Calix

Building Public-Private Partnerships for Successful Municipal Broadband Deployment

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Why Municipal Broadband Success Accelerates with Public/Private Partnerships

A whopping $2.1 trillion has been invested in broadband networks across the United States since 1996—but this is entirely from private sector investment. While private entities have experienced success in launching broadband networks and related businesses, municipalities and other non-profits have also jumped in to advance their communities.

Local governments, cooperatives, and tribes have led developments in broadband access for their communities, spearheading commitments to build networks and provide exceptional subscriber experiences. Despite the success of private broadband projects, non-profit entities have a strong advantage in many ways. No one can understand their own community quite like those who serve them every day, giving local non-profits a leg up.

However, for many municipalities, deploying broadband can feel challenging. Municipalities are focused on a wide variety of government activities, including other infrastructure like roadways, utilities, and more. Broadband might be a completely new or an unfamiliar type of infrastructure, leaving municipalities looking for assistance as they venture into internet service.

The most expeditious path forward for municipalities to deliver broadband is by partnering with the private sector. Governments can work alongside private providers to bring together a winning combination of knowledge, expertise, and collaboration. Funding programs also support this partnership by providing billions of dollars via the American Rescue Plan Act (ARPA) and the Infrastructure Investment and Jobs Act (IIJA).

This eBook will take a closer look at how municipalities can partner with private broadband businesses to maintain control over the infrastructure and still offer the latest, greatest technology and services.

$2.1 TRILLION
invested in US broadband networks since 1996

Breaking Down the Broadband Business: From Funding to Last-Mile Infrastructure and Support

For municipalities looking to invest in broadband and determine how private partnerships can help them do so successfully, it's important to understand the stages of a broadband business.

There are five main stages to delivering broadband. These apply to both private and public entities. All five stages are critical for anyone delivering broadband services. However, when municipalities want to enter public-private partnerships to ensure success, who does what can differ from a purely privatized path. Let's take a closer look at a common partnership model for municipalities.

Stage One: FUND

Unprecedented levels of federal and state funding are helping more communities bridge the digital divide than ever before. The amount of funding you need depends on factors such as service location, the part of the network you're building, the access technology you're deploying, and your timeline. Many private broadband providers also opt for private investors—or a combination of both public and private funding.

EXAMPLE: Municipalities will first want to pursue grants and then municipal bonds can be utilized to support their network build.
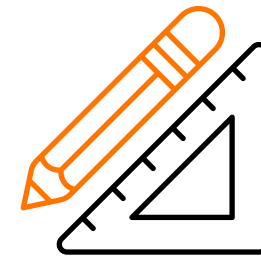
Stage Two: DESIGN

Once funding has been secured, it's time to start designing the network. This is when you dig into bandwidth and speed, network resiliency, and network operations software. You will need to conduct a feasibility study to determine the geographic landscape of your build, any existing infrastructure, subscriber demographics, and local planning regulations. It's also the perfect time to learn about the middle mile infrastructure, which is the part of your network that doesn't connect to the end user points, like homes or businesses. Consider it the "interstate highways of the internet," as quoted by NTIA.

EXAMPLE: Municipalities often engage with private partners who are familiar with conducting feasibility studies and designing network builds of all sizes.
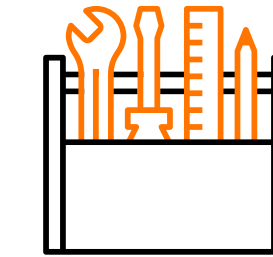
Stage Three: BUILD

After the network build has been designed, it's time to break ground. At this stage, construction contractors are pulled into the mix. There are seven construction stages, which can take anywhere from six months to three years to complete. Teams will need regular communication, ongoing documentation, and inspections and testing to successfully build the network. Safety is also a major concern during this stage. It's also a great time to begin announcing your plans to the community, who can help you better understand their needs.

EXAMPLE: Municipalities will typically leverage outside partners with extensive experience in building networks. These partners can provide guidance on picking construction contractors, and even go as far as lining them up.
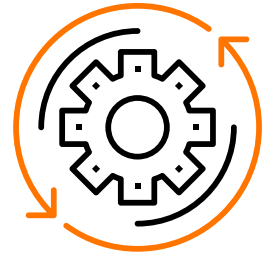
Stage Four: **OPERATE**

Once the network is up, it's time to start operations. This is when the business side of broadband really kicks into gear, requiring staff for everything from network operations to marketing, sales, and customer support. There are many different roles and responsibilities needed for operating a broadband business. Additionally, there are quite a few processes that can be automated.

