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Utility Players

As broadband demand grows, municipalities are rolling the dice and building their own networks

CEO Wes Kelley of Huntsville Utilities, one of many municipal providers looking to break into the broadband business.

FUTURE

More Muni, More Money

Small communities increasingly see municipal broadband as a means to drive economic growth

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Municipal broadband networks, an idea that some in the cable business believe looks a lot better on paper than in practice, may be on the verge of a breakthrough.

As ultra-high-speed internet service becomes increasingly important to economic growth — at least four presidential candidates have mentioned muni broadband as a way to goose local economies — municipal broadband is increasingly being looked upon as a low-cost way for consumers to get access to the high-speed data they need, and giving local governments an inroad with businesses and employers.

On the flip side, cable operators have tried to block muni networks at almost every gate, arguing they cost too much, unfairly compete with incumbent operators who have invested heavily in rural infrastructure and represent a potentially massive tax liability to consumers when they fail.

The truth, as with a lot of issues in the communications business, lies mostly in between.

But no matter which side you're on, one thing is increasingly clear: municipal broadband is gaining steam and some communities are finding innovative ways to finance and maintain projects. And the risk, as many areas are finding out, is becoming worth it.

There are about 55 municipal broadband networks serving 109 communities, with about 500 communities with some form of city-owned fiber network throughout the U.S., according to the Institute for Local Self-Reliance, a community broadband watchdog. Hundreds more are in the planning stage.

While that should come as a worry to cable operators that have come to rely on broadband service as a profit center, so far the number of muni networks hasn't made a big dent in overall traditional broadband growth.

"It's not affecting cable one iota," Leichtman Research Group president Bruce Leichtman said. Available numbers back that up. The top two cable operators, Comcast and Charter Communications, grew broadband subscribers by a combined 661,000 in Q3, up from 555,000 in the prior year. Even Mediacom Communications, which is considerably smaller and has had to endure several municipal overbuilds, added 13,000 broadband customers in Q3, up from 9,000 additions in the prior year.

For the most part, muni broadband networks are being built in small communities. According to the Institute for Local Self-Reliance, networks have been built in areas as large as Chattanooga, Tennessee (175,000 homes) and as small as Vernon, California (31 households). Recently, though, several larger communities have dipped their toe in the water — Denver is considering voting to create a muni network next year — and cities and towns are finding innovative ways to fund projects. As the 2020 presidential election nears, some candidates have pointed to municipal broadband as a way to bridge the digital gap (see sidebar).

There are still skeptics, though. The path to municipal broadband service is pitted with some spectacular failures.

Leichtman echoed what many cable and telecom operators have argued is the case against muni broadband: U.S. penetration rates are currently around 80%, so the available market is dwindling.

"What level of penetration at this point will pay for itself?" Leichtman asked. "Maybe this is an issue that may have made sense a decade ago. Now, with such a high level of penetration, it is far more risky than it has ever been."

While the networks are costly for municipalities, once built they can seriously cut into an incumbent's customer base. Mediacom has endured several municipal overbuilds. Its largest market, Iowa, is home to several muni networks. In the past few months, two more communities have announced plans to launch muni networks in Mediacom territory, namely Fort Dodge and Vinton, Iowa. And though the cable operator has managed to hold its own, so far it hasn't been easy.

Fiber is expensive and fiber networks are not easy to build. Google Fiber announced ambitious plans to build out most of the country with fiber in 2010, but scrapped those plans after completing or starting a handful of projects just six years later, telling Wall Street it would not expand service to any other communities. If Google, with a market cap of nearly $836 billion, can't make a go of small-town fiber networks, some critics argue, how is a small community supposed to?

Cable's biggest lobbying group, NCTA–The Internet & Television Association, has maintained a cautious stance.

"Broadly, we support government programs that dedicate money to building networks where they don't exist or make economic sense for private ISPs to build, and believe that taxpayer dollars should not be used to subsidize competition where networks already exist," NCTA senior vice president, strategic communications Brian Dietz said in an email message.

Mediacom senior vice president of government and public relations Thomas Larsen said that even the muni systems that have been successful have been on the receiving end of huge taxpayer subsidiaries, in the form of federal and state grants, that give them an unfair advantage over incumbents who have to come up with funding on their own.

