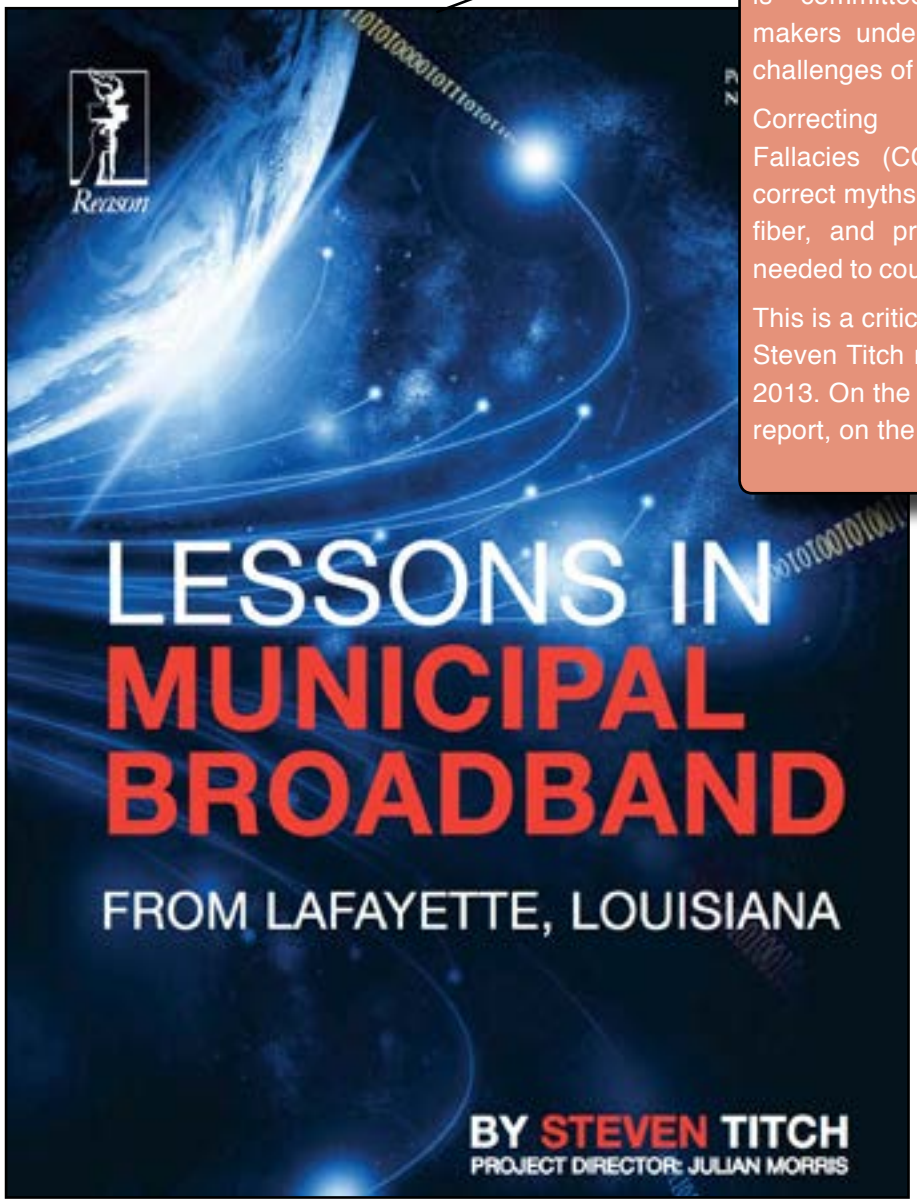

Community Broadband Networks is committed to helping policy makers understand the reality and challenges of community fiber.

Correcting Community Fiber Fallacies (CCFF) is designed to correct myths surrounding municipal fiber, and provide the information needed to counter erroneous claims.

This is a critical response to a report Steven Titch released in November, 2013. On the left you will see Titch's report, on the right our commentary.

September, 2014

Correcting Community Fiber Fallacies:

The Reality of Lafayette's Gigabit Network

By Christopher Mitchell
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ABOUT @COMMUNITYNETS

At MuniNetworks.org, we provide resources for those joining the movement to build broadband networks that are directly accountable to the communities they serve.

As more community leaders realize the economic benefits of faster, more reliable Internet services, they are pursuing local control of connectivity through public ownership, cooperative models, and other nonprofit approaches.

The vast majority of community broadband networks, particularly fiber-to-the-home networks, have lowered prices and spurred job growth in their communities. **We find out what works, and help other communities** replicate these results.

- ILSR tracks more than 400 local government owned fiber optic networks.
- We maintain the definitive clearinghouse on local government strategies for expanding access to fast, affordable, and reliable Internet connections.
- ILSR works with communities across the United States to create the policies that ensure telecommunications networks serve the community.
- We educate and inform the public and policy-makers nationwide through persistently reporting on community broadband initiatives and their opponents.

ABOUT ILSR

ILSR
INSTITUTE FOR
Local Self-Reliance

We believe we make better and more informed policies when those who design those policies are those who feel their impact.

The Institute for Local Self-Reliance works with citizens, activists, policymakers, and entrepreneurs to provide them with innovative strategies and working models that support environmentally sound and equitable economic policies and community development.

Since 1974, ILSR has championed local self-reliance, a strategy that underscores the need for humanly scaled institutions and economies and the widest possible distribution of ownership.

TO CONTACT ILSR email rebecca@ilsr.org, or visit www.ILSR.org

Reason Foundation

Lessons in Municipal Broadband from Lafayette, Louisiana

By Steven Titch

Project Director: Julian Morris

Executive Summary

Government-funded broadband projects, exemplified by the one undertaken in 2005 by Lafayette Utilities Service (LUS), start with a fundamental error: governments believe they are entering a monopoly-based infrastructure business when in reality, they are entering an extremely competitive service business.

Because they assume broadband is an infrastructure business, they believe the model will follow the classic utility: high upfront construction costs, followed by high yield revenues that pay back the investment, while the installed plant can be routinely maintained as it depreciates on a long schedule. As with a classic utility, customer acquisition costs are believed to be low and incremental.

The shock comes when they learn, usually within two years of start-up, that technology cycles in broadband are short. Equipment can't be "maintained" over a decade; it often has to be upgraded or replaced every two to three years. An even bigger shock comes when cities discover how much they must spend year-to-year to build and maintain viable market share. This is when municipalities realize that it's not the speed of its Internet connections, but the quality, breadth and competitiveness of its cable TV service that drives revenues.

This paper examines one of the largest and most publicized municipal broadband projects in the U.S.: the $160-million fiber-to-the-home (FTTH) project launched by Lafayette Utilities Service (LUS) in Lafayette, Louisiana.

Six years into the operation, LUS Fiber is:

- 30% short of its revenue projection as set out in its business plan
- More than $160 million in debt

Steven Titch has long been a critic of public ownership, though his writings have consistently showed significant gaps in his understanding of what motivates communities to invest in their own networks and even how they have done it. Some of these may be attributed to differing philosophies of the proper role of government. However, the sheer number of factual errors suggest that he is not an actual expert on this subject so much as someone who can appear to be an expert in order to fool media and policymakers.

Titch once promoted his work as "Expert Editorial." Here is how he described his work - quotes in original:

Expert Editorial offers a critical "third-party" viewpoint for media and customer marketing campaigns. We can provide your target audience with the context, background and significance of your technology from an analytical perspective and detached from your own marketing and sales personnel. - http://web.archive.org/web/20070429054211/http://www.experteditorial.net/TechEvangelism.htm

Though Titch frequently alleges that LUS Fiber has been subsidized, he never substantiates the claim. LUS Fiber is emphatically not taxpayer-funded. Lafayette Director of Utilities Terry Huval has frequently told me, "Not one dime" of taxpayer dollars. The big telephone companies in particular have no problem taking lots of government money. However, this project – Lafayette – was funded by private investors that bought revenue bonds from the city-owned utility after having been informed that no taxpayer dollars would be used to make them whole if the project did not generate anticipated revenues. Throughout this paper, we'll see many instances where Titch just casually throws these terms around to confuse the reader– even though AT&T is more taxpayer funded than LUS Fiber.

Again, Titch provides no evidence for these dramatic claims.

Significant oversimplification. Different parts of the investment have different lifecycles. Fiber lasts decades. Switches and routers often last 5-7 years. And once again, local governments create business plans that take this into account.

This certainly depends on the market but Titch is correct in noting the high costs of marketing; this is actually where many municipal governments struggle at first. There are some signs, however, that cable TV may no longer be driving revenues. If television service itself was to become less important, it could be better for all small deployers, not just munis. TV is hard for small private companies and local governments because the big cable companies not only have the ability to negotiate for better prices, they often have ownership interests in the channels with which they are negotiating.

This is out of context and misleading. Its only use is to malign LUS Fiber. For one thing, the starting date for "six years into the operation" is unclear, as LUS Fiber signed its first customer up in 2009. When Titch authored this report, it was based on financial data from years 3 and 4.
As with any plan, things change. LUS Fiber should be evaluated based on what it has delivered to the community measured against what it has cost the community – not what it believed its financial performance might be. No business thrives for years without revising its business plan. And aspects of the LUS Fiber plan needed to change after numerous unwarranted lawsuits and its rivals changing their business plans to respond to the LUS business plan, which had to be openly published.

This is an industry with a lot of debt. Not as much as the electric industry, or the debt from building road infrastructure, but a lot of debt. True of private firms as well as public. Critics sometimes try to suggest that debt is a problem itself but the question is whether the debt is on track to be retired in time.
Lafayette has missed no debt payments.

- As of last year was losing $45,000 a day, according to the Lafayette's independent auditor
- Struggling to compete with cable, telephone, wireless and satellite service providers in terms of price, performance and service options.

Reason chose to profile LUS Fiber because it is often held up as a policy success. Groups such as the Institute for Local Self-Reliance, which profiled the operation last year in a report titled *Broadband at the Speed of Light: How Three Communities Built Next-Generation Networks,* say it is a model to be followed. It has drawn national coverage from prominent journalists Bill Moyers and Tom Friedman. Susan Crawford, former telecom advisor to President Obama, devotes several pages of her new book, *Captive Audience: The Telecom Industry and Monopoly Power in the New Gilded Age,* to LUS Fiber's story.

Both progressive analysis and mainstream news reports tend to play up the benefits of fiber optics as well as the compelling story of a small town taking on the huge, impersonal telephone and cable companies. These reports also further reinforce the erroneous notions that broadband is a monopoly that can be effectively countered through government alternatives.

In reality the situation is much more complex. This paper will spell out those complexities, which are either glossed over or dismissed outright by the municipal proponents and the media. They represent risks and realities that should be understood by any municipality before it moves ahead with a public broadband project.

For all the enthusiasm about municipal broadband, one fact remains: A great majority of systems fail. Those that survive end up falling short of their promised goals of lower prices, better service and ubiquity. One high-profile project after another—Ashland, Oregon; Provo, Utah; Tacoma, Washington—have leveraged their taxpayer funding, only to fall short of goals and end up facing a mountain of debt.

In some cases, the city recovers its investment through sale of assets, or by converting a partially completed network into a system exclusively serving the local government agencies. Compared to those past projects, LUS Fiber is in better shape, but it is far from secure. Whether LUS Fiber will truly be a success remains to be seen. But as of early 2013, it is still short of its financial and competitive goals. As this report was going to press, LUS Fiber's management was predicting that the operation would be self-supporting by 2016. But it is turning to its own municipal parent, LUS, for more revenues. The 2013–14 budget for the Lafayette Consolidated Government calls for $1.3 million in LUS purchases from LUS Fiber for the next fiscal year, a 185% increase over the $454,000 projected for the current fiscal year, which will end October 31.

FTTH networks are very capital intense and the early years are expected to lose significant amounts of money. That year was anticipated to incur the most losses and it did. The costs of connecting each customer are significant and must be paid before that customer generates a dime of revenue.

LUS Fiber has captured something like 1/3 of the market already. If the market is defined as 3 players – AT&T, Cox, and LUS Fiber as I think it should be, then the network has started strong. If we use Titch's desire to include satellite and wireless providers, then LUS Fiber has far more market share than it would if each rival had a similar share. Either way, this is a sign of early success, not failure.

Hey, That's us! Thanks for the shout-out, Steven!

It is worth noting that there are competing definitions of monopolies. On a panel where we were debating, Titch made a strong case for a very technical, limited definition of what a monopoly was. I prefer a looser definition from Milton Friedman and more commonly used throughout history: a firm that has a lot of market power and one that few consumers have the ability to avoid. As an example, Comcast is often rated as the most-hated company in America and yet grows year after year. If we really had a choice in service providers, would that be happening?

We take these issues more seriously than he suggests. My organization does not want communities to build municipal networks that fail to meet their targets. We have no financial interest in whether a community builds its own network. We work in this area because we have found the preponderance of evidence shows that communities with their own networks develop stronger economies, pay less for better services, and generally have a choice in ISPs.