EXAMPLE: Municipalities may outsource operations to a private partner, eliminating the worry of day-to-day management of the business side of broadband.
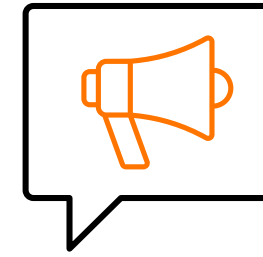
Stage Five: **MARKET**

Finally, it's integral for broadband to be marketed effectively to the community. This stage is ongoing, much like the operations in stage four. It requires ongoing communication plans and campaign deployment, ensuring that everyone is educated. For some, that may mean they can deliver services to end users—and they need to learn what's available to them as a retail service provider (RSPs). For others, it's about using the network as an internet end user or subscriber—and they need to understand the packages available to them (and their value).

EXAMPLE: Municipalities often leverage private partners for the market stage, whether it's to define the open access model or to promote services to subscribers.

As you can see, the way municipalities engage at each stage can vary depending on their level of interest and involvement and where partners make the most sense. In most cases, the municipality will leverage a private partner at a given stage to experience the highest level of success. By leaning on someone who is quite familiar with the stage, municipalities aren't required to learn everything about networks, operations, or marketing (to name a few). Instead, private partners can take over the last mile infrastructure and subscriber management, alleviating the burden on the municipality. This is a popular model of public-private partnership because it is quite low risk, coupling the strengths of both the municipality and private entities.

PRO TIP!

For a complete breakdown of each stage in a self-paced online course, register for Broadband Academy. You don't need to be a Calix customer to enroll.
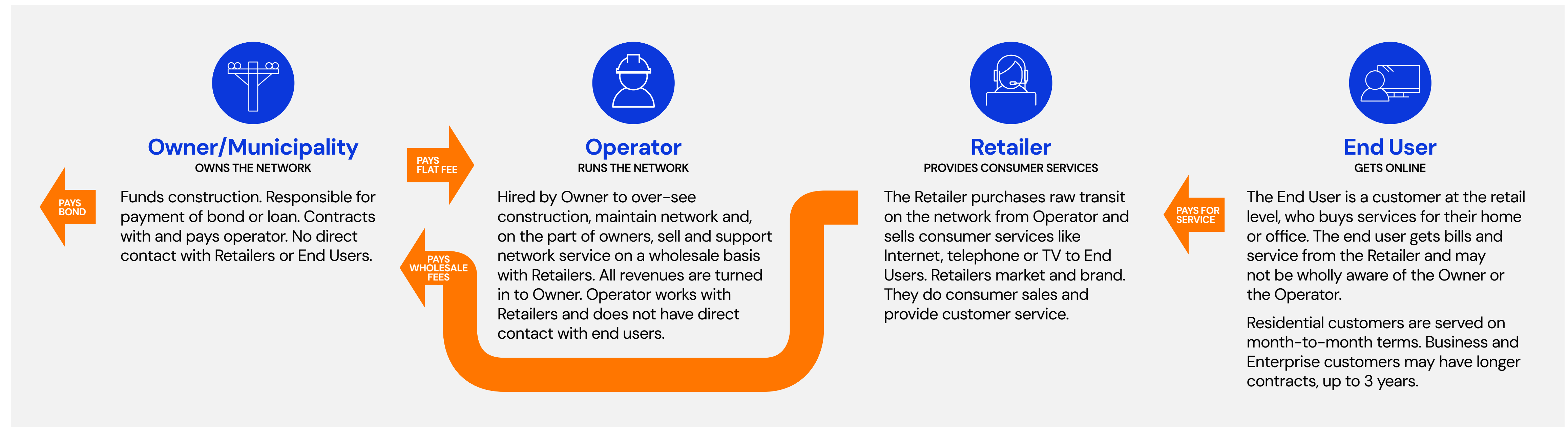
Understanding Open Access and Its Possibilities for Municipalities

The open access model is becoming more popular with municipalities because it leverages the best of both worlds: the municipality gets to own the network, while existing retail service providers (RSPs) get to excel at the last mile infrastructure and subscriber management.

An open access model also allows municipalities to offer high–speed broadband and maintain healthy competition, avoiding a monopolization of broadband services by one large provider. It's quite similar to transport infrastructure, where roads are built and maintained by the municipality and available to all road users. The municipality doesn't extract direct profit from the roads or, likewise, the broadband infrastructure. However, the municipality does benefit from wider economic advantages of deploying broadband, like bringing more vitality to local businesses, increasing educational opportunities, and generating higher property values due to high–speed internet access.