That has hampered many an incumbent operator from extending fiber — which can be incredibly expensive to lay in rural terrain — into sparsely populated areas. For a cable company, every decision must fulfill a profit motive. Governments only have to break even.

"We are regulated by these communities in how we use the rights of way, we are being taxed by these communities as a property taxpayer. If they get 70% penetration, then we're out of business; we don't exist anymore," Larsen said, adding the incumbent is then criticized for questioning the validity of the project.

Communities are not unaware of the risk. Horror

stories about failed muni networks usually start with the city of Burlington, Vermont, which in 2009 discovered that it couldn't make payments on a $33.5 million loan to build the network from Citibank or return $17 million of city general fund dollars that were improperly spent on the project (called Burlington Telecom) by a prior administration.

Citibank later sued the city for $33.5 million and the municipality endured six downgrades to its credit rating between 2010 and 2012, putting core government functions at risk. Burlington later settled the Citibank suit for $10.5 million and a portion of Burlington Telecom's future value and was able to recover about $7 million in lost taxpayer funds after selling BT to Schurz Communications in 2017 for $30.8 million.

Then there's Provo, Utah, which sold its $39 million broadband network to Google in 2013 for $1; and Lake County, Minnesota, which built its municipal broadband network in 2010 with a $56 million loan and about $10 million in federal grants. Lake County sold the network to Zito Media, the Coudersport, Pennsylvania-based cable company owned by ex-Adelphia Communications executive James Rigas, for about $8.4 million in June.

Chattanooga Choo-Choo

But while the cable industry harps on the more spectacular failures in the muni business, others point to successes like Chattanooga, Tennessee and Cedar Falls, Iowa, whose municipal broadband networks literally transformed those communities. And even the failures — some maybe just a little ahead of their time — can be held up as blueprints for what not to do in developing a municipal broadband plan.

"Many 'failures' with muni networks just amounted to communities getting in over their heads with the infrastructure and upkeep," *BroadbandNow* editor Tyler Cooper said. "Now that there's precedent across the nation, we're seeing all sorts of innovative models cropping up, lease-outs to private telecom included."

When municipalities want to talk about successes, they usually point to Chattanooga, which built its broadband network in 2009 and became the first municipality in the country to offer 1 Gigabit per second internet service city-wide. That "Gig City" designation made the community a magnet for business. According to a study by the University of Tennessee, broadband helped drive about $1.3 billion in economic development and attracted

"The communities are saying if anybody's going to do it, we're going to have to do it," says Katie Espeseth, VP of new products at EPB Fiber Optics of Chattanooga, Tenn.

MUNI BROADBAND BASICS

Municipal Broadband, despite some controversy over the years, continues to hold its own, bringing surprisingly robust high-speed internet options to midsized, small and rural U.S. markets. According to the Institute for Local Self-Reliance, 500 communities across the country have some form of city-owned broadband network, including:

• 55 municipal networks serving 109 communities with a publicly owned fiber-to-the-home citywide network.
• 73 communities with a publicly owned cable network reaching most or all of the community.
• 196 communities with some publicly owned fiber service available to a business district or other part of the municipality.
• 120 communities with dark fiber.
• More than 150 cities in 29 states with a publicly owned network offering at least 1 Gigabit per second service.
• 20 communities in four states offering 10 Gbps service.

SOURCE: Institute for Local Self-Reliance

about 5,200 jobs between 2011 and 2015.

The Chattanooga network was built by the city's municipal electric company, the Chattanooga Electric Power Board, which first started to look into what it could do to attract more business in the 1990s. The EPB found the two biggest reasons companies relocate to an area were reliable electric service and access to high-bandwidth applications.

Further investigation showed the city wasn't being adequately served by its incumbent internet providers. Chattanooga fell within the lowest 2% to 5% of any of the technologies that any of its Tier 1 providers were offering in their other markets, EPB Fiber Optics vice president of new products Katie Espeseth said.

EPB also determined that upgrading the network would make the electric service more reliable. One study found power outages cost Chattanooga businesses about $100 million in lost productivity and business activity each year.

"Anything that could take a bite out of that would be good for the community," Espeseth said.