By what definition? We are tracking more than 400 local governments that have made investments into a network that is offering services to local businesses and/or residents. (see ***MuniNetworks.org/ communitymap.)*** Some 150 networks operate on a citywide basis. Yet when pressed to list the supposed failures, Titch can only list a few and several of those are disputable.

These three are among the very few to have leveraged taxpayer funding. Ashland made a number of mistakes but also forced the incumbent to vastly improve its services. Provo was handicapped by the *state* legislation that forced it to choose a flawed business plan and would not allow them to adjust when it was not successful. Tacoma built its own network when the incumbent would not upgrade, leading more than 100 businesses to locate there, according to various sources. Though it has not repaid the debt on the network, Comcast subscribers in Tacoma pay less for the same services than people in Seattle. Even the worst case scenarios described by critics of these networks are not nearly as bad as they seem. No one will dispute that these systems have failed to meet their goals in one or more ways. However, they have also brought benefits to the community that begin to balance the costs. And they are a minority of systems. ***To be clear, Lafayette is not one of these struggling systems.***

We are familiar with some that have privatized but very few have converted into only serving public institutions. Many networks start out that way, and we estimate more than 1,000 local governments operate networks that only connect public facilities.

If this is the worst criticism from its worst critic, LUS Fiber is doing pretty well.

This is again misleading. There are many legitimate reasons for local governments to purchase these services from the utility. Indeed, many local governments of this size pay considerably more to incumbent telephone and cable companies for considerably less advanced network services. Electric utilities are also being asked to use more communications technology to reduce potential for widespread power outages.

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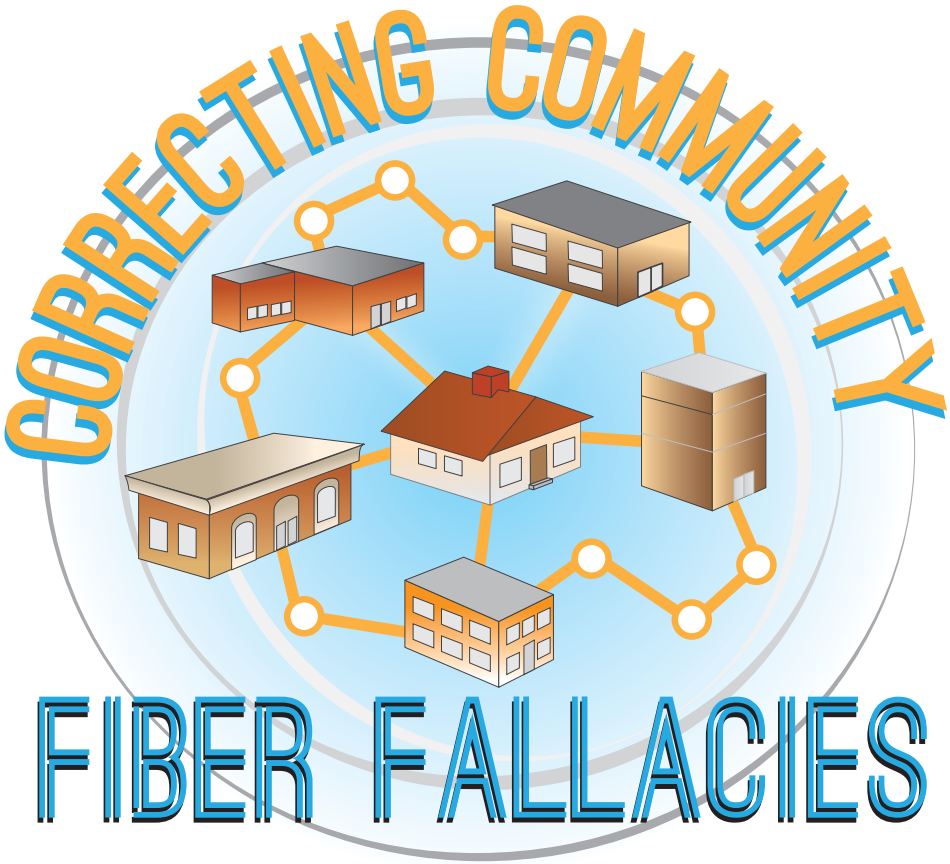

INSTITUTE FOR
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Introduction

Municipal broadband is a high-risk proposition. Cities considering such projects, which can entail the borrowing of more than $100 million, must understand the complex market they would be entering.

A number of influential voices in policy and media, including President Obama's former telecommunications policy advisor, Susan Crawford, say that municipalities should offer broadband service. They say that for some communities, a municipal broadband system may be the only way to ensure their residents and businesses enjoy the benefits of a high-speed link to the digital economy. They fear that because of their size or low per capita income, these communities will be passed over by commercial service providers for whom high revenues and profit are a priority.

At the same time, the national media tends to hype large-scale municipal projects in a handful of cities and towns, such as Chattanooga and Bristol, Tennessee and Lafayette, Louisiana, portraying these communities as determined Davids successfully overcoming the broadband intransigence of incumbent telephone and cable TV Goliaths.

But while focusing on a few apparent successes, those news stories and reports overlook the hundreds of municipal systems that have struggled financially or failed outright. While proponents don't attempt to play down the costs of municipal broadband, they often present it as something that cities can easily do.

The principal rationale for municipal broadband is a contention that broadband service works like a utility, akin to electricity or water, which leans toward natural monopoly. Indeed, Crawford makes this assertion the basis of her 2013 book *Captive Audience: The Telecom Industry and Monopoly Power in the New Gilded Age*. Among other policies, the book endorses municipal broadband as a viable means for expanding Internet access.

Municipal provision, Crawford claims, can be an effective and fiscally responsible way to deliver broadband. It can serve previously unmet consumer needs in a community and generate community economic development. Hers is just the latest in a series of calls from organizations such as FreePress and Institute for Local Self-Reliance (ILSR), as well as media figures such as Tom Friedman and Bill Moyers, that have been promoting municipal broadband policy for more than 10 years. This study aims to evaluate these claims by examining the largest municipal

This depends entirely on the approach. Some communities have engaged in strategies that entail almost zero risk, as we documented in our case study on Santa Monica's City Net (***http://www.ilsr.org/santa-monica-city-net/*).**
* Additionally, history suggests that ignoring a lack of essential infrastructure in a given community is a poor strategy for long term success. But when it comes to the specific LUS Fiber approach, I believe Titch correctly characterizes it as high risk. I would add high reward. There are low-risk, modest reward propositions, but Lafayette understood it was making a bold proposition. It had made the same choice in 1896 for electricity and that had served it well for more than a century.

Woah there, cowboy! Let's be clear here. Few, if any have suggested that all municipalities should offer services. We have always argued that local governments should have the freedom to get involved if they so choose. One of the interesting schisms among ISPs is that a number of the most popular, small ISPs are supportive of community networks. They recognize that the big cable and telephone companies aren't meeting local needs, creating the motivation for municipal investments. However, those same ISPs also correctly recognize that communities that are well served have little motivation to invest in competitive fiber infrastructure. Local governments have plenty of responsibilities without anyone trying to pile more on. But communities that have invested in this infrastructure have almost always exhausted other avenues first and felt backed in a corner.

If there were hundreds that had struggled financially or failed outright, Titch should be able to list more than the few examples that are always trotted out.

No one supporting community networks claims that the many bankruptcies among private providers (Adelphia, Charter, FairPoint, among many others) proves that the private sector is incapable of operating networks.

To the contrary – we regularly discuss how difficult it is and even specifically advise communities that if they are just looking to diversify revenue sources, this is a bad reason to invest in a network.

It absolutely leans toward natural monopoly. There are significant barriers to entry. To compete against an entrenched duopoly, a new entrant has to make large capital investments. The incumbents have often already amortized the majority of these costs, allowing them to lower their prices, sometimes below cost, to deny the new entrant subscribers. This is particularly true of the big providers that cross-subsidize from non-competitive areas into competitive areas.

broadband system to date, LUS Fiber, the fiber optic network operated by Lafayette Utilities System in Lafayette, Louisiana.

Crawford devotes several pages to Lafayette in her book, and ILSR featured it prominently in its own research paper published in 2012. According to these accounts, LUS Fiber is a success. But is it really?

This brief will examine LUS Fiber's history, performance and future, in the hope of painting a more balanced and accurate picture of municipal broadband's risks and challenges than is provided by the media and consultants. This brief hopes to offer an additional resource to mayors, city councils and managers of municipal utilities who are assessing whether municipal broadband is the correct path for their communities.

A curious claim – perhaps Titch is unaware that Chattanooga's EPB has more customers than Lafayette has total households. Nonetheless, Lafayette is a good choice for close examination because it did not receive any grants as did Chattanooga (which received a grant only after committing to the build – the grant was designed to speed it up and offer lessons for others curious about the smart grid). Lafayette's experience is closer to the average community than Chattanooga.

It is easy to cast those who disagree with you as just the liberal media or self-interested consultants. But Susan Crawford is a professor and the Institute for Local Self-Reliance does not consult on municipal networks.

And our in-depth response is motivated because ***we believe any community thinking about building these networks should be prepared to answer hard questions*** but also be prepared to be dissected by those paid by the cable industry to delegitimize possible sources of competition – whether from municipal networks or even from firms like Google.

The Push for Muni Broadband

Municipal supply of telecommunications is not new. In the early 20th century, many rural towns set up municipally owned companies or cooperatives to offer telephone service. In the 1960s and 70s, some towns tried the model with cable TV. These operations served their purpose, especially in more remote areas, but by the close of the century, most of these relatively tiny municipal operations had been acquired by commercial cable companies who were able to invest in system upgrades, such as HDTV and faster Internet speeds, as well as compete better against satellite TV services.

As the Internet took off in the 1990s, some cities tried to apply the municipal supply model to Internet access. At first, these were in rural areas without broadband service. But as interest in municipal broadband continued to grow, larger cities with residents already served by phone and cable companies began to mull over the idea of building broadband systems of their own. Policy advocates suggested cities invest in new network platforms, particularly fiber-to-the-home (FTTH) or large-scale WiFi wireless. Advocates make four main arguments for municipal broadband:

1. Municipal broadband fits the tradition of municipal utilities.

Broadband is a capital-intensive, facilities-based service. In other words, it is a "utility." As such it should be possible for a city government to deliver broadband in much the same way that cities have run gas, electric, water and telephone utilities.

2. Municipal broadband creates true competition.

Cable and telephone companies form a coercive duopoly that can dictate prices, technologies and service packages—and get away with poor customer service. Municipal broadband systems, by contrast, can offer lower prices and consumer-friendly choices, such as unbundled Internet and a la carte cable programming.

3. Municipal broadband addresses unmet needs.

Commercial service providers are not interested in serving entire communities—only middle- to upper-income households with enough disposable income to generate average monthly revenues of

Titch recognizes that when it comes purely to competence, local governments are able to handle these technologies. This leaves the argument against municipal networks purely that they cannot succeed when faced with competition. However, the record shows that municipal networks have succeeded in competitive environments as well.

I am curious in the numbers and haven't seen an analysis of how many started vs how many privatized. A fair number of municipal cable systems started as privately owned but failed and were then purchased or acquired by the local government. Regardless, probably at least 100 communities owned a cable system in the late 90's.

Unevenly. Some towns had companies that upgraded while others had to wait for many years and still may be waiting.

Odd choice of words. Glasgow, Kentucky, seems to be the first town in the country to have universal broadband access by adapting its municipal cable system. At any rate, some of the places that already had systems upgraded those systems to offer broadband. Others simply built new networks, starting in areas with no access but ultimately also in areas that already had some level of slow, unreliable, or overpriced access.

It is worth noting that along with some small companies, municipalities pioneered FTTH networks. Communities like Chelan and Grant Public Utility Districts in Washington; Kutztown, Pennsylvania; and Bristol, Virginia were among the first to build these networks, especially citywide.

Not really sure why Titch includes a la carte cable programming. He should be aware that the structure of cable contracts do not allow such an arrangement and are unlikely to allow those changes absent changes in law. I don't know of a single community that thought they could do that by building their own network. But I would expect anyone who believes in the power of competitive markets would have more positive things to say about increasing competition.

$100 to $200. Municipal broadband would offer high-speed Internet to low-income households, enabling them to access the educational, commercial and social benefits of the digital economy. For example, during a debate over Philadelphia's proposed citywide municipal WiFi network, Dianah Neff, the city's chief information officer, said she was convinced that local private providers were not deploying broadband services fast enough to poor or underserved areas of Philadelphia.[1]

Watch throughout these kinds of reports as critics like Titch conflate the citywide Wi-Fi approach with FTTH plans. The citywide Wi-Fi bubble of 2004-7 struck both local governments and private firms. In many cases, critics have used the failure of private firms like MetroFi and Earthlink to smear municipal networks, though they were privately owned and operated. In any event, the primary challenge with citywide Wi-Fi was that the technology was not up to the challenge and business plans were too optimistic. LUS considered citywide wireless early on, but chose not to invest in it following due diligence.

