bells' networks under the law and enjoyed the accompanying wholesales rates. This allowed the big DSL and cable modem providers to crowd out competition in the market for broadband, albeit forced competition that was not necessarily fair to the phone companies.

DSL networks utilize old telephone copper networks and are far more ubiquitous than scattershot cable systems. As a result, in many areas, only one true provider offers services and charges whatever it wants. Since DSL transitioned to an information service from a telecom service, U.S. adoption rates have declined compared to the rest of the world, Putala said.

"Brand X set the stage for the consolidation in the broadband marketplace," Putala said. "Other countries have cracked the code that you want to have as many entities out there competing to attract consumers to broadband service. When you just have a duopoly you don't have the price and service competition. That's why there's a relative stagnating broadband market here in the U.S."

By comparison, the U.S. wireless market has blossomed since the FCC auctioned more spectrum in 1993 and did not allow the top two providers in markets to win the valuable airwaves, Putala said. From that event, adoption exploded and set the stage for four major nationwide competitors that allow consumers to enjoy low prices and near ubiquitous service.

The set of events was tectonic shift in the U.S. broadband market, setting the stage for those companies' dominance. Since then, three broadband alternatives — wireless, fiber-optic lines and broadband power lines — have emerged, but made little headway.

In June 2005, DSL and cable modem providers controlled 98.7% of the residential market with virtually no competition from wireless, fiber or satellite technologies, which then had 511,660 lines out of 38.7 million. At the end of 2006, alternatives to cable and satellite provided 4.12 million connections. But in that same time span, cable modems and asymmetric DSL added nearly 16 million lines.

### Hope yet in Colorado

Zurbriggen, who also works as a real estate broker in Summit County, an area known for its ski resorts, said while parts of the state languish without service, his community has been working on a solution to broadband deployment since a seminal meeting in 1997 at the Brown Palace Hotel in Denver. There, community leaders learned from state officials of Colorado's segmented four-part telecom network. They immediately took steps to bring the network together for the good of statewide communications.

By 2003, the network was fully integrated and ran through every county with 20 megabit-per-second speed. They then set out to compel telecom carriers to bridge the distance from the network to homes and businesses.

Frisco and Summit County got more than \$400,000 in grant money from the state to work on a public-private partnership with Qwest and Comcast. By promising that the government would be the anchor tenant of high-speed service, Summit County got lines delivered to several parts of the county.

"They came to our community a lot sooner than they would have, it created a competitive environment," he said. While the mayor chalks the efforts up as a success, he would like to see Internet speeds increase and have the service reach every part of the state. To do that education is needed. For instance, the mayor would like to see faraway parts of the county use video conferencing as a tool that could keep people off snowy roads in the winter.

"That would be a simple thing to show what the possibilities are," Zurbriggen said.

Time will tell on whether boosting speeds will help as adoption on Summit County's past efforts is just starting to bear fruit. "In reality, we're just getting to where it's being used by businesses and residences," Zurbriggen added. *i*

## Part II: Kentucky's burgeoning broadband

December 14, 2007

By Tim Doyle

In the hills of eastern Kentucky, utility workers of Foothills Rural Telephone Cooperative have used horses to lay fiber-optic cable to connect houses in Johnson County. The Appalachian community's horse-powered determination to get residents high-speed Internet illustrates Kentucky's drive not to be left out of the broadband revolution.

"That was an example of the desire and demand we've seen," ConnectKentucky Executive Director Rene True told SNL Kagan.

With a population of just 4.2 million, and with many people living in remote areas, Kentucky had in 2004 just 60% of its homes connected to the Internet at speeds in excess of 200 Kbps, the lowly FCC standard for fast Web service.

The state, known for its bourbon and horses, ranked 45th in residential computer use and 43rd in Web use in 2004. In an effort to turn things around, then-Gov. Ernie Fletcher, a Republican, laid out the state's "Prescription for Innovation." The plan sought to boost the availability of broadband by forging public-private partnerships. Fletcher promised universal access to broadband in the state by the end of 2007.

"There is an increasingly large gap between those who have technology and those who do not. Kentucky remains on the wrong side of this digital divide," Fletcher said in October 2004.

ConnectKentucky set out to put together a map showing broadband availability throughout the state to identify gaps in coverage, as well as opportunities. Additionally, a telecom specialist compiled data on community assets, dissected census data and researched take rates.

The result: A detailed picture of broadband penetration in Kentucky.

"We did the business analysis and market research for these companies," True said. ConnectKentucky also worked to find rural utility grants and other resources to help offset telecom carriers' upfront network build-out costs.

The nonprofit realized its efforts could not just focus on luring AT&T Inc. and other telecom companies to provide high-speed Internet service over a wider area of the state. ConnectKentucky launched a "No Child Left Offline" initiative to help the state's 200,000 children who did not have a home computer.