Today, Chattanooga's broadband service has about 105,000 customers (a 65% take rate), paid for itself long ago and is currently returning about $40 million per year to the electric utility. The broadband service also was cash-flow positive by its third year of operation.

"We are debt-free," Espeseth said of the communications business. "Our total debt service, from an electric company perspective, is somewhere around $21 million a year. We more than cover the debt service for the entire electric system with communications revenue."

Chattanooga's success also woke up the incumbent providers in the market. Espeseth said that since muni broadband service went live, Chattanooga was one of the first 12 U.S. Comcast markets to get the cable operator's Xfinity X1 platform.

"Regardless of whether you're our customer or

Former President Barack Obama gave muni broadband a big boost in a 2015 visit to Cedar Falls, Iowa.

Comcast's customer, you've got better access to products and services today than you did before we entered the market," Espeseth said. "From being in the lowest technology [offerings] that they had anywhere in the country to being one of the first 12 [Xfinity] cities, is a remarkable turn for Chattanooga."

Espeseth added that she has noticed increased enthusiasm for muni broadband from communities in Arizona, Texas, Wisconsin, Pennsylvania and Colorado. And more than 90% of the 154 municipal power utilities in Tennessee, according to a recent survey by the Tennessee Valley Authority, are considering offering broadband service, she noted.

"The communities are saying if anybody's going to do it, we're going to have to do it, and it just makes sense for rural co-ops to be that engine," Espeseth said.

Obama's Blessing

Electric utilities appear to have the greatest chance of success in broadband, mainly because they already have infrastructure in place and a relationship with customers. A prime example is Cedar Falls, Iowa, which began offering electric service to residents in the city in 1914. Cedar Falls Utilities built its muni broadband network in 1996 — it went full fiber-to-the-home in 2011 — and that offering has been cited as one of several catalysts for about 7,000 additional jobs and the up-to-1-Gigabit speeds have led to a 90% take rate from consumers. President Barack Obama paid a visit in 2015, praising the community for its efforts.

"What you are showing is here in America you don't have to be the biggest community to do really big things," Obama said at a rally before about 200 residents on Jan. 14, 2015, according to a report in the *Cedar Falls Gazette*.

Cedar Falls Utilities general manager Steve Bernard said the city first built its broadband network because the incumbent Tele-Communications Inc. wasn't offering high-speed data at the time. That first network, a hybrid fiber-coax

infrastructure, had a top speed of 3 Mbps.

"That was a big deal back then," Bernard said. The upgrade in 2011 cost about $19 million and increased that top speed to 1 Gbps. A 10 Gbps service is planned for the future, although there is no specific time frame to do that.

Although Cedar Falls enjoys perhaps the highest broadband penetration rate in the country, it didn't reach that level immediately. A combination of good customer service, a reliable product, and being the first public service a new homeowner calls helped drive that success, Bernard said.

The electric utility and the broadband network are entirely separate entities, but electric customers find out early that the city also provides internet when they move into a new residence.

"It's a great opportunity for us," Bernard said. "We look at it as a way to help the customer."

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> *Municipal investment in utilities has been going on forever and citizens should have the right to self-determination.*
>
> — **Colman Keane**, broadband executive director, Fort Collins Connexion in Fort Collins, Colo.

While the 90%-penetrated broadband service has been a boon for residents, Mediacom's Larsen said the utility's biggest advantage is its position as the electric provider in the area.

Mediacom is the current incumbent in Cedar Falls, acquired via a larger purchase of Iowa systems from AT&T Broadband in 2001. It's a hard market to compete in, Larsen acknowledged, but he said the incumbent isn't making any drastic moves.

"Do we have plans for stopping service in Cedar Falls? No," Larsen said. "But it is as close to a government monopoly as you will ever see."

Bernard said the incumbent has increased speeds and noted that Mediacom also has a larger system in neighboring Waterloo, which doesn't have a municipal network. "They're still there as a viable option," he said.

While Cedar Falls is held up as an example, utility general manager Bernard has some key advice for communities considering building a muni network.

"Just because it worked for Cedar Falls doesn't mean it works everywhere," Bernard said, adding that before going forward, a community needs to do extensive due diligence and hire skilled people to operate the service.