Take a closer look at the chart below to see how this model can work:

Owner/Municipality
OWNS THE NETWORK

Funds construction. Responsible for payment of bond or loan. Contracts with and pays operator. No direct contact with Retailers or End Users.

PAYS BOND

PAYS FLAT FEE

Operator
RUNS THE NETWORK

Hired by Owner to over–see construction, maintain network and, on the part of owners, sell and support network service on a wholesale basis with Retailers. All revenues are turned in to Owner. Operator works with Retailers and does not have direct contact with end users.

PAYS WHOLESALE FEES

Retailer
PROVIDES CONSUMER SERVICES

The Retailer purchases raw transit on the network from Operator and sells consumer services like Internet, telephone or TV to End Users. Retailers market and brand. They do consumer sales and provide customer service.

PAYS FOR SERVICE

End User
GETS ONLINE

The End User is a customer at the retail level, who buys services for their home or office. The end user gets bills and service from the Retailer and may not be wholly aware of the Owner or the Operator.

Residential customers are served on month–to–month terms. Business and Enterprise customers may have longer contracts, up to 3 years.

An open access network can help eliminate the dominance of one large operator, such as Comcast, Charter, AT&T, or Verizon, and encourage healthy competition by allowing smaller broadband service providers (BSPs), including telephone and electric cooperatives, smaller cable companies, and wireless internet service providers (WISPs), to enter the game along with larger providers. For many municipalities, this healthy competition with providers can increase value to the community, giving subscribers more options and encouraging local economic stimulation.

There are several pros and cons to open access networks for municipalities.

7 Benefits of Open Access Networks for Municipalities

1 **Lowered entry barriers.** RSPs can enter the market using an open access network host, avoiding the costs of building their own network infrastructure.

2 **Enhanced competition.** Easier market entry encourages more RSPs to compete, driving choice and competitive pricing for those using the open access network.

3 **Expanded reach.** Municipalities can implement open access networks in areas where private networks aren't cost-effective.

4 **Optimized services.** By leveraging open access networks, cities can provide a range of service options, increasing network utilization and subscriber rates.

5 **Distinction.** Open access networks offer RSPs a way to differentiate themselves in a saturated market through unique service offerings.

6 **Strategic financial planning.** Municipal open access networks can integrate into long-term investment plans, unlike private networks focused on immediate ROI.

7 **Economic growth facilitation.** By launching digital infrastructure, municipalities can stimulate local economic development and qualify for external funding.

5 Drawbacks of Open Access Networks for Municipalities

1 **Pricing pressure.** Market differentiation being limited, RSPs might solely compete on price, risking a detrimental price war.

2 **Specialized knowledge gaps.** Telecommunications may not be a domain of expertise for cities, creating challenges in establishing and upkeeping broadband networks.

3 **Recruitment of RSPs.** Without guaranteed RSP interest, open access network projects risk insufficient participation to sustain the network.

4 **Possible reputational risks.** Poor quality of RSP services could negatively impact the municipality's reputation.

5 **Increased operational complexity.** Running an open access network involves complex coordination among various RSPs and requires advanced support systems.

Open access networks present a workable solution for municipalities to address the digital divide. Utilizing such a network with various retail service providers can enhance broadband functionality and customer service. Particularly in regions typically overlooked by major network providers, this approach offers local authorities an advantage in offering high-speed, dependable broadband and innovative services in conjunction with the network. This is one model that can work quite well for municipalities, and it brings together the power of public-private partnerships.

PRO TIP!

For a deeper look at open access networks and global success stories, read our eBook, "How Open Access Can Help Municipalities Deliver High-Speed Broadband and Competition to Communities."

Navigating Municipal Challenges of Public-Private Partnerships

As with any partnership, there are risks associated with public-private partnerships when it comes to municipal broadband. In particular, municipalities may have little to no experience when it comes to building network infrastructure or providing ongoing broadband services.

But this doesn't mean municipalities are ill-suited to offer it. On the contrary, municipalities are often a much-needed central source for funding, regulatory compliance, and community activities surrounding broadband and its delivery. Because municipalities have familiarity with other types of infrastructure, they're often adept at flexibly navigating the complexities of government and private management.

With public-private partnerships, there are unique challenges that present themselves to municipalities. Leaning too heavily on the interests of the private sector can come at the expense of the local community's needs. At the same time, relying solely on resources within the area can prohibit a municipality from experiencing the full breadth and discipline of expert partners who may have deployed hundreds of networks and set up the broadband businesses that support them.