Using its ingenuity, ConnectKentucky took excess computers from the state, routed them to prisons where the machines were refurbished,



Employees of Foothills Rural Telephone Cooperative use a horse to lay fiber in rural Johnson County, Ky.

and then loaded them with donated software from Microsoft Corp. and CA Inc. Approximately 2,000 Internet-ready computers have been delivered to disadvantaged children across the state.

The organization also worked with grassroots groups, local governments and statewide libraries to evangelize the benefits of broadband. Moreover, ConnectKentucky rallied to stop a state bill that would have regulated Internet access like telephone service.

"It's a huge value that they've brought," Nancy Jarrett, AT&T public affairs manager in Kentucky, told SNL Kagan. "As a result, AT&T has been able to increase our investment and deployment in the state."

Availability of broadband throughout the state now stands at 96%, with the remaining 4% in very rural areas. Those Kentuckians will have to get satellite service with subsidies from the state for installation costs, True said. The state estimated that the expanded access could bring 14,000 jobs to the state and more than \$5 billion to Kentucky's economy. More than \$667 million of private capital has been invested to connect more than 500,000 households.

About 44% of adults in Kentucky now subscribe to broadband service.

"It's an amazing, amazing program," Phoenix Center President Larry Spiwak told SNL Kagan. "What makes them so successful is that they understand the demand side of the problem."

Spiwak, a longtime student of broadband policy, said legislators and regulators in Washington have focused too long on the supply-side aspect of the broadband problem; specifically, he mentioned tax incentives.

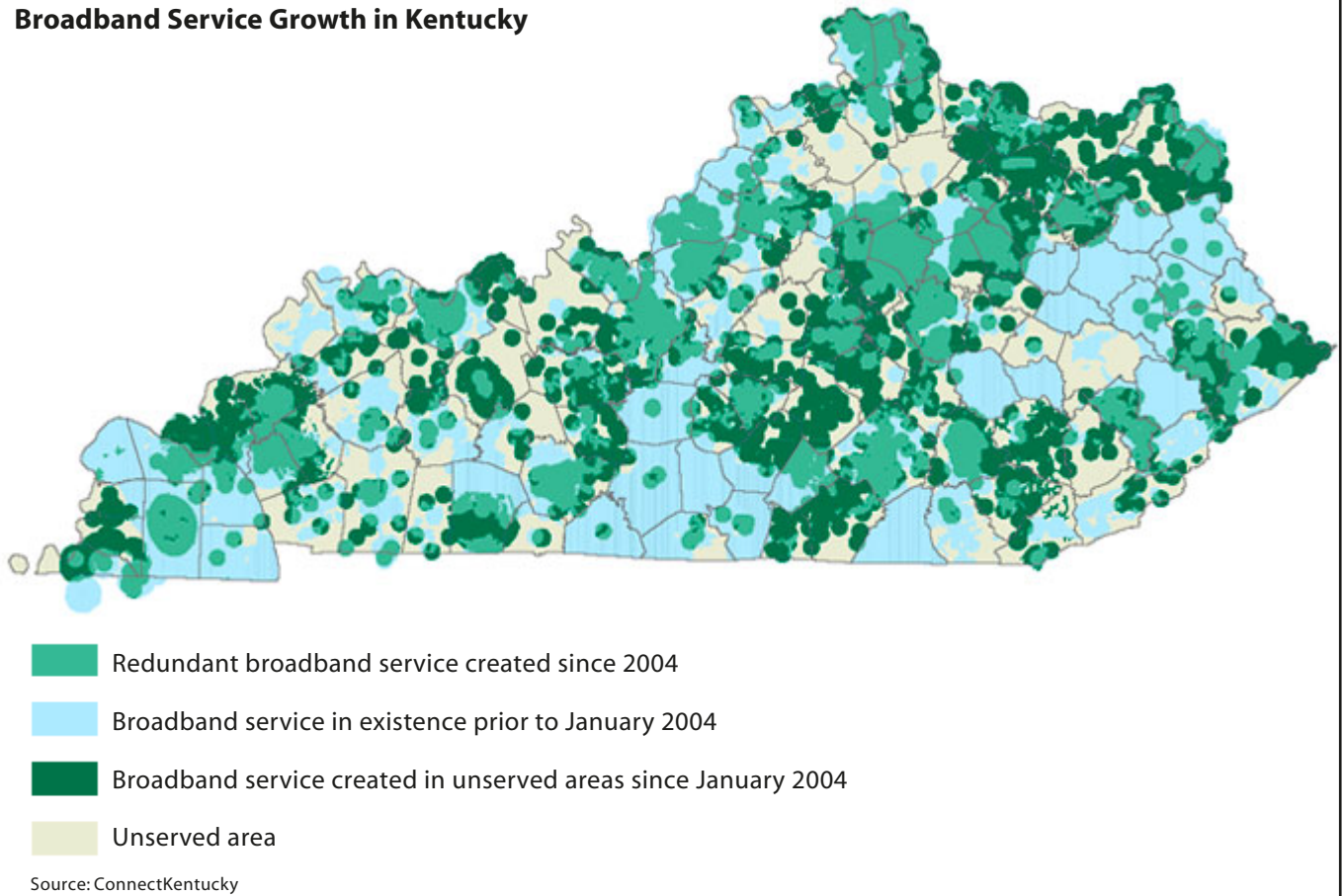
While broadband policy continues to be debated in Washington, focusing mainly on the United States' low standing in the worldwide ranks of broadband penetration, ConnectKentucky helped drive high-speed Internet adoption by getting those 2,000 computers online.