4. Municipal broadband boosts local economic development.

The first motivation for most communities is economic development. Sometimes it is both the first and second motivation. They hear from businesses that say the existing providers aren't meeting needs or they hear from site selectors that their community cannot make the list due to a lack of high quality telecommunications on reasonable terms.

Municipal broadband allows communities to take charge of their local broadband development. It allows them to control the timetables for commercial deployment. Investment in platforms that commercial providers have eschewed, such as FTTH, offer a way to attract businesses and employers to the area and for high-tech entrepreneurs to remain local. For example, here's how the Institute for Local Self-Reliance described the municipal broadband system operated by Chattanooga's Electric Power Board (EPB):

> *EPB caters to the whole community, not just a few big employers. This is a key point for communities who aren't likely to attract companies the size of Volkswagen. EPB Fiber Optics allows small [local online] startups like Retickr to compete globally at affordable rates, and allows individuals to pursue dreams of starting sole proprietorships from their homes.*[2]

This is where my blood pressure really goes up. If you are going to criticize these networks, you should be able to differentiate between a cable network (what Tacoma has) and a wireless network (what Tacoma does not have). This is just one of many instances where Titch gets basic facts wrong, demonstrating his ignorance of the subject.

Apparently persuaded by these arguments, the governments of a number of small- to medium-sized cities launched municipal network overbuilds that would compete head-to-head with local incumbent service providers. These included Tacoma, Washington (wireless); Ashland Oregon (FTTH); Lebanon, Ohio (coaxial cable); Kutztown, Pennsylvania (FTTH), and Provo, Utah (FTTH).

Again, how can we put faith in your criticism if you are unaware of basic facts? Ashland, Oregon is a hybrid fiber coax network – cable. It has more fiber than most cable plants and it is called the Ashland Fiber Network but it is a cable system.

The biggest of these projects was launched in 2007 in Lafayette, Louisiana. Three years earlier, Lafayette Utilities System (LUS), the municipal utility company in Lafayette, a Gulf Coast city of 121,000 located about 50 miles west of Baton Rouge, proposed a $110 million plan to build a broadband FTTH network. The sheer scale of the project attracted and galvanized consumer activists and progressive organizations both in Lafayette and nationwide. LUS was buoyed by a feasibility report it had commissioned from CCG Consulting, a specialist in municipal broadband planning, which predicted that LUS Fiber would break even by its fifth year of operation and could ultimately win 50% of the cable and telephone market in Lafayette. Some city council members questioned the risk posed by the high cost of the plan, and asked whether Lafayette needed a municipal overbuild. Yet the popularity of the idea was undeniable. The plan even sparked the creation of a community organization, Lafayette Coming Together, which campaigned energetically for the measure. After considerable debate, LUS carried the day. In a special election, the municipal broadband bond issue won 62% of the vote.

Any community planning a major investment like this should be asking hard questions. Local governments typically consider these issues over many months or even years as they go through the steps necessary to build a network.

Here Titch admits that they engaged in "considerable debate" but elsewhere repeatedly claims that they knew nothing about the market they were entering. These claims are hard to reconcile. The record is clear: they studied their plan from every angle.

LUS Fiber's Financial Situation

Terry Huval, director of Lafayette Utilities System, continues to state in public forums that LUS Fiber is on sound financial footing and will ultimately break even. In a city council budget meeting in August 2013—as this report was going to press—Huval said LUS Fiber would be fully self-supporting by 2016.[3] Earlier in the year, in response to a series of email questions, Mr. Huval wrote:

> *Beginning in February 2012 (only three years after serving its first customer) LUS Fiber achieved a "cash positive" position. Reaching a "cash positive" status means LUS Fiber is earning enough telecom revenues to pay all of its operations and maintenance costs, in addition to making its annual bond payments—a significant milestone in the growth of a new business. The system is showing consistent net growth in customers and its revenue growth increasingly outpaces its operating costs. So…the bottom line is the system is already successful and is becoming more and more successful every day.*[4]

But the published accounts paint a different picture. LUS Fiber had a net loss before contributions and transfers of $11.9 million for the fiscal year ending October 31, 2012. It had a net deficit of $40.7 million, largely driven by the accrual of interest payable on its $140.7 million in loan liabilities. Both come in spite of operating revenues of $24 million, which represented a 41% increase over the $17 million revenues for fiscal year 2011. Expenses, however, continue to grow. Operating and non-operating expenses in 2012 were a total of $35.9 million, up from $33.5 million in 2011 and $20.4 million in 2010. The 2012 results continue a trend at LUS Fiber that dates back to launch. Revenues do not seem to be able to keep up with tenacious growth in costs (see Table 1). As the losses compound, so do the deficits (see Table 2). Selected data appears in the tables below. A complete statement of audited annual results compared to the original plan can be found in Appendix A.

While losses can be expected in the first years of operation, the persistent losses experienced by LUS are becoming problematic. The FTTH Feasibility Study Report prepared for Lafayette by CCG Consulting Inc. in 2004 did a fairly accurate job at predicting costs. Net expenses for Year 4 (2010) were forecast to be $24.9 million, a figure LUS Fiber actually beat. The plan's projection for Year 6 (corresponding to 2012) was $34 million; LUS's actual expenses for the year were close, at $36 million. The plan's projection for Year 5 (2011) was $29.5 million. LUS Fiber actual number was only $4 million higher. Spending also was close to plan in 2010.

Key Point

LUS Fiber is in a much stronger financial position than Titch suggests. Understanding why requires a short explanation on depreciation.

Depreciation is the decline in value of a physical asset over time due to wear and tear. It is generally measured by dividing the original cost of an asset by the number of years of its useful life (as reflected in IRS schedules). Accounting rules require entities to treat depreciation as a cost, on the assumption the asset holder will have to earn enough revenue to pay for replacing the asset with a similar one. In fact, the cost of fiber optic electronics has been falling at the same time that their capabilities have been improving. As a result, the depreciation costs on LUS's books are substantially higher than the amounts that LUS will actually need to replace its electronics. So, LUS has been a lot more successful than even its accounting records may suggest.

This is another example of Titch making an effort to confuse readers. Is he disputing that LUS is cash positive? Elsewhere he praises LUS for its transparency – If he had found anything incriminating, he undoubtedly should cite it rather than throw numbers around without context.

Increased expenses are an unfortunate side effect of being successful in the market. Each new customer has a cost to connect and associated costs to supply those services. A growing enterprise will see growth of both expenses and revenues.

Now Titch is going back nearly 10 years to an old business plan that was disrupted significantly by multiple lawsuits, a forced referendum, and other dirty tricks from the incumbents to disrupt LUS.

These plans change significantly, especially over 10 years. The network should be judged based on whether it is meeting community needs today, not how it measures up against projections a decade ago.

Table 1: LUS Fiber Plan vs. Actual Performance 2007–2012 ($000s)

Year		Plan	Actual
2012	Operating Revenues	33,970	24,041
	Net Expenses	33,968	35,953
	Surplus/Deficit from Operations	6,584	6,984
	Net Income/Loss	2	-11,912
2011	Operating Revenues	29,124	17,011
	Net Expenses	29,505	33,530
	Surplus/Deficit from Operations	5,861	2,256
	Net Income (Loss)	-381	-16,519
2010	Operating Revenues	20,011	9,415
	Net Expenses	24,880	20,460
	Surplus/Deficit from Operations	53	-462
	Net Income/Loss	-4,869	-11,045
2009	Operating Revenues	10,361	4,061
	Net Expenses	15,295	9,427
	Surplus/Deficit from Operations	1,545	-3,018
	Net Income/Loss	-4,934	-5,366
2008	Operating Revenues	2,173	2,120
	Net Expenses	9,262	4,632
	Surplus/Deficit from Operations	-3,138	-1,837
	Net Income/Loss	-7,809	-2,511
2007	Operating Revenues	1,048	0
	Net Expenses	2,406	-1,649
	Surplus/Deficit from Operations	-893	-32
	Net Income/Loss	-1,358	1,649

Sources: Lafayette Consolidated Government Audit Reports 2007–12 and CCG Consulting Feasibility Study for LUS Fiber

Table 2: LUS Fiber Deficit Growth 2007–2012 ($000s)

	2007	2008	2009	2010	2011	2012
Total Assets	120,323	135,761	131,557	126,900	111,934	112,475
Total Liabilities	118,674	136,624	132,837	139,225	140,779	153,189
Net Surplus/Deficit	1,649	-863	-1,280	-12,325	-28,845	-40,714

Sources: Lafayette Consolidated Government Audit Reports 2007–12

Revenues were a different story. LUS Fiber's revenues were 53% below its goal in 2010 (see Table 2). In 2011, they were 41.6% below its goal. Its 2012 revenues of $24 million were 29% below the plan's stated goal of $34 million. And although the gap between planned revenues and reality has been shrinking in percentage terms, in cash terms the variance is getting bigger: LUS Fiber fell

By what measure are revenues not seeming to keep up with the growth in costs? From 2010-2012, expenses (rounded) are respectively in millions in $20.5, $33.5, and $36. Revenues are $9.5, $17, and $24. Revenues are growing faster than expenses.

Business plans are made to be modified as conditions change. For example, when Lafayette was the first Cox territory in the country to receive the DOCSIS 3 upgrade (a rather significant benefit of creating real competition), it had to change projections because Cox could then advertise faster Internet connections than the Lafayette business plan likely projected. Even with the Cox upgrade, LUS Fiber offers faster connections and more competitive pricing.

The shortfall is reflected in the bottom line. This is where variance becomes truly troubling. The CCG business plan projected a slight surplus of $2,000—virtually break-even—for Year 6 (2012). The actual loss, as noted above, was $11.9 million. The plan has also called for net losses to peak in Year 3, at $4.9 million, then level off and move into surplus. In reality, Year 3 was when LUS Fiber's losses were just getting started. LUS Fiber's losses doubled in Year 4 (2010), and increased 50% in Year 5 (2011) before dropping back to 2010 levels.

Revenue shortfalls have induced more borrowing. Before groundbreaking, LUS Fiber realized it would need the full $125 million authorized in the bond issue, not the $110 million it had originally aimed for. In 2008, LUS Fiber needed a $55 million loan from its parent, LUS, to complete construction. Most of that loan has been repaid, according to Huval. Nonetheless, LUS Fiber felt its financial situation was tenuous enough that in 2009 it applied for two grants under the American Recovery and Reinvestment Act, commonly known as the Stimulus, but neither was approved.[5]

This pattern of costs accelerating relative to revenues seems to be endemic to municipal broadband. Every municipal broadband system, whether using traditional coaxial cable, wireless or fiber as base infrastructure, has run into this problem.

By way of comparison, we can graph LUS Fiber's performance against two earlier attempts to implement municipal broadband, iProvo in Provo, Utah and Alameda Power and Telecom (APT) in Alameda, California. iProvo's revenues leveled off in its fourth year of operation (2004) at $945 million, and actually dropped in Year 5. Expenses, however, continued to rise, reaching $2.36 million in 2004 and $2.5 million in 2005 (See Fig. 1).[6] APT's operating revenues also were leveling off by its fifth year, while costs continued to escalate (see Fig. 2).[7] Lafayette, readers might note, is performing better in terms of revenues (see Fig. 3), which have been strong enough to provide a positive cash flow, as Huval has touted. Yet cash flow alone misinterprets the true financial situation. Because it omits the cost of non-operating expenses, particularly interest, depreciation and amortization, it is more correctly read as a short-term snapshot, and less as an indicator of long-term financial performance.

In testimony in May 2011 to the Lafayette City Council, auditor Burton Kolder summed up the precarious state of LUS Fiber's finances.

> *The bottom line, operations of this fund was at $11,045,000 loss last year and it's now $16,519,000 for the current year. So, looking at it from a cash flow standpoint, obviously the depreciation and amortization would be added back, but you could see that you would still have a deficiency even by adding that back, of approximately $6 million. Just to put it in perspective, on a daily basis, that $16 million loss equates to a loss of $45,000 a day. Last year, the loss was $30,261 per day. That's including all costs and also depreciation.*[8]

Rather than focusing on whether LUS Fiber is paying all of its bills (which it is), Titch continues to compare the network against a business plan that predated years of failed lawsuits and harassment. While tying LUS up in court, its competitors upgraded their systems and locked customers into long-term contracts. As those contracts have expired, the LUS revenues have improved.

This may be a nice turn of phrase, but ignores reality. The losses started in the first year (of course) then peaked in the fourth year and dropped afterward.

If LUS realized it would need to borrow more before the groundbreaking, then it could not have been a result of a revenue shortfall. Similarly, as the network did not begin connecting subscribers until 2009, any loan from its parent could not have been due to a revenue shortfall. Titch tells us nothing about why that loan was necessary and whether it should concern us.