"It [municipal broadband] turns a standard utility on their head," Bernard said. "When you get into the broadband and the cable and phone business, there is a lot more customer interaction.

"With electricity, you turn on your light switch, you expect your lights to go on and you pay your bill every month," he continued. "With two sets of services, there's a lot more give and take, a lot more interaction, a lot more options, different technology. You have to have the right kind of staff to understand and operate that system and provide the level of service your customers expect."

Rocky Mountain High (Speed)

Perhaps encouraged by the success of some local governments, hundreds of cities and towns across the country are exploring the possibility of creating their own broadband network. In Colorado alone, about 145 municipalities have filed to opt out of that state's legislation, SB 152, that restricted the creation of municipal broadband service.

"Colorado is a hotbed of activity right now," said Colman Keane, broadband executive director for Fort Collins Connexion, the municipal broadband service in that rural town. Before coming to Fort Collins, Keane was director of fiber technology at Chattanooga's EPB.

Keane likened the move toward municipal broadband to moves in the 1930s to electrify the country.

"Municipal investment in utilities has been going on forever and citizens should have the right to self-determination," Keane said. "If they feel that it is in their best interest to have core infrastructure available for their future growth or economic development, social equity issues, they should have the right to do so."

While critics point to the risks of muni broadband, Keane added, few business ventures are devoid of risk and cable has had its share of failures over the years.

"A lot of the ones that have struggled have been because of poor management or whatever," Keane said. "The core models would have worked if implemented well."

Keane didn't want to predict take rates for the service: Some reports have said the service would need about 28% penetration to pay its debt. But he said he expects customers to come from a combination of new household formation and former cable customers.

"The cable company over the years has gotten a

pretty bad reputation from a customer service perspective, and they're trying to change that as quickly as they can," Keane said. "There will be a number of customers that will come to us based on that alone. Others, we're going to have to win their trust."

Fort Collins Connexion marketing manager Erin Shanley said that prior to the muni network build, broadband service in the city was spotty. Some very expensive neighborhoods have top internet speeds of 1 Mbps, while less affluent neighborhoods may not have access at all.

"There was a real disparity across the city as a whole in terms of reasonable, affordable and reliable service," Shanley said, adding that Fort Collins reached out to incumbent providers Comcast and CenturyLink to see how the government could work with them to expand service.

"Quite honestly, the incumbents said, 'Nope, we're good, that's fine,'" Shanley said. "The city said, 'That's not good enough.'"

Since then, Shanley said, incumbents have stepped up service, raising speeds and lowering prices to compete. Fort Collins Connexion offers 1 Gbps broadband for $59.95 per month, compared to about $70 per month for Comcast service. It's one reason why the city doesn't want to tip their hand about what market the service is moving into next.

"They [incumbents] literally have door knockers out there, knocking on doors trying to sell people their new service and locking them in," Shanley said. "We don't want to give them a blueprint of where to go."

Comcast claims it has consistently improved its business in Colorado, beginning well before the muni broadband push began. Since 2011, the company has invested more than $2.9 billion in infrastructure and technology in the state, and has expanded its Internet Essentials program, which offers low-cost internet to individuals receiving federal assistance, About 300,000 Coloradans are Internet Essentials customers.

"Comcast has strong partnerships with the communities we serve in Colorado, and believes if we keep improving on that collaboration we will lead and drive greater technology advancement and investment to reduce barriers to connectivity and connect more people with the network, products and services to meet the needs of the future," Comcast said in a statement to *Multichannel News*. "We know people have choices when it comes to internet providers, and we continue to focus on innovations to improve our communities and our customers' lives."

Faster Speeds for 'Rocket City'

Those looking for evidence of the power of faster broadband to draw in businesses need look no further than Huntsville, Alabama. Known to have one of the largest concentrations of engineers in the country — the home of NASA's Marshall Space Flight Center and several defense contractors has been nicknamed "Rocket City" — Huntsville decided to investigate offering its own broadband service a few years ago.

Initially it hoped to be selected in 2010 as one of the initial markets for Google Fiber's "Think Big With a Gig" contest, but Google chose Kansas City instead. Huntsville ended up with an even better deal when it reached a lease agreement with Google Fiber in 2016.

