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## How Communities Succeed With Fiber



# Why Municipal Networks Should Be Disruptive

The traditional telecom model is not working. For a locality to succeed with a municipal broadband alternative, it can't just duplicate the incumbent model.

By Jeff Christensen and Robert Peterson / *EntryPoint*

A city considering a municipal broadband project should start by thinking about strategy, not feasibility. Today's feasibility studies tend to be lopsidedly tactical. Typically, studies start with handwaving toward strategic issues and then dive into such tactical matters as assessment of the local market, network requirements, network design, cost estimates and financial projections.

It is possible to do an excellent job building a functional network (tactics) and still do the wrong thing (strategy) by building a network that never gets broad adoption. A feasibility study that leads a city to do things the right way but not to do the right things will result in a network that cannot evolve in the rapidly changing future.

A strategic mindset focuses on the future, articulates a vision, embraces change, scans the external environment, invites innovation and creativity and wonders what can be. By contrast, a tactical mindset focuses on immediate needs, sets achievable goals and objectives, prefers stability, focuses internally, has a bias toward reliability and aims to improve the way things currently work.



## THE THEORY AND PRACTICE OF DISRUPTION

Any industry that fails to build its strategies around serving its customers' interests should be disrupted. To disrupt means to redefine the way things are done. Whether cities articulate this or not, municipal broadband is about disrupting the dominant telecommunications model. Municipal broadband can – and should – redefine the technologies and business models used to deliver broadband.

Many cities that have pursued municipal broadband projects have been weak on strategic planning as they focused on tactical

Table 1

implementation. Too many cities adopt legacy telecom methodologies rather than redefining the market with new technologies and a new business model. A focus on tactics makes a city vulnerable to simply trading seats with the incumbent within the same broken business model. Cities can completely disrupt the dominant incumbent control business model by shifting to an emphasis on strategies – specifically, strategies that will give consumers what they want from broadband networks.

To create a strategy, a city should give some attention to disruption theory. For the past 20 years, Clayton Christensen, a professor at Harvard Business School, has been writing about disruption and innovation. His key ideas include the following:

- 1) Disruption always happens from the bottom of the market. This is the part of the market that is unattractive to dominant industry powerhouses.
- 2) To disrupt means to redefine or reconsider the job to be done or the problem the customer is trying to solve.
- 3) Redefinition of technology often involves turning previously complex tasks into “brain-dead simple” tasks.
- 4) Redefinition of the business model generally drives disruption even more than the introduction of a new technology.

In addition to paying attention to Christensen’s theories, cities should look for case studies that may be helpful as they develop their strategies. To start with, cities should become familiar with successful municipal broadband projects, particularly those from the part of the market that is unattractive to dominant industry powerhouses.

Underserved and unserved communities are forced to become creative in embracing technologies and business models that ultimately will redefine the way broadband networks operate. The “job to be done” in municipal broadband must be different from the primary job of incumbent-controlled broadband, which is to maximize return on

Market disruption starts from the bottom of the market – the part that is unattractive to dominant industry powerhouses – and proceeds by redefining the job to be done or the problem to be solved.

investment. Technologies that will fuel the redefinition of broadband networks will likely turn previously complex tasks into “brain-dead simple” tasks. Most important, cities should look for business models that incumbents cannot or will not replicate because these business models will undermine the incumbent’s strategies and objectives.

An example of a municipal broadband project that checks all these boxes from Christensen’s disruption theory is the Ammon Fiber Network.

- The city of Ammon is at the bottom of the market – it has a population of 16,000 and is located in southeastern Idaho, far from any major metropolitan areas.
- The job to be done, as described by Ammon’s mayor and city council, was to “create an open, software-defined fiber optic infrastructure with the goal of reaching every address over time.”
- From a technology perspective, the Ammon network is the first municipal network to implement a software-defined network (SDN) that is virtualized and automated, delivering networks on demand while moving services to the cloud.
- For its business model, Ammon implemented a local improvement

district for broadband infrastructure, in which residents pay \$17.00 per month for a gigabit fiber optic connection and \$16.50 per month for maintenance and operation of the network. The city provides open infrastructure and allows service providers to openly compete and innovate across that infrastructure.