Once again, if LUS Fiber only began connecting subscribers in 2009, there is almost certainly no connection between applying for stimulus dollars in 2009 and revenue shortfalls. More likely: LUS saw an opportunity to leverage its network and a loan/grant award to offer more services or lower costs, likely for low income populations. The second grant application was to enhance the LUS smart meter system, not relating to broadband stimulus.

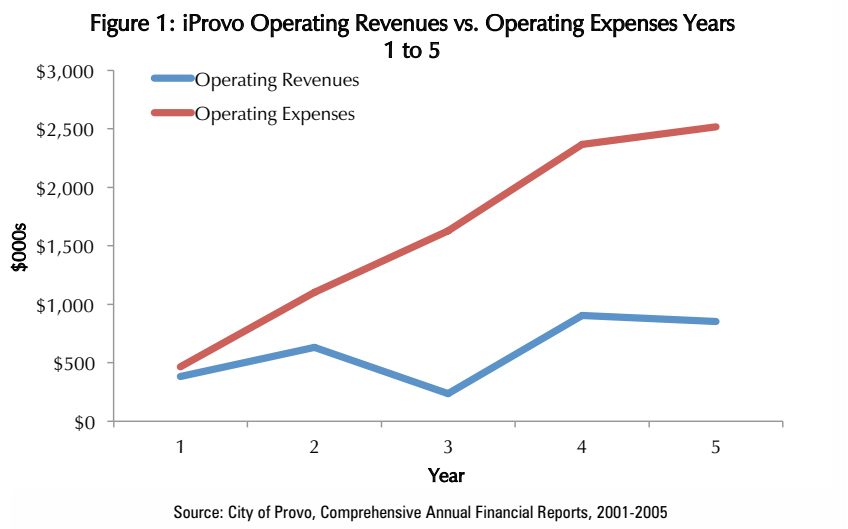
Titch has not demonstrated that problem even in this example. Instead, he has cherry picked data from startup years and then extrapolated, a classic technique for misinformation. The cities of Thomasville, Georgia, and Spanish Fork, Utah may be surprised that their annual municipal telecom surpluses of over $1 million are not real, according to Titch.

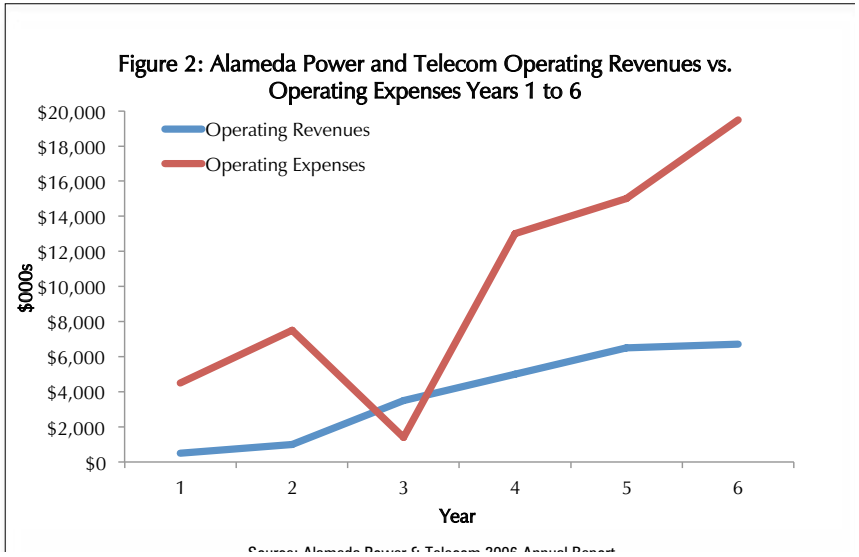
iProvo used an entirely different business model because state law forced it to wholesale services. If Titch is unaware of the difference between wholesale business models and retail, no conclusion of his should be trusted.

Indeed, Comcast aggressively ran Alameda out of the market – a sign of how many advantages the big cable companies have.

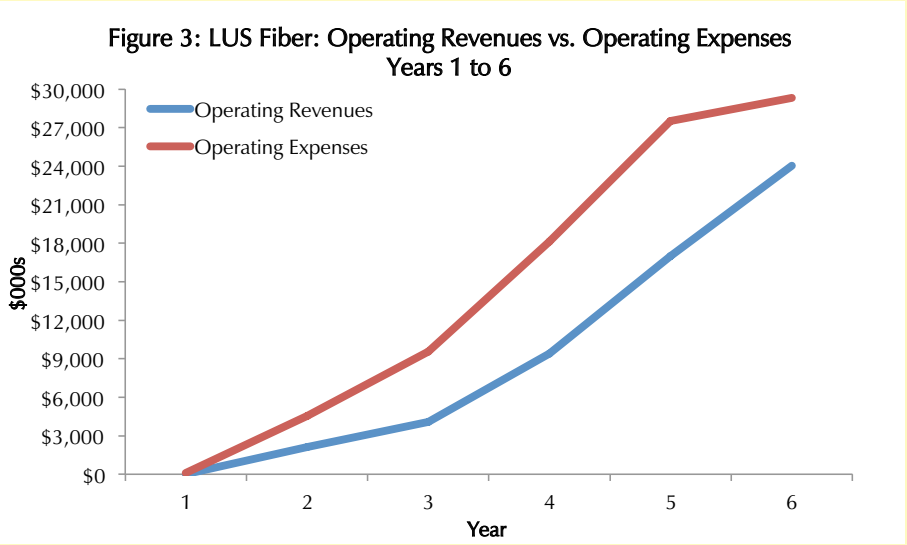
It is a snapshot, but one that is widely used by the financial industry to gauge the health of startup operations. Several years may seem a long time to be starting up, but that is the norm in building a citywide fiber system.

Titch chose to include only Kolder's statements on past performance. Kolder's interpretation is much more positive and explained in an interview from May, 2013 - http://www.katc.com/news/lus-cpa-explains-fiber-audit/

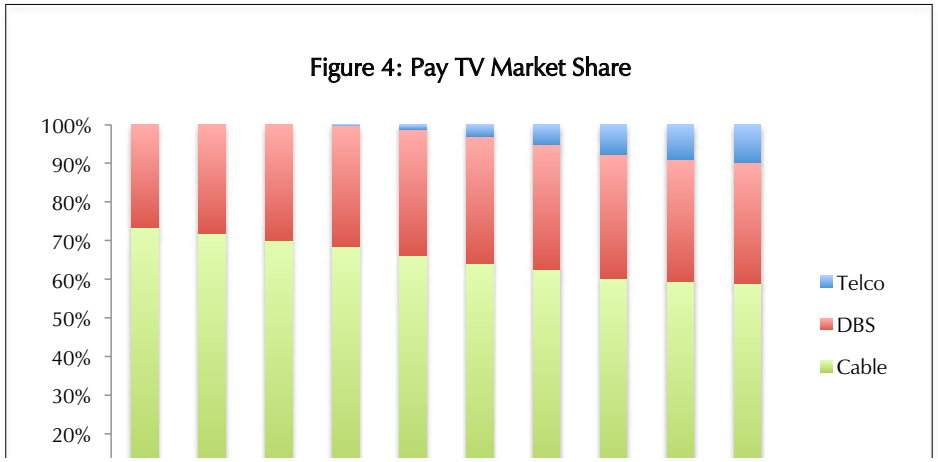




Neither iProvo (with an entirely different model of wholesale-only) or Alameda (an old cable network in California) are useful in understanding Lafayette or community owned networks more generally.



Source: Lafayette Consolidated Government Annual Report



This graph shows the opposite of what Titch claims. Lafayette had a big growth in expenses early but that has leveled off, whereas revenues have continued strong growth.

Broadband Is Not a Utility

Most of LUS Fiber's financial difficulties are rooted in the fact that it is trying to gain traction in a market far more competitive than its business plan acknowledged. When LUS wired the city for electricity a century ago, it was the first and only electric company in the area. Every sign-up was a first-time customer. It was a classic utility: supplying essentially one good to a captive audience.

Utilities typically served only one purpose—as was the case with early forms of telecommunications, e.g., telegraph, telephone. But that has not been the case even for copper wires for several decades (at least since the introduction of the telex) and certainly is not true for broadband. Unlike water and electricity, which continue to have a relatively small number of uses and demand for which seems to grow at relatively slow and predictable rates, the uses to which broadband may be put are many and rapidly increasing. At base, broadband demand stems from individuals and companies seeking to share information—and demand for such information-sharing seems to rise in proportion to the available means of sharing it. In the early 1990s, 19.2 kb/s was useful for exchanging text documents. By the late 1990s, bandwidth was good enough to handle color photos and graphics. Today, domestic consumers demand connections that can stream three-hour movies in high-definition.

Service providers have responded by developing increasingly effective and increasingly high bandwidth services for both fixed line and wireless connections. Technology cycles are reflected in the capital expenditures the private sector is making. Between 2004 and 2011, Verizon invested $130 billion—an average of $16 billion a year—in broadband infrastructure (predominately FTTH and wireless). For AT&T those numbers were $117 billion and $14.6 billion. For Comcast, the numbers were $39 billion and $4.8 billion.[9]

Almost every market in the U.S. is served by at least one cable TV company and one phone company. Satellite service, by its nature, is available everywhere. Wireless service, while not as high-bandwidth, can support reasonably fast Internet connections, and its robustness and speed are improving as 4th Generation (4G) networks are deployed.

The rapid increases in demand for services and consequent significant ongoing investment in infrastructure upgrades, not to mention the existence of competition, suggest that broadband is far from being a "utility." This not only contradicts one of the key premises of the proponents of municipal broadband, it specifically undermines LUS Fiber's business plan, which was predicated on the utility model. Although CCG Consulting's feasibility study identified two extant

Titch has not demonstrated any financial difficulties, only that it has not achieved the predictions of the original business plan. The network is paying its bills and has not missed any debt payments.

Titch claims the market is much more competitive than it actually is. The LUS Fiber plan correctly recognized that its primary competition would come from the telephone company and cable company, which it has.

At that time, there was no monopoly on provisioning electricity. It built the grid at a time when other companies could have come in and competed with it. It was not the safe investment Titch claims. Just like building municipal fiber today, it was seen as a necessary, calculated risk. At that time, some did oppose it but were ultimately proved wrong for doing so.

One could claim electricity serves one purpose: moving electrons, just as Internet access means moving bits. But if Titch were trying to protect the electric companies, he would claim that provisioning electricity is very complicated and could be used for light services or motors or any number of complicated services.

This is a difference of technological maturity. Electricity demand grew rapidly for decades before settling down. We expect to see a similar trend with Internet access speeds.

Titch ignores the role local governments played in pioneering FTTH networks. The big cable and telephone companies lag behind both public and private innovators, which tend to be small entities.

This is a familiar refrain – throwing out big numbers without any context. It doesn't matter how much they are spending if they are not meeting community needs. If they spent 10% less, would Titch not be bragging about those numbers?

First, satellite is not broadband because of its inevitable latency. It does not allow subscribers to use common applications like Skype effectively. Plus, households may be unable to access satellite for a variety of reasons from topology to restrictions on dish placement.

Attempting to use a 4G connection as a replacement to DSL or cable is cost prohibitive due to the bandwidth caps on service. This is why very few households have replaced their DSL or cable with a 4G connection.

Few observers doubt that broadband has at least some qualities of being a utility, despite Titch's attempt to spin this claim.

As noted before, all the evidence shows that LUS Fiber was well aware it would have to compete for customers that would have a choice in providers, which Titch acknowledges in the next sentence.

competitors—Cox and BellSouth (now AT&T)—in LUS Fiber's proposed service area, it did not mention the wireless providers serving Lafayette (at least four at the time), nor the two satellite TV companies providing multichannel TV service. Yet the CCG feasibility plan forecast that LUS Fiber could attain 50% market penetration in telephone and cable TV.[10]

Moreover, at the time the report was prepared, investment analysts were warning that satellite service posed the biggest threat to cable company market share. One March 2003 study found satellite TV penetration in U.S. households was 20.9%, up from 19.2% a year earlier.[11] At the same time, research was predicting that households with DBS service would increase from approximately 20.7 million at the end of 2003 to 27.1 million by 2007.[12]

These numbers have been borne out. As Fig. 4 shows, satellite's share in the pay TV market had grown to 31.3% by the fourth quarter of 2012 from 28.1% at the end of 2004. Telephone companies have further eroded cable TV market share. Overall, cable's share of the pay TV market was 58.8% fourth quarter 2012.

More recently, Internet Protocol television (IPTV) services have begun to cut into cable revenues further. IPTV, in which television programming is delivered directly to viewers over the Internet via services like Netflix, Hulu, YouTube and AppleTV, is becoming increasingly popular. While they do require a broadband Internet connection, their services, which often come at a fee, siphon revenues from the cable TV's pay-per-view and video-on-demand offerings. One study predicts IPTV will account for 7.3% of TV households by 2016.[13]

Lastly, even though LUS Fiber banked on the shift to Voice over Internet Protocol (VoIP) platforms that 10 years ago were gutting phone companies' traditional landline revenue, it failed to foresee that the VoIP market would be dominated by third parties such as Skype. Nor did it foresee the outright "cord-cutting" resulting from wireless services. So, unsurprisingly, LUS Fiber's own VoIP telephone services have not generated anywhere near the revenue expected in the feasibility study, which projected LUS Fiber would win 30% of the telephone market.