That was the same year Google Fiber said it wouldn't expand its plans to build its own networks to any additional cities. As part of its 20-year agreement with the city, Google has agreed to pay a set fee to Huntsville Utilities based on the number of homes the muni

CHATTANOOGA, TENN.

From 2011 to 2015, Chattanooga has seen economic development in the city soar, with more than 5,000 jobs and $1.3 billion in new investment added.

Year Network Built: 2009
Population: 177,500
Cost: $390 million
Funding: Revenue bonds, federal stimulus funds
Top Residential Speed: 10 Gbps

CEDAR FALLS, IOWA

Cedar Falls' municipal electric company built its broadband network in 1996 and upgraded to fiber-to-the-home in 2011. The service has a 90% take rate among homes and businesses.

Year: 1996 (fiber); 2011 (FTTH)
Population: 41,000
Cost: $19.3 million (for FTTH upgrade)
Funding: Revenue bonds, federal stimulus funds
Top Residential Speed: 1 Gbps

FORT COLLINS, COLO.

Fort Collins opted out of a state law restricting muni broadband, then spent the next few years exploring its options by talking to successful and unsuccessful projects.

Year: August 2019 (certain neighborhoods); completion in 2022
Population: 171,000
Cost: $142 million
Funding: Revenue bonds
Top Residential Speed: 10 Gbps

HUNTSVILLE, ALA.

With one of the largest concentrations of engineers in the U.S., the 'Rocket City's' muni network has brought more businesses and jobs.

Year: First subs received service in 2017, full deployment by next year.
Population: 197,318
Cost: $60 million
Funding: Revenue bonds
Top Residential Speed: 1 Gbps

SPRINGFIELD, MO

The city, which for 20 years has provided business broadband services through SpringNet, last year tapped CenturyLink as content provider for its muni network.

Year: Construction began this fall, with first customers expected to receive service in spring 2020; network completion by 2023
Population: 167,376
Cost: $120 million
Funding: taxable bonds
Top Residential Speed: 1 Gbps

SOURCE: Published reports, individual communities, ILSR

A technician at work in Huntsville, Ala., where Huntsville Utilities is collaborating with Google Fiber.

network passes, regardless of whether those residences ever become customers of the broadband service. Huntsville began signing on customers in certain parts of the city in 2017. Full coverage is expected by early 2020.

"Our financial return is not based on Google's sales success," Huntsville Utilities CEO Wes Kelley said. "This is not a revenue share. They are leasing our infrastructure for a fixed price per home passed. To our knowledge no one else has done that before."

Kelley said HU has already turned over about 90,000 addresses to Google, and plans to increase that to 105,000 in early 2020. "How many of those are Google [Fiber] customers, I have no idea," he said.

At full completion, HU should be getting about $7 million annually in lease payments from Google, not including lease payments from the city and from in-kind for its own utility purposes. Kelley said the utility is looking for a 10-year return on its capital investment, adding that the Google lease is for 20 years.

"One thing about a municipal utility is that we're willing to look at a longer return on investment than a typical private company," Kelley said. "We measure our business in centuries, not in quarters."

Although Huntsville hasn't fully completed the network yet, several big economic development projects came to life shortly after plans for the service were revealed, including Mazda-Toyota's plans to build a $1.6 billion auto assembly plant and Facebook's pledge to construct a $750 million data center in the city. In addition, Blue Origin, Amazon chief Jeff Bezos's rocket company, is spending about $200 million to set up shop to build rocket engines in Huntsville. Toyota is increasing the size of its engine plant at a cost of about $288 million, separate from the other Toyota facility.

"We do think that this fiber project has contributed to the buzz around Huntsville and the commitment that Huntsville has shown to do what it can to provide the needed infrastructure that this community needs," Kelley said. "We see ourselves as a catalyst."

The public-private partnership is something many communities are looking toward to lessen the risk of muni broadband. At The Broadband Group, a Las Vegas-based consultancy that has helped several communities find partners and funding for municipal broadband (including Huntsville and Springfield, Missouri) president Thomas Reiman said public-private partnerships could potentially change the industry.

Reiman takes a cable operator's view of municipal broadband, having owned an Atlanta MSO in the 1990s. He said that under the old structure of financing projects through bonds and or taxpayer participation, these projects often collapsed under their own weight.