If the municipality does not weigh this journey thoughtfully and adhere to a well-balanced rollout plan, there can also be risk of a single large provider swooping in, taking ownership of the network and its services, and becoming the only broadband option in town. This moves the positive aspects of local broadband, like economic vitality, rich competition, and workforce development, to a location often outside of the municipality's jurisdiction. Financial benefits move with it—leaving the city without profitable reward. And many large providers may not be well-suited to serve underserved or unserved locations, the heart of many federal and state broadband initiatives and funding.

On the other hand, navigating these challenges carefully can result in a win-win situation. Municipalities should explore a model where they own the infrastructure but can leverage private and experienced broadband service providers and relevant businesses for cloud-based software, billing, support, marketing, operations, and more. This allows everyone to put their best foot forward and focus on what they do best.

Top 3 Challenges and Solutions for Municipalities Offering Broadband

CHALLENGE 1

Challenge: Letting one large outside provider take over broadband for the entire city, either from the onset of the project or eventually if RSPs are acquired due to high infrastructure debt.

Solution: An open access network where the municipality owns the network infrastructure but allows multiple RSPs to use portions of the network and sell their services.

CHALLENGE 2

Challenge: The municipality cannot invest in supporting the ongoing needs of a broadband business, including customer support, network maintenance, marketing and sales, and operations management.

Solution: Allow and encourage RSPs to leverage existing private sector partners who offer cloud-based platforms, technical support, and go-to-market strategies.

CHALLENGE 3

Challenge: Concern that multiple RSPs won't understand the unique needs of the local community.

Solution: Allow not only large providers to compete. Seek out other local champions as RSPs, including non-profits like cooperatives and smaller private groups like local cable companies and WISPs.

For many municipalities, the road to delivering broadband can seem overwhelming. However, with the right model and partners in place, you can leverage the strengths of your position in local government with the newest technologies and offerings from cutting edge broadband service providers—and the companies that support them.

💡 PRO TIP!

Consider leveraging a company with a partner ecosystem, who can recommend top partners throughout every stage and have extensive knowledge of the entire broadband industry.

# Finding the Right Partners for Your Broadband Journey

Once you determine where you'd like to engage with private partners, the next step is determining which ones to use. As a refresher, there are five main stages to becoming a broadband service provider. You can leverage partners from the private sector in any of the stages.

Stage One: **FUND**

Municipalities typically have access to a large amount of public funding and leverage it to support their network build and ongoing services.

TYPES OF PARTNERS: While municipalities may have access to more government funding, these programs are distinct from others. Look for a partner who could help you evaluate which programs are available to you and can help walk you through the application process.
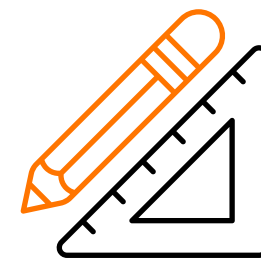
Stage Two: **DESIGN**

Municipalities often engage with private partners who are familiar with conducting feasibility studies and designing network builds of all sizes.

TYPES OF PARTNERS: At this stage, you may need to consider working with a consulting-engineering (CE) firm. They can help you plan out a network build, from start to finish, and start pointing you in the right direction for additional coverage.
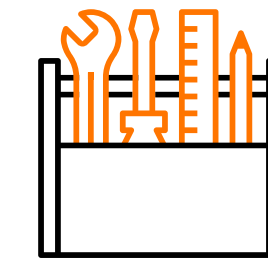
Stage Three: **BUILD**

Municipalities will typically leverage outside partners with extensive experience in building networks. These partners can provide guidance on picking construction contractors, and even go as far as lining them up.

TYPES OF PARTNERS: Skilled design and engineering partners can help you determine the specifics of your network and its construction. You may also need to partner with hardware manufacturers and infrastructure provider to acquire the necessary components, such as routers, switches, and fiber optic cables. Other technology vendors, including cybersecurity firms, may also come into play.
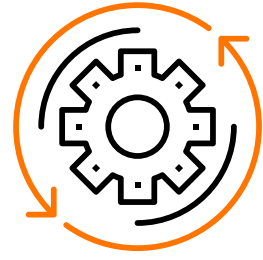
Stage Four: **OPERATE**

Municipalities may outsource operations to a private partner, eliminating the worry of day–to–day management of the business side of broadband.