Moreover, the fact is that when LUS Fiber launched in 2007, it was actually entering a mature market. Multichannel TV—one of the three service sectors LUS Fiber had chosen to enter—had reached between 80 and 85% penetration nationwide. Likewise, telephone service—a second sector—was being overtaken by wireless alternatives, which by 2007 had also reached about 85% penetration. While total broadband household penetration had reached about 50% nationwide by 2007, a more significant number is that, among households that had PCs, broadband penetration had reached 65% and was expect to reach 70% by 2008.

Lafayette's population and per capita income profile is above national averages, so it is reasonable to assume that cable and wireless penetration were also at or above the national average. This means that LUS Fiber's least costly sales—to households purchasing broadband for the first time—represented a far smaller portion of the total market than was the case when LUS was first

If Titch can provide any evidence that a significant number of people in Lafayette have chosen to forego any home or business wired telecommunications service in favor of 4G wireless providers, we are interested to see it.

For those who are unfamiliar, both Bristol, Virginia, and Cedar Falls, Iowa, faced claims in the past that they would not attain high take rates for these services. Both have 2/3 or more of the market now. Lafayette already has 33% and continues to grow. 50% is not unreasonable though it will certainly require a lot of effort given how willing Cox has been to lower prices in response to real competition. Something Titch never wrestles with is why supposedly competitive markets change pricing so rapidly after a municipal fiber network is built. If they are just one more of many competitors, we would not expect to see such a significant shift.

These are national statistics. It may be that Cajuns like local cultural programming more than the national average. Perhaps this makes a difference and perhaps the effect is too small.

As the LUS Fiber FTTH network is much better suited to delivering faster, more reliable Internet speeds, this trend will benefit LUS Fiber over its rival, Cox.

Business plans change and adapt. Anyone actually familiar with how businesses work should be aware of this basic fact.

It may be mature, but the cable and telephone companies are consistently among the most hated companies on the planet. People need these services, but often hate the companies they have to use to get them.

Actually, the least costly sales would be to people who are early adopters – who want the best Internet access available. They don't spent hours with customer service representatives seeking help for tech problems. Again, Titch appears more familiar with economics talking points than the actual telecom business.

installing electricity. Switching other customers from incumbents would turn out to be far more costly.[14]

Fierce and established competition was not the only problem. When LUS was being proposed, the speed of fiber connections was touted as a winning advantage. Even today, proponents of municipal broadband center their arguments on fiber's bandwidth capabilities. True, fiber has the capability to deliver higher speeds than coaxial cable and wireless, and LUS Fiber did have an advantage in speeds, with a top offering of 100 Mb/s, largely aimed at businesses. But Cox surpassed this bandwidth on download in February this year. For most consumers, as long as fiber-like download speeds can be delivered, the delivery mechanism likely does not matter. (Few domestic consumers require upload speeds to be as high as download speeds.)[15]

Having assumed in its business plan that it was going to have to beat back demand, LUS Fiber found that it cost up to $200 to acquire a new customer.[16] (These costs come in promotion, advertising, discounts, installation, set-top box leases and other ancillary costs.) That makes customer retention almost as important as acquisition. For a service provider, it's a net loss if a subscriber drops service before the cost of acquisition is recouped. That's why a high "churn" rate can be devastating financially. Unsurprisingly, service providers are likely to make aggressive counter-offers to customers who call to drop service. The cost of the extra discount trumps the costs of replacing the customer outright. Once LUS Fiber launched, Cox responded aggressively by cutting prices and offering new triple-play packages. According to the ILSR report on Lafayette's municipal broadband, if a Cox subscriber threatened to switch, Cox would counter-offer with a more attractive offer, such as extending a discount or adding a service tier.[17]

For competitive reasons, LUS Fiber, like all broadband providers, will not disclose its churn rate. There is no doubt it understands its significance; the terms of the triple-play packages LUS offered until late last year required customers to pay early termination fees (ETF) of $150 to $300 if they drop service before the contract period elapses. This is ironic given that private service provider ETFs have long been attacked as unfair by supporters of public broadband. LUS Fiber made no promises at the outset, but many municipal broadband supporters claim that public broadband—because it is not beholden to shareowners and profits—will not need to rely on ETFs. The realities of the high-cost customer acquisition prove otherwise.

The only real similarity between broadband and classic utilities is that the underlying infrastructure is expensive to build. Even here, however, superficial similarities mask a crucial difference. Utilities require high investment up front, low investment thereafter combined with lengthy amortization of infrastructure. As LUS's experience demonstrates, broadband requires not only high investment up front but ongoing significant investment thereafter (see Table 1).

Unlike water and power, broadband technology cycles are rapid and require wholesale network upgrades and changeouts. To be sure, water and power systems are repaired and upgraded regularly, but they are not replaced by entirely new technology platforms every decade. This makes for a more capital-intensive industry. Each time, old network technology had to be replaced.

Since Titch published his paper, LUS Fiber has not only boosted speeds but also lowered prices for the top tier, putting it firmly in the lead, locally. However, it is a valid point that many people will be blinded by misleading ads from Cox and not understand that advertised download speeds are only part of the equation. Over time, however, word will spread that LUS Fiber offers a much better experience than Cox, whether because of better latency, faster upload speeds, or other factors.

The $200 figure comes from a Wall Street analyst based on industry averages in 2009, not Lafayette. But it is a good point that once you acquire a customer, keeping them is important.

A reminder of how Titch misunderstands how municipal networks are different from an absentee cable company. An absentee cable company cares only about how much money it can extract from a community. A municipal provider seeks to maximize and balance benefits. If LUS Fiber drives down the cost of Cox services to the community, that benefits the community because more money is available to be spent within the community.

Precisely. Because of LUS Fiber, millions of dollars have remained in the community rather than being sent to Cox HQ. This is one of many indirect benefits of community networks that accrue even to those who do not take service from it.

From anecdotal evidence, we believe muni networks typically have much lower levels of churn, often credited with superior customer service compared with competitors.

Community broadband supporters oppose gimmicky, non-transparent pricing (as should anyone who believes in effective markets). Early termination fees are sometimes justifiable and sometimes not.

A pretty significant barrier to market entry, Titch should concede. However, another similarity ignored by Titch is that broadband has become essential to nearly every industry and is only becoming more important.

Ask an electric utility if it has to spend significantly in ongoing investment. Or water utilities. They all do. Utilities Director Terry Huval, who is responsible for the electricity and water systems argues the ongoing investments for fiber are less than that of other utilities.

Here again, Titch confuses the timeline. Electricity already went through this before maturing. Broadband is now maturing. Electricity was a utility when it went through rapid technology cycles and when those cycles were slower.

Copper gave way to coax; coax is giving way to fiber. Between 1984 and 2012, wireless networks went from analog radio to its fourth generation of digital technology. That averages to a major network changeout every seven years.

The telecommunications industry, through its constant investment and development in new technology, has reached the point where it can support a range of broadband delivery mechanisms that possess a number of qualitative differences. Unlike water and electricity, which the utility controls at the front end, broadband providers are part of a supply chain. They facilitate the transmission and interaction of differentiated content and applications that have various degrees of value.

What's more, different platforms are constantly leapfrogging each other. Cellular service is superior to yesterday's wireline, copper-based dial tone. WiFi data is superior to cellular data, at least today. Tomorrow that might not be true. Then, new technologies like WiMax might mean more improvement. Competition, combined with rapid technology cycles, presents problems to any subsidy scheme, because at any moment, that subsidized platform, and all its associated sunk costs, can be circumvented.

The takeaway for cities considering municipal broadband is that they will not just be competing against a cable company and a weaker phone company DSL entrant. Municipal broadband operations will enter an unpredictable market that is under attack on several fronts—including wireless and satellite services. Meanwhile, many of the ancillary services offered by landline providers, such as telephony and television, are also subject to competition. Thus, while broadband revenues are increasing year to year, landline operators, of which municipalities will count themselves, will be fighting over decreasing market share. For competitive reasons, LUS Fiber does not disclose market share (neither do Cox or AT&T), but even if it reached its goal of 50% of the cable TV market share in Lafayette, because its original plan never accounted for competition from anything other than wireline broadband, its revenues would still be less than expected because a sizable percentage of the overall market will have been captured by satellite and IPTV.

To sum up, it is clear that despite what pundits such as Susan Crawford say, most local broadband markets are hugely competitive. Broadband is not a utility. In remote rural areas with lower penetration rates, municipal systems would likely have lower marketing costs, though the costs of cabling would be higher (but some communities may be willing to pay these higher costs). In medium and large cities, penetration rates are higher and municipalities will find themselves competing with incumbents who have already sunk significant resources into developing their customer base and who are willing to continue to make investments to improve their services and cut costs. Ultimately, competition from other landline operators as well as services using alternative delivery platforms (cellular, satellite) will make it a challenge for municipal broadband operations like LUS Fiber to achieve the revenue levels needed to meet infrastructure expenses.

Titch admits that copper is obsolete, as the AT&T's CEO has and the American Enterprise Institute finally admitted. If Titch is suggesting that fiber will soon be replaced by another medium, he is on the fringe.

Wireless dynamics are quite different from those of fiber networks because of the scarcity arising in part from how the FCC auctions exclusive licenses to slices of spectrum.

They move bits rather than moving electrons.

WiMax? This was such a throwback, I had to dig deeper. This is a paragraph lifted wholesale from a 2009 Titch paper, http://reason.org/files/ps376_broadband_investment.pdf. Back when he wrote that, we argued that only fools would think WiMax would overtake fiber. Now the claim borders on insanity. Regardless, this is just sloppy.

Local governments should be aware of the risk and challenges. In our experience, reputable consultants have been honest about the real challenges they will face.

Having revenues be less than expected is not a problem for a municipal utility unless it cannot pay its bills. Titch has not demonstrated any evidence that LUS is in danger of not paying its bills.

If the local broadband market were hugely competitive, then LUS Fiber taking over 30% of the market in just a few years is a sign of tremendous success.

We are to presume that "remote rural areas" are also "hugely competitive?" Community networks in more rural areas typically have greater take rates that compensate for higher per capita build costs.

Incumbents are markedly more interested in improving their services and cutting costs when faced with real competition. If that level of competition already existed, as Titch claims it does, we would not see a significant change in prices from a single new market entrant.

Does LUS Fiber Serve Unmet Needs?

Independent of the claim that broadband is a utility, proponents argue that municipal broadband is necessary to provide affordable high-speed Internet access to underserved communities, especially low-income households. Indeed, this is muni broadband's primary raison d'etre. But is it achieving it?

In the case of Lafayette, it could plausibly be argued that LUS Fiber's entrance into the market helped drive down prices—at least in the short term. Shortly after LUS entered the broadband market, Cox cut its rates and has kept them competitive with LUS ever since. (Paradoxically, Cox's aggressive response made it difficult for LUS Fiber to hold to its goal of keeping rates 20% lower. But that should not be held against LUS Fiber: if its presence drove Cox to lower its rates, then it can hardly be accused of failing to lower rates.)

But Cox has now introduced 150 Mb/s download service in regions of the country, including Lafayette, at prices substantially less than LUS Fiber's.[18] This suggests that any effect LUS Fiber had on prices was short term: in the medium to longer term, the much larger and more innovative private company was always going to improve its offering and drive down prices in order to remain competitive with other providers.

And what about those lower end customers? In its first years of operation, LUS Fiber attempted a $19.95 Internet only plan, but found that it could not afford the cost of running fiber to a residence that was going to generate revenue that low. It then offered a 3Mb/s connection at $19.95 for an introductory period, but that required purchase of a larger triple-play package. LUS ultimately ended the introductory offer in August 2012. The cheapest Internet-only rate LUS Fiber offered was $34.95 for a 15 Mb/s.

For whatever reason—most likely, the commercial realities discussed above—LUS Fiber has decided not to offer a low-cost high-speed Internet service to poor households. At the end of 2012, it stopped offering triple-play packages combining TV, phone and Internet. Instead, it has chosen to offer a range of services that are broadly comparable to those already offered by private providers, competing with them for market share.

LUS Fiber's rates are not significantly cheaper than Cox. While LUS offers a $19.95 per month Internet rate for 3 Mb/s up- and download, customers must purchase a cable TV or phone package to be eligible for the deal. LUS Fiber's lowest cable rate is $20.49 for a paltry 20 TV channels. Its lowest phone rate is $15.95 a line with long distance at 5 cents per minute.[19]

Again, Titch shows his ignorance of muni networks, particularly the difference between Wi-Fi and fiber. Most communities invest in fiber networks to attract or retain jobs. There are benefits for expanding access to low income areas but this is rarely the raison d' etre for fiber networks. Citywide Wi-Fi, both publicly and privately owned was once viewed as a strong tool for digital inclusion but the business models, both public and private, failed in this regard.

