P3 Builds Broadband in Lincoln

BY DAVID YOUNG AND BRANDON KAUFFMAN

Think of the number of devices you have running at home or at the office at any given time. Cell phones, laptops, computers, gaming consoles, iPads, watches, TVs, smart applications—people sometimes have up to 20 devices, and they all require data and Internet access to function, which requires the bandwidth on the back end. It's hard to conduct a Zoom meeting if you don't have bandwidth.

GETTING STARTED

In 2011, the City of Lincoln, Nebraska, had average Internet speeds between four and 12 megabytes per second (Mbps). Two primary companies were providing Internet services in the city. The state's current Internet speed is about 98 Mbps, thanks in part to an initiative started in 2012, in partnership with the Chamber of Commerce, called the Lincoln Technology Improvement System. Nebraska state law prohibited municipal broadband, so the city had to look for a public-private partnership.

City engineers had started laying conduit in the downtown area every time they did street work, so Lincoln already had more than 300 miles of conduit laid in infrastructure for fiber. The Lincoln Technology Improvement System sought to leverage the existing conduit to attract new carriers to the community. In three years, five new carriers were leasing the city's conduit.

In 2015, a regional company called ALLO Communications approached the city about building a 100 percent fiber network across the city—fiber access to homes for high-speed cable, broadband, and voice services. The foundation of the agreement was that the city would lease the remaining space in the downtown network. We agreed to construct conduit across the city to allow the fiber access, and those were governed through three agreements—a broadband franchise, primarily, and a cable franchise and a conduit lease.

SERVICE LEVELS AND COST

The broadband franchise gave the city a minimum service level speed of 100 Mbps with one gigabit service available throughout the city and guaranteed term net neutrality, which means that the Internet provider would have to provide access to all content applications without blocking sites or slowing down the speeds. There was no paid prioritization that would allow, say, Google, Facebook, or Netflix to pay for increased data transfer rates. And we didn't allow for any type of data caps that would allow the provider to potentially impose monthly limits and overage charges.

The benefit of the broadband franchise was that we'd have a system that passed every residence within four years, with no contracts, no installation fees, and no modem fees. The service to government buildings was one hundred government buildings free at one gigabyte per second (Gpbs), and 50 government buildings at 10 Gpbs for no charge. And then by the end of the 25-year term, all government buildings would receive that 10 gigs. There was also an agreement for 500 traffic signals to get one gig for a one-time installation fee. The agreement allowed connections for up to 75 qualifying non-profits for up to 10 years. And there was a low-cost tier of service created to help lower-income people throughout the community; they could access 20 Mbps broadband, 23 cable channels, and voice for only $45 a month.

4 KEY CHALLENGES

Communities that want to pursue a municipal broadband program face four key challenges, according to *Broadband Models for Unserved and Underserved Communities*, a whitepaper by US Ignite and Altman Solon (us-ignite.org).

1 | Budgeting. Create a detailed analysis, including designing a full network plan, as part of the planning phase. The major costs include labor for delivering the service, managing, and maintaining the network, and for supporting any debt and interest payments.

2 | Funding. "Traditional" funding options include contributions from anchor institutions, selling bonds, enlisting the involvement of a local utility, securing federal and state grants, or working with private partners. More "creative" ideas include getting residents contribute money to the program by either paying for several months of service upfront, or pooling money across neighborhoods and buying bonds from the city.

3 | Diligence. Don't try to simply copy another city's successful project—do your diligence to determine the right business model for your community.

4 | Related Benefits. Think about other ways in which the program can be used to serve your community. US Ignite notes that while residential service is often the primary motivation, cities should not forget about enabling Internet access to the commercial sector, which can spur job and value creation.

EXHIBIT 1

SCENARIO MODELING OF ANNUAL SUBSCRIBER PROJECTIONS

- Low customer adoption rate
- Medium adoption rate
- High adoption rate
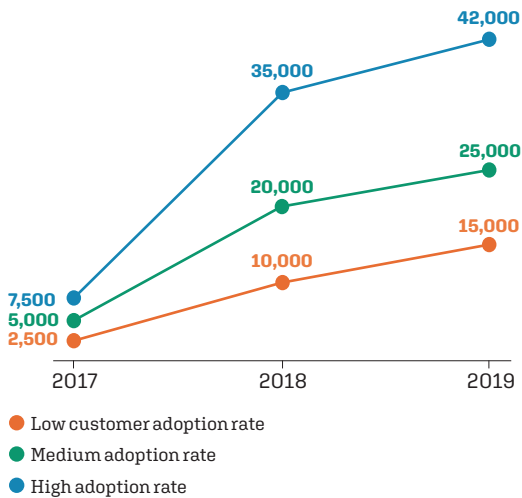
The city's commitment was to build out the conduit infrastructure across the city. To pay for it, we relied on internal funds, basically internal borrowing—we typically managed around $350 million in cash pools. The city used reserve cash from the general fund as a temporary source to fund the initial infrastructure build out. The money was then repaid through a $3 per customer, per month infrastructure support fee. That rent included all customers that were piggybacking on the fiber through other internet providers that rent fiber lines. To determine the repayment schedule, the city created scenario models for annual subscriber projections in 2017, 2018, and 2019. (See Exhibit 1.)

Another plus was that the competition forced the city's other two service providers to upgrade. In 2017, one of the firms upgraded from 60 to 100 Mbps, and the other service also upgraded services with a gig to the home. In 2019, ALLO completed access to all residents throughout the city. The contract stipulated that the build-out needed to be done in four years, and they finished it in less than three years. The city officially broke even in 2019 with the franchise revenues that were coming in.

CONCLUSIONS

The project greatly increased broadband speeds throughout the community, which helps residents and businesses. Lincoln now has the fourth-fastest broadband of any community in the United States. It also provided access to conduit throughout the whole city, so we could focus also on smart city initiatives in the future. 🅐

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HELPING SCHOOLS DURING THE PANDEMIC

The City of Lincoln has been able to provide three wireless network sites at Lincoln public schools through its partnership with ALLO Communications. If you have a Chromebook but no Internet access, the tool is worthless. Lincoln wanted to provide access sites for children throughout the community, so our partner made wireless networks that are specifically hooked up to the Chromebooks for Lincoln public schools so kids could have access to finish the school year. All the service providers in the community also offered 60 days' free service for eligible new customers. ALLO also partnered to do some temporary access for free for eligible customers, for those that had kids to Lincoln public schools.

We were facing the same struggles that everybody's been going through—how to get access, how to expand VPN resources to get everybody on the system, and how to make sure people have the bandwidth they need at home. We also looked at the schools where broadband access was lacking and focused on putting the resources where they were needed in the community so we could ensure that kids have access to broadband services so they can use those Chromebooks. We put in access points where the kids could typically walk or ride a bike to a neighborhood school. There were in parking lots and were designed to hook up to just the Chromebooks, so they were the only ones with access.