But the boots-on-the-ground efforts of Kentuckians may no longer be lost on those inside the beltway.

The House of Representatives has passed a measure that would create nationwide map like Kentucky's, and a Virginia congressman has another bill that would prohibit states from preventing municipalities from becoming telecom carriers.

ConnectKentucky's previous leader, Brian Medford, now leads ConnectedNation, another nonprofit that will work to emulate the work of ConnectKentucky across the country.

## Broadband Service Growth in Kentucky



Still, America's broadband woes remain stark compared to the Blue-grass State.

While the FCC said 82.5 million high-speed lines were in service at the end of 2006, the Organisation for Economic Cooperation and Development put America's broadband adoption at nearly 20% on a per capita basis, which makes for a ranking of 15th in the world. *i*

## Part III: Is the broadband 'duopoly' really all that bad?

December 26, 2007

By Tim Doyle

Capitol Hill rhetoric can often be deafening when it comes to the subject of America's woeful status in the world's broadband rankings.

June rankings from the Organisation for Economic Cooperation and Development put the U.S. at 15th in the world in regard to broadband penetration with 22.1 connections per 100 residents. The standing left the U.S. behind much of Western Europe.

The blame for this status often falls on the shoulders of competition.

"Under almost any set of measurements, the United States lags other nations not only in availability and speed but also in the value," Rep. Edward Markey, D-Mass. and chairman of the House Subcommittee on Telecommunications and the Internet, said at a hearing in May.

The U.S., however, leads the world when it comes to the total number of broadband connections. With those 66.2 million connections, many wonder whether the dominance of DSL and cable in the high-speed Internet market really is hampering the nation's digital future.

"It's whining," Precursor President Scott Cleland told SNL Kagan of the posturing from the Hill. "Broadband is being deployed faster than any other communication network in history."

Cleland and Phoenix Center economist Lawrence Spiwak argue that the rankings do not tell the whole story and make for empty political comments.

"The question shouldn't be where we rank but where should we be ranked," Spiwak told SNL Kagan. "It's much more subtle and nuanced than looking at a ranking."

The FCC reported 58.2 million high-speed Internet lines in service at the end of 2006 with cable and telephone companies controlling nearly 93% of the lines. Markey and other Hill democrats pounced on the statistic and cited the market control of AT&T Inc., Comcast Corp., Verizon Communications Inc., Cablevision Systems Corp. and other big companies as the reason for the lack of broadband deployment.

But Spiwak argues that the call for three or four broadband networks is unwise as 35% to 40% market share position is needed to justify deployment of a massive wired telecom network. With two to two-and-a-half providers available to most Americans, Spiwak said, "We're

pretty near [the economic] equilibrium." He added, "It's a very difficult, expensive business to be in."

Moreover, the lower-than-desired U.S. ranking for broadband penetration was cemented in a 2005 Supreme Court decision. Consequently, not much can be done about the government's inability to force competition with wholesale access rates to the networks of the companies that already dominate the industry.

Many countries ahead of the U.S. in the per-capita rankings have ascended the list by instituting wholesale price policies that create competition like the U.S. had with local and long-distance phone service. However, the U.S. and Canada's market-based approach may bear greater fruit in the future.

"The U.S. has the best market-driven policy in the world," Cleland said, adding that European policies are rooted in the lack of real competitors. "There's no distinction between wireless and wireline. Who's to say that broadband should be wired or wireless? Let consumer demand determine that."

Cleland believes genuine competition and mobility are as important factors as price and speed when it comes to assessing the broadband market.

Wi-Max technology and greater fiber-optic deployments by Qwest Communications International Inc., AT&T and Verizon are good signs of competition.

And while cable and telephone companies will continue to dominate the market, other players are gaining ground.

In June 2005, DSL and cable modem providers controlled 98.7% of the residential market with virtually no competition from wireless, fiber or satellite technologies, which then had 511,660 lines out of 38.7 million.

At the end of 2006, alternatives to cable and satellite provided 4.12 million broadband connections.

Deploying broadband networks, though, serves as only part of the solution, which means those in the industry, regulators and legislators must improve their understanding of the market to get more Americans connected.

Spiwak noted that Kentucky has developed a deep understanding that getting more broadband deployed is about education and access to computers as much as it is about lines in service and population density.

The state has beefed up its broadband adoption rates by providing free computers to underprivileged students, working with those in the industry and compiling a map of broadband availability.

Kentucky's model could be adopted federally as Congress considers a nationwide broadband mapping bill.

A national broadband plan "should focus on investment and deployment," Spiwak said. "It needs shared work and a lot of serious thought." *i*