This is not a paradox. Local governments want to force monopolistic cable companies to cut their rates.

It is rare to read of the much larger companies being more innovative. The most innovative aspect of big cable companies is how they manage to increase rates every year.

LUS Fiber has not offered a $19.95 standalone Internet package. There is a $19.95 Internet package that requires the purchase of one additional service but Titch has his facts confused here. LUS is a wonderful case study in the challenges of building a world class network while also trying to offer affordable options to low income households. It is very difficult, particularly in the first five years of a project.

It has continued the original program of $19.95, which is far beyond what is available in most communities. Comparable private programs (Comcast Internet Essentials at $10/month) are typically restricted to only a minority of low income households that may then only connect a single device.

Titch accuses LUS of failing to achieve a goal he falsely claims was the primary reason for the network. Then he implicitly suggests LUS Fiber has somehow settled by offering services at a similar price point as Cox , which Titch previously conceded has lowered prices in response to LUS Fiber competition.

Comparing prices across triple play offerings is always difficult. However, there are some things that can be clearly compared. Lafayette's lowest cost single option for Internet is a 20 Mbps symmetrical connection for $33.95/month with no other purchase required. The lowest option from Cox is listed as "a paltry" (to use Titch terminology) 5 Mbps down / 1 Mbps up package at $48.99.

The next tier from Cox for Internet is $62.99 for 50/10 whereas Lafayette offers 80/80 for $54.95.

Titch himself shows that the lowest cost triple play from Lafayette is $56.39 compared to the lowest cost package from Cox of $90.97. He argues that the Cox package is superior for various reasons but there is no doubt that Lafayette is giving people more choices and lower cost options.

We have pulled together a chart of prices from July, 2014, on the following page to compare packages as best we can.

Comparison of Services

Cox			LUS		
Internet Only	**Mbps Down/Up**	**Price/mo. (Non-promo, 3+ mos.)**		**Mbps Down/Up**	**Price/mo.**
Essential	5/1.	48.99		3/3*	19.95*
Preferred	50/10	62.99		20/20	33.95
Premier	100/20	73.99		80/80	54.95
Ultimate	150/20	99.99		1000/1000	69.95/89.95/109.95 (with 3/2/1 services)
					* Only available with other services
Phone Only		**Price/mo.**			**Price/mo.**
Starter	Local	16.99	Basic Line	Local Calls + some features	9.95/line
Essential	Local + features and tools	23.99	Unlimited	Unlimited long distance	24.95*
Premier	Unlimited National + features and tools	29.99			
					*includes basic line charge
TV Only		**Price/mo. (Non-promo, 3+ mos.)**			**Price/mo.**
Economy	155+ Channels	38.99	Basic	20+ Channels	23.50
Advanced	220+	72.99	Expanded Basic	80+ channels	65.95
Preferred	280+	82.99	Digital Access	210+ channels	70.95
Premier	340+	94.99	Digital Plus	280+ channels	89.95
Ultimate	380+ and 3 premiums	154.99	Digital Hispanic Tier	Digital Plus + 9 Spanish channels	94.99
Triple Play Bundles	**What's in it**	**Price/mo. (Non-promo, 24+ mos.)**		**What's in it**	**Price/mo.**
Economy	155 channels NO HD. Mbps: 5down/1up. Local Calling	102.97	***	3/3 internet, Basic Line phone, Basic TV	61.39
Bronze	220 Channels. Mbps: 25/5. Local Calls + features	175.96	***	20/20 internet, Basic Line phone, Expanded Basic TV	117.14
Silver	220 Channels. Mbps: 50/10. Local Calls + features	202.95	***	80/80 internet, Unlimited phone, Digital Access TV	158.84
Gold	220 Channels. Mbps: 150/20. Unlimited nationwide calls	234.95	***	1/1 Gig internet, Unlimited phone, Digital Plus TV	192.84
			*** All LUS services are a la carte *** These are cumulative not "bundle" prices		
ADDITIONAL FEES		**Price/mo.**			**Price/mo.**
HD Receiver		8.50	HD Receiver		7.99
DVR Service	One unit/Whole home coverage	11.99/19.99	DVR Service	Whole home coverage	10.95

With no triple play, the cheapest assembly of services a would-be customer can put together, based on LUS Fiber's rates as of July 2013, would cost $56.39 a month.

Cox's a la carte rates are higher, but available without restrictions and offer better value. While its lowest priced cable package is $34.99 a month, it includes 180 basic cable TV channels. Its lowest Internet rate is $43.99, which offers 5 Mb/s downstream. Its most economical phone package is $15.95. This adds up to $90.97.

As of July 2013, however, Cox's lowest price triple-play package was being promoted at $99.99 for first 24 months, with a $142.97 rate thereafter. This package includes 230+ TV channels with HD, digital music, an on-demand service, 25 Mb/s Internet, and local phone service with features including call waiting, caller ID and busy line redial.[20]

By contrast, a comparable package from LUS Fiber, which would have to be assembled a la carte as it no longer offers triple-play packages, would cost $151.89 a month. This breaks out to:

- $80.99 for 280 digital cable channels, including HD channels, digital music channels and access to Video On Demand and Pay-Per-View;
- $34.95 for 15 Mb/s Internet (download & upload)
- $35.95 for local and long distance phone service plus a selection of calling features

More pricing data can be found in Appendix B. While there are differences in Internet speeds and cable channel packages, it is difficult to find much difference in pricing. LUS Fiber is falling short of delivering phone, cable and Internet at substantially less than established market prices.

When it comes to lowering the price for cable television, it is extremely difficult for a small network to lower prices below a large national company. However, as Titch has demonstrated and I noted above, Lafayette has clearly dramatically lowered the price for Internet access. It also appears to charge less for telephone service. And for those who have stuck with Cox, we don't have the numbers to prove it, but would be shocked if the average Cox customer in Lafayette is paying as much as the average Cox customer outside of Lafayette. Competition often results in better deals for subscribers, even if rate sheets remain unchanged. All of these benefits show the success of LUS Fiber.

Programming Acquisition Costs Are Significant

Another commercial reality faced by LUS Fiber is the cost of television programming acquisition—the money cable companies pay to broadcast and cable networks for the rights to carry their television shows. This remains the most volatile cost in the cable industry today and the biggest factor in rate increases.

At the time the LUS Fiber feasibility study was prepared, Cox Cable, Lafayette's incumbent, was reporting that its programming acquisition costs were increasing 11% annually. Charter Communications reported 8%. Comcast, the nation's largest company, and presumably with the size to negotiate the best terms, was reporting annual increases of 6.1%.[21]

Despite these real-world numbers, LUS Fiber put its faith in a plan that predicted just 4% annual growth in programming costs. Hence, when LUS Fiber began attributing rate increases to "unexpected" increases in programming costs, it should not have been so shocked.

Part of the cost problem was that LUS Fiber had banked on joining the National Cable Television Cooperative (NCTC), a coalition of small cable television companies that have banded together to use their collective buying power to negotiate lower prices with cable networks. LUS Fiber, however, was denied entry. The NCTC gave no reason, but supporters of municipal broadband suggest their membership was blocked by Cox and Charter Communications, who are also NCTC members. As a result, LUS Fiber had to negotiate individually with cable and broadcast networks, which likely led to higher costs than if they had been part of NCTC.[22]

But this excuse only goes so far. Anticipated programming costs in LUS Fiber's business plan were nonetheless set too low. If, as members of NCTC, Cox and Charter were seeing annual increases of 11 and 8%, what made LUS Fiber believe it could expect 4%? It would have faced higher-than-expected costs one way or another.

The takeaway is that municipal broadband consultants and enthusiasts routinely play down the cost of programming acquisition. These costs are the most difficult for cable and satellite companies to control. Programming acquisition costs are behind the occasional brinksmanship that occurs in the industry, such as when Dish Network pulled AMC Networks from its channel line-up, and when NFL Networks protested over the decision by a number of cable companies to place the channel in a higher-priced tier.

Municipalities ignore this inflation at their peril. Ashland Fiber Networks, the municipal broadband network in Ashland, Oregon, also underestimated its programming costs. To make up these costs, it had to place popular channels ESPN, FX and TNT into a higher-priced tier, competitively hurting itself against its cable, satellite and DSL competitors, which kept them in their expanded basic plans.[23]

No other explanation has been offered as to why LUS Fiber was temporarily prevented from joining the cooperative used by many municipal and private cable operators. At the time Lafayette was prevented from joining, both Wilson and Chattanooga gained entry; the only significant different between them and Lafayette is that they do not compete with Cox.

Though we have seen little evidence that consultants downplay the continuing challenge of being a cable television provider, Titch is certainly correct that local governments should understand the extreme challenges and how the market is tilted dramatically in favor of large incumbent providers that often have ownership interests in the channels that are driving cost increases.

However, providers like Lafayette and others like Wilson and Chattanooga have been very successful at both providing a high quality video product while also investing in the key infrastructure they want to provide: next-generation Internet access.

Community Economic Development

So, if broadband is not a utility and municipal broadband is not offering a special service to disadvantaged communities, how can its status as a non-commercial enterprise run by local government be justified? Does muni broadband deliver additional economic benefits to the community that justify its taxpayer support?

Just a reminder that none of these assertions have been demonstrated by Titch. In fact, he has often shown the opposite. Additionally, LUS Fiber is most certainly engaged in commerce though it does not make a profit. The term "non-commercial" is odd in this context.

To date, LUS has not offered any objective yardstick against which any community economic benefits could be evaluated. So, we are left to ponder what those benefits might be.

One possibility is that LUS Fiber is intended to attract business to Lafayette. It may well have served that purpose. Indeed, two companies have directly linked their decision to locate in Lafayette to LUS Fiber. Pixel Magic, a special effects company, set up an operation in Lafayette to support film and TV productions going on in the southeast U.S, bringing 100 to 200 jobs. And Tapes Again, a 20-year old Boulder, Colorado company that does CD and DVD duplication, announced a move to Lafayette in February 2013 (the number of potential jobs the business represents was not disclosed).[24]

One of the key messages in the campaign to build the network was the concept that Lafayette would have more jobs for its graduates by increasing the number of employers in knowledge economy fields. As we will show below, it has been a success.

Proponents have made attempts to associate other examples of local business development to LUS Fiber. For example, in its discussion about the economic benefits of fiber to the community, the ILSR report mentions a decision by NuComm International to relocate to Lafayette, bringing 1,000 new jobs. However, further examination shows NuComm made the decision in 2006, before ground had broken on LUS Fiber and while there were still legal questions as to whether it would launch at all. Gov. Kathleen Blanco also committed $1 million from the state's Rapid Response fund to lure the company to Louisiana, which may have been a more significant factor in NuComm's location decision. Indeed, the NuComm statement released at the time makes no mention of the FTTH network being a factor in the decision.[25]

Titch's further examination apparently failed to include the news story in the local paper, The Advertiser on August 10, 2006, where the NuComm founder Real Bergevin specifically cited the FTTH plan as a motivation for locating there. The other local paper, the Advocate, also quoted him. More evidence that Titch either has an agenda against LUS Fiber or he is simply ignorant. Either way, his conclusions are suspect. Cable companies is how they manage to increase rates every year.
More IT-related job announcements in the late summer suggest Lafayette may have added 1,300 new tech jobs over the summer of 2014. 400 alone were from CGI, a firm that explicitly credited the fiber network as a reason for moving there. See http://muninetworks.org/content/three-new-companies-move-silicon-bayou

Moreover, while LUS Fiber and its supporters like to take credit for the city's recent uptick in population, jobs and employers, there are other factors at work, including the current oil and gas boom and the general economic growth occurring in the South, particularly along the Gulf Coast. Urban development expert Joel Kotkin found that the population of the coastal states from Texas to Florida grew by 14% over the past decade, more than twice the national average. Although the major cities in the corridor, Houston, Tampa and post-Katrina New Orleans (135 miles east of

Lafayette) saw the most growth, Kotkin identifies Lafayette as among the smaller cities in the region that, as part of this economic boom, are growing much faster than the national average.[26]

Drilling down, we find that Lafayette's 2009 population of 121,000 had grown 9.7% since 2000. Median household income in 2009 was $44,977, compared to the state average of $42,492, and a 25% increase since 2000. Over the same nine-year period, median home values grew to $166,800 from $99,800.[27] This is despite the impact of Hurricanes Katrina and Rita in 2005.

These figures match those for similar-sized cities in the region. For example, Beaumont, Texas, a city of similar size 120 miles west of Lafayette, is seeing nearly identical economic growth without the "benefit" of investment of municipal FTTH.