Is there evidence that Ammon’s model has the potential to be disruptive and redefine broadband networks? Though Ammon is celebrating the official opening of its network this month, it actually launched its ISP Cloud in September 2016 to serve the first phase of its rollout. Think of the cloud as a marketplace for ISPs or open access for a cloud world. In Ammon’s cloud, a subscriber can change ISPs in 20 seconds. Point – click – subscribe. Point – click – unsubscribe. No customer service calls, no waiting, no truck rolls.

Since the municipal network went live, ISP prices in Ammon fell from \$44.95 to \$9.99 per month for a 100 x 100 Mbps ISP connection. The timeline is shown in Table 2. In the first phase of its network implementation, Ammon achieved a 70 percent take rate, and that number continues to climb.

**TABLE 2: ISP PRICES ON THE AMMON FIBER NETWORK**

ISP	DATE	SPEED	PRICE
ISP 1	September 2016	100 x 100 Mbps	\$44.95
ISP 2	October 2016	100 x 100 Mbps	\$39.99
ISP 2	July 2017	100 x 100 Mbps	\$9.99

Wealth can be understood as a function of the number of rewarding choices an individual can make. The lack of choice and control over high prices and poor service makes customers angry.

## A WEALTH OF CHOICES

What Ammon and EntryPoint have done together has significance beyond the falling prices for ISP services.

Rory Sutherland, advertising and social media expert, argues that wealth is a function of the number of rewarding choices that an individual has the power to make. New technologies and business models that are valuable allow people to do meaningful things that were previously not possible.

Under the dominant telecommunications model, customers have a poverty of choices. An internet search on the “most hated companies in the United States” shows a dominant telecommunications provider listed as No. 1. A search on companies with the worst customer service in 2017 shows several telecommunications companies high on the list.

Is this anger and dissatisfaction solely a function of poor customer service, or is something bigger going on? It is one thing to be on the receiving end of poor customer service.

It is another thing to be unable to do anything about it because there is no option to move to something better. The lack of choice and control over high prices and poor service is what makes customers so angry.

Rideshare companies such as Uber and Lyft understand the value of a business model that moves control to the customer. Customers who want to get from point A to point B know what the cost of the ride will be before they request a ride and can compare this cost to alternative modes of transportation. Customers also know they can rate the driver if the car is not clean or the driver is not polite.

The Ammon model, which runs on EntryPoint’s cloud orchestration platform, restores choice for choice-starved customers. Because customers of the Ammon Fiber Network can easily change ISPs, real competition can take hold and create a dynamic marketplace for ISPs that fundamentally changes the value customers get from ISPs. The barriers to entry are lowered as new service

providers can be provisioned in less than 24 hours for a monthly fee of \$50.

We predict that prices will continue to fall, speed will continue to rise and service quality will continue to increase. Additionally, residents are not forced to sign up, and taxpayers are not taxed to build the network.

Table 3, which shows basic data about the Ammon Fiber Network and its competition, illustrates how the network restores choice to consumers.

In summary, cities should focus on the unique value municipal broadband can provide that traditional broadband incumbents won’t or can’t provide. If a city defines the problem it is solving as a “fast internet” problem, that city will then be willing to accept any solution to that problem. That is not to say that fast internet is not important. Ammon and EntryPoint argue that if the big problems with internet access can be solved, fast internet will happen naturally. Ammon’s answer to the question of value from municipal broadband has been to focus on giving customers the solutions they seek through robust infrastructure owned by the city on behalf of residents and an open marketplace for services. ❖

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**TABLE 3: AMMON FIBER PHASE 1 DEPLOYMENT DATA**

Residential take rate	70%
Number of ISPs signed up to provide services	4
Infrastructure allocation per homeowner	\$3,000
Infrastructure finance term	20 years
Monthly infrastructure expense (fiber optic connection)	\$17.00
Monthly maintenance and operations expense (1 Gbps connection)	\$16.50
Monthly ISP - best value (100/100 Mbps)	\$9.99
Total monthly cost	\$43.49
Incumbent monthly ISP offering (50/5 Mbps) + data caps	\$75.00+

The Ammon model restores choice and control for choice-impooverished consumers.