Instead, municipalities, particularly those with an existing electric utility and a knowledge of managing and building infrastructure, should look toward partnering with a broadband provider.

"Just because you're a municipality and suffer because you lack high-speed internet and all the other things needed for economic development, doesn't mean you will be well equipped to be an ISP internally within the city," Reiman said.

Forging public-private partnerships could remove some of the problems with municipal overbuilds, Leichtman added, giving operators a lower cost way to reach out-of-the-way communities and giving cities the business and operational expertise they need to make the broadband service successful.

"That is addressing an issue," Leichtman said. "That is addressing a problem. Overbuilding a market is not addressing a problem."

Such was the attitude that Springfield, Missouri took when its local electric utility, which has been offering a commercial broadband service (SpringNet) to businesses for about 20 years, decided to look into expanding into residential services.

"We looked at our options as a municipal utility and the space we do better in is as the infrastructure provider," Thompson said. Springfield hired The Broadband Group to help develop its broadband plan and has selected telco CenturyLink for residential service.

The city started the prep work for its backbone network in the fall and in February plans to start building the distribution system for its fiber network. CenturyLink, which has a 15-year lease from the city, will provide the drops to individual homes. Service should begin in the spring or summer and construction is expected to continue for two and a half to three years.

Partnerships Reduce Risk

CenturyLink vice president of consumer sales Chris Denzin said the company already had a relationship with Springfield on the commercial side through SpringNet. Though he is not a fan of municipalities that try to offer broadband on their own — Denzin said many cities stumble because they take on too much risk in a business they know little about — Springfield was different.

"Together we de-risk the partnership because we both have to make it work," Denzin said. "That's why this partnership with Springfield is going to work, because we're both fully vested. They're great at something. They've chosen to stay great at that one thing. We're great at certain things as well: transport, content delivery, billing, delivery in the home."

CenturyLink doesn't provide residential service in Springfield today. Mediacom and AT&T are the incumbents in the area. And Thompson realizes that in many small communities, building fiber networks can be cost prohibitive for private companies.

"We definitely didn't want to be in the content space, but the CenturyLinks, AT&Ts and Mediacoms of the world don't want us to be there either, and understandably so," Thompson said, adding that the lease model strikes a balance and allows the city to "reach areas that the incumbent and CenturyLink couldn't have reached probably financially if they were trying to do it on their own. If they could, they would have already done it, and that's a challenge across the United States." ●

BRIDGING THE DIGITAL GAP

Several 2020 presidential candidates have pointed to municipal broadband as a way to bridge the digital divide. Here is what they propose:

Elizabeth Warren: Sen. Warren (D-Mass) has earmarked $85 billion for muni broadband. Her proposed Office of Broadband Access would distribute grants to local governments in unserved and underserved areas and in areas with "minimal competition."

Bernie Sanders: Sen. Sanders of Vermont has proposed $150 billion in infrastructure grants and technical assistance for municipalities and states "to build publicly owned and democratically controlled, co-operative, or open access broadband networks," which can "ensure first responders and communities are ready to deal with the worst climate emergencies."

Pete Buttigieg: The mayor of South Bend, Indiana has put forth an $80 billion "Internet for All" initiative that could include funds for muni networks. Buttigieg supports publicly-owned broadband networks and incentives for private ISPs to build out broadband networks in underserved areas. He plans to invest in public and community-based options for communities that ISPs won't serve, and has pledged to work with state and local governments "to invest billions of dollars directly in community-driven broadband networks," including public-private partnerships, rural co-ops or municipally owned broadband networks. He has also proposed launching a program within the Department of Commerce modeled after the Tennessee Valley Authority to help expand broadband options for residents.

Cory Booker: Sen. Booker (D-N.J.) supports municipal broadband and was one of the sponsors of 2017's Community Broadband Act, which would have amended the Telecommunications Act of 1996 to protect the rights of cities and localities to build municipal broadband networks.

Donald Trump: President Trump hasn't articulated views on municipal broadband specifically for his 2020 campaign, but his administration has taken steps to prevent municipal governments from regulating broadband within their communities.

SOURCE: BroadbandNow

Amanda Kemp