Beaumont's and surrounding Jefferson County's 2009 population was 118,000, up 4% from 2000. Median age is 34 compared with Lafayette's 33. Over that time, median household income grew 24% to $40,435 from $32,559, and home values grew by more than 50%, to $98,000 from $62,000.[28]

To the east of Lafayette, Tallahassee, Florida, another mid-sized city in the Third Coast corridor, and surrounding Leon County saw population grow by 20% to 181,000 between 2000 and 2011. Median household income grew 12% over the same period to $34,400 (reflecting the lower age median of 26) and home prices nearly doubled to 186,000 from $98,000.[29]

Far from a rural backwater reborn because of its broadband foresight, Lafayette's growth is tied to a regional economic engine powered by the growth of basic industries: manufacturing, agriculture and, most significantly, energy.

> *The American economy, long dominated by the East and West Coasts, is undergoing a dramatic geographic shift toward this area. The country's next great megacity, Houston, is here; so is a resurgent New Orleans, as well as other growing port cities that serve as gateways to Latin America and beyond. While the other two coasts struggle with economic stagnation and dysfunctional politics, the Third Coast — the urbanized, broadly coastal region spanning the gulf from Brownsville to greater Tampa — is emerging as a center of industry, innovation and economic growth.*[30]

Cited by Kotkin, the magazine *Site Selection* ranked Louisiana seventh among the 50 states in terms of attractiveness to investors and third in terms of where new plants were being built.[31]

In other words, there are plenty of factors that are responsible for economic growth in Lafayette.

In addition, it is arguably a reach to use the site selection decision of two small companies as justification for a $125 million fiber optic system. LUS Fiber never disclosed the terms of the Pixel Magic contract, but Pixel Magic agreed to link its name with LUS Fiber and endorse the municipal service. In the business world, such promotional arrangements usually involve some level of consideration, such as a discount or rebate, as they give a marketing boost to the service provider.

Cherry-picking statistics to cast doubt on Lafayette's success is an extremely poor argument. Lafayette certainly does benefit from various factors unrelated to the fiber network, but if municipal networks were the disasters that opponents claim them to be, then other communities on the Gulf Coast or associated with extractive industries should be doing even better. But they aren't. Lafayette was ranked #1 in the 2013 "Leading Locations" report. The Milken Institute has tracked its rise on the Best Performing Cities List, with Lafayette toward the top in both job and wage growth.

But we should return to the goal Lafayette set for itself in terms of not just creating jobs, but specifically creating an environment where kids could graduate and find good, knowledge-economy jobs. On one of my research trips to Lafayette, I met a couple of entrepreneurs who, having grown up in the area, had moved back to Lafayette due to the fiber network. Just an anecdote. But in the January/February issue of Broadband Communities, a story on Lafayette offered some evidence that they had succeeded.

According to the article, Pixel Magic (which moved to Lafayette because of the network) has trained over 100 artists in VFX in Lafayette and "virtually all the artists it employs today are graduates of the University of Louisiana at Lafayette." This is the jackpot – not just creating new jobs, but creating new jobs that are filled by people from within the community.

And in July, 2014, high tech firm Enquero Inc. announced 350 new jobs in Lafayette, citing its "entrepreneurial spirit." Their first time locating outside of California, it is hard to imagine them picking Lafayette in the absence of the globally competitive fiber network. But more importantly, UL-Lafayette has a new pipeline for graduates and is partnering with the firm. [http://theadvocate.com/news/acadiana/9660581-123/software-firm-to-create-350]

Economic incentives may be leading firms to look at locating in Lafayette, but it is hard to imagine over 1,000 new high tech jobs in Lafayette in the summer of 2014 without the FTTH network. See http://www.muninetworks.org/content/three-new-companies-move-silicon-bayou

So, while LUS Fiber lays claim to bringing two employers to Lafayette, it is far from clear that those benefits exceeded the costs that have been and will be paid by local taxpayers. Moreover, there are adverse distributional effects. While a few people will get jobs and some parts of the local economy will experience an uptick in activity, most local taxpayers will not benefit at all from Pixel Magic, Tapes Again or NuComm. In other words, a few people will benefit at the expense of the many. That seems antithetical to the community development objective.

Titch has failed to identify any way in which any costs have been paid by local taxpayers and has apparently not read the bond documents themselves, which make it clear that under no circumstances are taxpayers required to make investors whole in the unlikely event that the network cannot generate sufficient revenues.

The Future of LUS Fiber

Nine years later, the idea that competitive broadband services fits easily into a municipality's scope of operations, if anything, has become more difficult to defend. After five years of operation, while LUS Fiber has completed construction and is currently cash flow positive, it still faces a mountain of debt on which payments become due in 2014. This reckoning will only compound the financial and service issues that already have surfaced.

- Lafayette's city financial report for 2012, released May 2013, showed that LUS Fiber was significantly behind its five-year business plan in terms of revenues and assets.
- For fiscal year 2012, its sixth year of operation, LUS Fiber's operating expenses exceeded operating revenues by $5.3 million. Its net loss was $11.9 million. Its net deficit (assets against liabilities) was $40.7 million. LUS Fiber's original plan called for it to break even in its sixth year and have a net surplus from operations of $6.6 million.
- LUS Fiber's cable TV service is not as competitive with private sector offerings; it offers fewer high-definition channels, does not offer portable viewing options such as HBO Go, and has no applications that integrate smartphone and other wireless devices with cable set-top boxes.
- LUS Fiber programming acquisition costs are tracking with the industry average of between 6% and 11% a year, not 4% as predicted in its business plan.
- While LUS Fiber for several years offered faster Internet speeds than Cox Cable, Cox recently began offering faster download speeds and lower prices than LUS.
- LUS Fiber has not been immune from the quality of service issues that affect commercial cable providers.

LUS Fiber, like its commercial competitors, faces an uncertain future as satellite providers and "over-the-top" (OTT) Internet Protocol TV (IPTV) eat into incremental revenues. Despite a series of surprises and setbacks, LUS Fiber still has a few things going in its favor. It has completed its network, it is cash flow positive and its revenues are still climbing. Its future depends on whether it can continue to increase revenues while getting expenses under control. As we have seen, this will not be easy.

Applications and content providers such as Google, Facebook, Apple, Amazon and Netflix, not to mention scores of smaller companies, have truly begun to monetize their services. When LUS

It remains worth reiterating that no one expects these investments to be easy. Communities invest in fiber networks because they feel they must, not on a lark.

If you want to see a "mountain of debt," I recommend taking a gander at CenturyLink's balance sheet. Telecommunications firms have debt, it is part of the business.

Fiber construction started in 2008. Titch alternates between suggesting the network was unlikely in 2006 (when NuComm made the job announcement) to here counting it as a year of being in operation. His only consistency is the rigging of facts against LUS Fiber.

LUS Fiber offers a more affordable tier of cable than Cox. Perhaps Titch assumes every subscriber wants hundreds of channels. Nonetheless, LUS Fiber crushes Cox on speed and prices for Internet access. Remember though that Lafayette built the network to ensure everyone would have high quality Internet access. Much like Google, LUS Fiber began offering cable television simply as way of improving its business plan focused on expanding the best Internet access possible.

There was a brief moment when Cox offered faster residential download speeds on its most expensive packages but Lafayette always offers better upload speeds and prices its packages more affordably. After a quick upgrade, LUS Fiber once again was the clear leader in high capacity connections.

Does anyone think the big cable companies face an "uncertain" future? Despite Titch's heroic efforts to paint it a competitive industry, cable companies face practically no competition aside from Google, a few small firms like Sonic in California, and municipal networks.

The best criticism Titch can muster is that the future for Lafayette is uncertain.

Fiber was launching, there were still legitimate questions about how these content companies would actually use the Internet to make money. For the most part, they've cracked that nut.

For LUS Fiber, this is a double-edged sword. On the one hand, it can rightfully brag that its FTTH system is better suited for multistream IP video. On the other hand, IPTV directly competes with cable TV on streaming and video-on-demand offerings, yet LUS Fiber gets no compensation when OTT services use its resources.

What private sector broadband service providers find troubling is that the business models of these companies seem to be predicated on their riding the broadband infrastructure for free, or at best, at minimal cost to themselves, hoping that political and market pressure forces service providers to transfer that cost elsewhere.

Once again carrying water for the cable industry that hires him to produce these flawed reports, Titch ignores that the very reason many people pay for Internet access is to gain access to these services. Google, Apple, and others increase demand for home Internet access and have to invest significantly to get their content online. But Titch thinks they should pay still more to the cable industry. More evidence that he is pro-cable more than pro-market or pro-private companies. To be clear, "private sector broadband service providers" don't all find this troubling. It is just the biggest ones that want to invest the least in next-generation services. Providers like Google and Sonic have no problem with the way the Internet works and their services are far superior to that of Comcast and AT&T.

To some extent, this is working. The network neutrality policy favored by former FCC Chairman Julius Genachowski prohibits telephone and cable companies from charging heavy content providers extra for network management or other quality of service enhancements. Consumers, on the other hand, react unfavorably when service providers try to institute bandwidth caps or phase out price packages that allow unlimited bandwidth.

It is unsurprising that after years of constant rate increases, people are frustrated at the idea that they will keep having to pay more while receiving less under bandwidth caps.

So do many supporters of municipal broadband, which puts municipal operations like LUS Fiber in a difficult position. Groups like Lafayette Coming Together tout municipal broadband as socially progressive. Because they are not profit-driven corporations, government broadband, they say, will happily endorse network neutrality and other "free and open access" policies that they regard as pro-consumer but that the private sector resists.

And overwhelmingly, municipal networks have promoted non-discriminatory policies for Internet access.

Already LUS Fiber has introduced early termination fees (ETFs). While its management never officially endorsed network neutrality, it's clear its most vocal community supporters expect it to honor the concept. As will be discussed in the next section, that may not be possible.

What are some likely outcomes for the future of LUS Fiber?

A. LUS Fiber Becomes What It Has Beheld

Municipal broadband projects like those in Lafayette are launched with the moral fervor of a revivalist meeting. In addition to promising low rates and ubiquitous service, the progressive groups say that municipal operations stand for consumer "rights" against the corporate greed of the cable and telephone companies.

This is a bold claim, stated without any evidence. Given that municipal networks have generally been built by communities that vote Republican and often have unanimous votes, it is not clear what "progressive groups" have to do with it. The Lafayette Republican Party endorsed the referendum to build this network and it was supported by the Chamber of Commerce.

But to be sustainable, LUS Fiber, like its commercial counterparts, will have to come to terms with the way services such as YouTube and Netflix have monetized their content delivery by passing the cost of their bandwidth management onto service providers.

Netflix spends millions on its bandwidth. Here again Titch reveals his bias as a pro-big-cable partisan.

Cable companies have proposed ending traditional unlimited "all you can use" pricing and, on a trial basis, have introduced bandwidth caps. Consumer reaction is negative, so it remains to be seen how much traction they have. The FCC has even threatened to ban the practice. Notwithstanding these problems, LUS Fiber might soon find itself joining the very cable industry it was created to fight in an effort to gain more freedom over its ability to price service and collect fees from content delivery.

Political aspects aside, this would raise governance questions as well. What happens when a municipal operation's business practice becomes no different than the incumbent? Remember, the justification for public funding is based on the idea that municipal broadband would be different—something of an anti-cable company. That justification gets shaky if the municipality begins operating just like another Cox or Comcast, with little difference in business strategy or model. However, it might be the only way LUS Fiber can achieve long-term viability. Yet, at the same time it will always have the moral hazard that comes with the crutch of taxpayer support. Private cable companies rely on investor capital, and those shareowners expect return on their risk. Municipal companies have no such limit on funding, nor any such level of accountability to owners.

B. LUS Fiber Shifts its Marketing Focus to Local Businesses

Using its FTTH network to attract and keep businesses was always part of LUS Fiber's mission, but it was presented as a secondary goal to its primary focus on providing a high-speed, less expensive alternative to incumbents Cox and AT&T. Business sales, however, can provide higher revenues with less expense. While an average household may mean $50 to $75 a month for LUS Fiber, minus upfront costs, a small business can deliver twice as much revenue at equal or less upfront cost. A large customer with heavy bandwidth needs, such as Pixel Magic, is a windfall. That's why it can be a tempting path to shift more resources into attracting large accounts. Revenues will grow and expenses will stay even or drop.

On the surface, there is nothing wrong with this strategy. In fact, in the private sector, it's business-as-usual. The rationale for municipal broadband, however, is that it's not about business-as-usual. Municipal broadband is sold on the idea of reaching consumers and small businesses that the private sector is said to be ignoring or who can't afford commercial broadband rates. At the same time, a company such as Pixel Magic, which needs to transfer high bandwidth files to offices in California and elsewhere through the day, would attract bids from all major service providers in Lafayette, and perhaps some national Internet Service Providers such as Verizon and Sprint. Local ISPs in Lafayette may have also been in the running. All of these providers would have offered the required fiber connection—so it isn't clear how a publicly owned provider adds economic value.