TYPES OF PARTNERS: Many broadband service providers partner with third–party vendors for functions like customer support, billing, and network management. If you opt for an open access network, your RSPs may already have these vendors in place. In that case, you can rely upon your RSPs to manage their own day–to–day operations, leaving you with only the network to maintain.
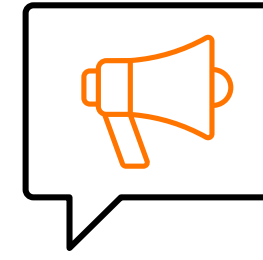
Stage Five: **MARKET**

Municipalities often leverage private partners for the market stage, whether it's to define the open access model or to promote services to subscribers.

TYPES OF PARTNERS: If you need to promote your open access network to encourage RSPs to utilize it, you may need to find a partner with experience in promoting this type of network to the appropriate channels. If you are planning to also educate the community about the network's arrival, and how they can use it, you might look for a partner with experience in go-to-market strategy who understands how to encourage subscriber (or end users) to sign up for high–speed internet. In an open access model, the RSPs will likely do a large portion of their own marketing to subscribers—but you may determine that it's important to spread awareness about the internet options coming to your city.

As you can see, there are many different types of private partners that can potentially come into play. Every municipality will determine what works best for them, but they can lean on the success of other municipalities who've gone down this broadband path before.

Municipal Broadband Success Stories

Lit Communities

Lit Communities was established in April 2019 with the mission of helping municipalities across the United States provide high-speed broadband to unserved and underserved communities. In February 2021, it secured the initial capital investment to build its first community network in Medina County, Ohio.

The Media Country Fiber Network (MCFN) will span 400 miles of fiber and bring FTTH to 45,000 homes and businesses. Lit Communities selected Calix Intelligent Access EDGE and the E7-2 Intelligent Access System as the foundation of the Medina County network. It also implemented the comprehensive Calix Revenue EDGE platform to offer subscribers a range of managed services and worked Calix Professional Services to design and deploy the network.

City of Pharr

Home to over 80,000 residents, Pharr, Texas was named the worst connected city in the U.S. in 2019, with nearly 60 percent of households lacking any form of connectivity. Neighboring communities reaped the benefits of the internet, while in Pharr, kids sat in fast food parking lots to complete school assignments. Pharr decided to become a broadband provider. Backed by $16 million in federal grants and $48 million in revenue bonds, Mayor Ambrosio Hernandez, M.D., committed to providing affordable high-speed internet access for every resident, regardless of income.

To deliver this ambitious project, they needed a partner that shared their purpose. Pharr took advantage of the comprehensive Calix Broadband Platform, including Intelligent Access™, Unlimited Subscriber™, and Calix Cloud®. To maximize their investment and train staff, Pharr partnered with Calix Success for support, education, and guidance at every step of their journey.

Read more **here.**

City of Longmont/NextLight

NextLight was established in 2014 by Longmont Power & Communications to provide fiber-optic internet services to residents and businesses in Longmont, Colorado. Three years later—thanks to NextLight—Longmont was declared Colorado's first "Gig City" and can now access 2.5 Gig and 10 Gig internet services from NextLight. As such, Longmont became the first community in the state to offer symmetrical gigabit speeds citywide and without data caps or contracts.

During 2018, NextLight was rated the fastest internet service provider in the United States by PCMag, and has consistently ranked among the nation's fastest networks ever since. In fact, NextLight was recognized again by PC Magazine as the second fastest ISP in the nation for June 2022. A Calix customer since their founding in 2014, NextLight has deployed an end-to-end Calix network and achieved 98 percent customer satisfaction.

Read more **here**.

The Importance of a Balanced Public-Private Partnership

For local governments, the most effective strategy for providing broadband services is to collaborate with private companies. This alliance allows for a synergy of professional know-how and cooperative efforts. Additionally, substantial financial backing for such partnerships is available through initiatives like the American Rescue Plan Act (ARPA) and the Infrastructure Investment and Jobs Act (IIJA), which allocate billions of dollars in funds.

A municipality can involve a private partner at certain stages for better outcomes, as demonstrated with the open access model. Private partners often handle infrastructure and customer management, reducing the load on municipalities. This common public-private partnership model is favored for its low risk and combines the advantages of both municipal and private capabilities.

Municipalities should consider owning the infrastructure and collaborating with private sector experts for cloud software, billing, customer support, marketing, and operations. This collaboration allows each party to leverage their expertise and deliver the best possibilities to the community through high-speed internet. No community should be left behind without the wide-ranging benefits of broadband—and municipalities can look to integrate their own experience with others to bridge the digital divide.

To learn more, <u>visit our website</u>.

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