A second problem when it comes to the pursuit of this type of business is that LUS Fiber can rely on tax subsidies to underprice competitors and win business. Once the customer is captive, it can later adjust rates. It can also use big taxpayer subsidized wins to build credibility in the market. And while consumer rates are published, large business accounts can be negotiated. City

And what if it did? I sincerely doubt it will, but presumably Titch would welcome that support as he clearly believes the big cable companies are getting the short end of the stick. This section is just an excuse for Titch to air big cable industry talking points.

Once again, I sincerely doubt that is about to happen, but if it did, so what? Municipal electric companies operate in many of the same ways as the private companies do, albeit with lower rates and better reliability. Lafayette burns coal to produce electricity. It is not clear what Titch's point is.

Titch has clearly never stood for election. Cox and other big cable companies raise rates year after year and consumers have little choice but to take it. If LUS Fiber treated their customers as poorly as Cox, Mayor Durel would almost certainly lose his job and heads would roll at the utility. That is accountability, something that is utterly lacking in the big corporate cable companies.

To be clear, Lafayette taxpayers have not paid for the network and the bonding makes it clear they never have to. In fact, the Lafayette network relies on investor capital as well. That is who buys the revenue bonds - private investors.

Focusing on local employers is not just business as usual for municipal networks, it is often the primary focus.

It would in a properly functioning market. Though the commercial sector typically has more ISPs than residential, the dynamic he describes is sorely lacking. For instance, in the Denver metro, a company looking for a fiber connection was quoted a $20,000 install fee by Comcast recently. Titch simply doesn't understand how this market works.

Here we go again. Not only have they not used taxes, the culture of Lafayette suggests any use of taxpayer dollars is incredibly unlikely. To be very clear: LUS Fiber has not used taxpayer dollars whereas both of its rivals have taken taxpayer subsidies or benefited from a government sanctioned monopoly over the years.

government, cities and competitors don't know how much—or how little—a large business might be paying.

When a government-funded broadband operation is under financial pressure, there's a temptation to throw all effort into landing a handful of large accounts. In the short term, it shows a spike in revenues on the balance sheet. In the long term, the hope is that the sales can be leveraged to create a more sustainable revenue stream. The Utah Telecommunication Open Infrastructure Agency (UTOPIA), a statewide government-operated fiber optic network in Utah, yielded to this temptation as its own losses began piling up. To anchor service in a given area, an audit showed that UTOPIA offered its largest customer(s) deep discounts. The peril is, as UTOPIA learned, if you can't build additional business off your initial discounting, you continue to lose money.

UTOPIA is about as atypical a municipal broadband project as there is. Titch likes to use it because of the many mistakes and challenges UTOPIA faced over the years. But networks like Lafayette have learned from them and have been very careful not to repeat them.

Look for LUS Fiber to put more resources into business sales. There are signs it is already putting less effort into retail marketing. LUS Fiber no longer offers triple-play packages that combine cable TV, Internet and phone service into an economic bundle. Meanwhile, basic marketing tasks are being neglected. At the time this study was researched in early 2013, the triple-play offers were still on the LUS Fiber website, even though they had expired in May 2012. They have since been removed.

Titch is perhaps unaware the LUS Fiber started without offering package deals. They later added some. This is a clear example of him searching for ways to discredit LUS Fiber rather than a dispassionate analysis.

This is scant evidence of removing the focus from marketing. It is hard to find a website that does not have outdated material on it. As for the bundles, LUS Fiber offers discounts to subscribers that take multiple services. Its decision to avoid gimmicky bundle deals commonly used by big cable companies (with temporary promotional pricing that leads to higher churn when competitors are actually present) is sensible.

C. The City Government Props Up LUS Fiber, While Cutting Corners and Transparency

Even as LUS Fiber boasts about increasing revenues, more of those revenues are coming directly from the city treasury.

While the LUS electric utility is not allowed to use its resources to subsidize LUS Fiber, there are indications that it might be bending the rules. For the upcoming 2013–14 fiscal year, Lafayette Consolidated Government's Utilities Department—that is, LUS Fiber's parent LUS—is budgeting $1.3 million for telecom services from LUS Fiber. This compares to LUS's $484,000 in telecom spending projected for the current fiscal year ending October 31.[32] The proposed 185 percent increase outpaces all other non-personnel line items, most of which remain flat or decrease. While the parent LUS utility can be viewed as a legitimate telecommunications customer, and it might be desirable for the city to purchase services from its own enterprise, the size of the increase raises questions as to how what services LUS will be paying for, why the purchasing is so much higher than the previous year, and if the city could have received a better deal from the private sector.

The utility system has an annual budget of over $220 million between water, power, and fiber. Over time, it has been able to use the fiber network to better monitor its various utilities. For instance, the system now tracks water pressure across the city and operates nearly 200 sewer lift stations. In years of studying LUS, it is clear that the culture is to avoid boasting and focus on reliable, professional services. Unfortunately, that also means they can be attacked with ignorant claims. In our experience, a community the size of Lafayette would pay substantially more than $1.3 million to private providers to meet all of its telecom needs. This involves connecting schools, libraries, public safety, municipal buildings, and all the utility functions. Though $1.3 million is more than in previous years, it seems below the norm for a telecom budget in a mid-sized city.

The hefty increase in purchases becomes even more questionable because LUS Fiber owes $35 million to LUS. At the very least it creates the perception that LUS—a government entity, remember—is inflating its purchases to offset LUS Fiber's debt.

Only if $1.3 million is unreasonable for a community of over 120,000 people. It is not.

In addition, there are other more subtle ways LUS Fiber might be piggybacking on its parent. For example, the LUS electric utility includes LUS Fiber promotional material with monthly bills, substantially reducing, if not eliminating, LUS Fiber's direct mail costs. Over time, this government subsidy provides LUS Fiber a significant advantage over the private sector.

Does LUS Fiber pay an appropriate portion of its website support, programming and customer payment processing? How are employee resources allocated? Last year LUS Fiber consolidated its customer service centers and co-located them with electric utility service and payment centers. Does LUS Fiber compensate the electric utility for use of this space?

This is becoming absurd. Titch offers no evidence whatsoever that Lafayette is not complying by all relevant laws and regulations. Instead, he just throws mud at LUS Fiber. What are the potential savings to Lafayette, even if all of these allegations were true?

Would it outweigh even part of the advantage Cox has with a multiple decade head start and many years of monopoly? Would it outweigh Cox's advantages in scale by advertising across the whole state at once? The savings big companies get from offshoring call centers? All the tax breaks big corporations manage to convince Uncle Sam to give them? Even if LUS Fiber had all the advantages Titch claims, Cox still has many more advantages in the market as a massive firm.

Admittedly, some of this is difficult or even impossible to account for or audit. That in itself creates a temptation. Municipal proponents may claim these observations are picky or insignificant. Yet they are all costs that private sector competitors must pay. To be fair, the transparency of LUS Fiber, along with the entire Lafayette Consolidated Government, is commendable. Yet because municipal broadband is closely tied to other municipal utility operations, there will always be transparency issues. That's just another reason to be wary of municipal broadband.

The transparency of the most secretive publicly owned broadband network is undoubtedly greater than the most open private company.

D. LUS Fiber Sells Assets

If it can't get expenses under control, the most viable exit strategy for LUS Fiber would be sale. An advantage here is that the network is complete. The total number of customers and average revenue per user, a number known only to LUS Fiber, would also factor in its overall value. The city of Lafayette would stand to recover most, if not all, of its investment under this scenario.

Yet more evidence that LUS Fiber does not have a problem.

Provo, Utah took this path when it realized that iProvo was never going to reach its financial goals. In April 2013 the city sold the network, which had cost $39 million to build, to Google for $1. While Google has agreed to complete the network within five years at an expected cost of $30 million, it did not assume the city's debt. Provo taxpayers will still be paying that off.

At the urging of Comcast and CenturyLink's predecessor, the Utah Legislature limited what business models are available to Provo specifically to hurt it financially. Provo's residents and businesses are indeed paying for it. Though, if you polled communities, many would happily write a $39 million check to get Google Fiber rather than being stuck with a cable monopoly.

While there may be some benefit to Provo residents, the Provo outcome also shows how the financial consequences of municipal broadband can lead to an uneven playing field in the private sector. Provo's goal was to provide a publicly funded nonprofit alternative to commercial service providers, a notion that raises questions of unfair competition in and of itself. While the municipal network is now in private sector hands, the cost of construction, as well as acquisition of current customers, were all underwritten by Provo residents. In essence, Google is launching operations in Provo free of $39 million in sunk costs. Its broadband competitors have no such advantage.

Both the cable and telephone companies operating in Provo had the benefit of decades of first officially sanctioned monopoly and then a de fact monopoly (sanctioned cable monopolies ended in 1992 and telephone monopolies in 1996).

E. LUS Fiber Sustains Outright Failure

It's fair to say that LUS Fiber has thus far avoided a reckoning that cities such as Ashland, Lebanon, Marietta and Dalton, Georgia have faced. The operation is not about to go belly-up leaving city taxpayers with a huge bill and little else.

But that's not to say management won't be sweating the next few years. It is imperative that LUS continues to grow revenues while bringing its costs under control. If it cannot do that, it will eventually face a reckoning.

After 24 pages of sowing doubt and confusion, the worst Titch can say is that things could be hard in the future. There is no evidence of failure here.

Conclusion: Implications for Municipal Fiber Projects

While LUS was ramping up, a number of cities had already launched systems. The first were in smaller towns—Marietta, Georgia; Kutztown, Pennsylvania; Lebanon, Ohio—where the incumbent cable companies had a poor reputation for service. These were followed by larger and more expensive projects in cities such as Tacoma, Washington; Ashland, Oregon; and Provo, Utah. Clocking in with an initial budget of $110 million, LUS Fiber in Lafayette in 2004 was to be the largest and most ambitious municipal broadband system in the U.S. to date.

Well more than a hundred publicly owned cable and/or fiber systems at that time, but who is counting?

Tacoma is 50% larger than Lafayette.

Yet as city managers were selling the project to Lafayette voters,[33] problems with municipal broadband were beginning to surface elsewhere. The municipal systems that had been launched began to fall further and further behind on their plans, failing to garner the revenues needed to continue construction and pay debt. The number of failures began to grow; Marietta, Georgia sold its municipal fiber network at a $24 million loss after signing up just 180 customers in eight years of operation.[34]

This might be a relevant stat if the business plan of Marietta was even remotely similar to that of Lafayette, but it wasn't. Marietta was a wholesale network not a retail network, yet another fact that has escaped Titch's research. Additionally, the $24 million figure is a fabrication that ignores revenues over many years.

Other municipal problems have been well documented. Lebanon, Ohio sold its municipal system to Cincinnati Bell. Ashland, Oregon suspended construction when its debt hit $15.5 million, forsaking the low-income neighborhoods it had been financed to serve and instead chose to compete only in upscale parts of the city—and still failed to gain traction.[35] Provo's FTTH network, iProvo, never got near its break-even point. The city sold the network to Google for $1, while retaining liability for its $39 million cost. Faced with accelerating costs, Corpus Christi, Texas halted construction of a municipal wireless network and converted existing infrastructure into a specialized wireless network serving city services only.

We dealt with many of these claims earlier in the paper.

Larger metropolitan areas such as Houston, Chicago, New York, San Francisco, San Jose and Philadelphia shelved plans for municipal wireless networks after determining they were cost-prohibitive and redundant, especially given the number of free WiFi hotspots that were being set up in libraries, coffee shops, hotel lobbies, bars and restaurants. Other cities, like Addison, Texas, claimed to have successful municipal wireless deployments. But on examination it turns out that these networks are concentrated in small downtown areas, malls and convention and meeting centers; few deliver quality residential or business service.

Muni Wi-Fi is an entirely different story. Titch likes to blame the failure of private companies like Earthlink on municipalities. This is like claiming the Charter cable bankruptcy is a local government failure because Charter holds a franchise. Smoke and mirrors.

Different networks serve different purposes. Titch cannot claim that some approaches somehow don't count because they don't meet criteria he invents. Local governments have been involved in building all kinds of networks, from small hotspots to citywide fiber.

Meanwhile, state legislatures around the country, watching sub-divisions hemorrhage money on the projects and fearing taxpayers statewide would be stuck with the bill, have proposed laws that would place limits and conditions on municipal broadband projects, if not ban them outright.

Proponents, however, maintain that most of these past failures were due to political maneuverings by cable and telecommunications companies, or poor implementation of otherwise sound plans. Municipal broadband, they argue, could still be a successful and cost-effective way to deliver broadband.

Compared to FTTH projects of the past, LUS Fiber is in good shape. It has thus far navigated many of the same challenges that have faced previous efforts, while completing its build-out and achieving positive cash flow. It is not in imminent danger of collapse. But it still faces high debt and a market much more volatile and competitive than it expected. Reports that praise LUS Fiber gloss over the significance of these challenges, but cities should give them serious consideration.

To review: The presumption that broadband is a utility that leans toward a natural monopoly simply doesn't hold. There are clearly many competing technologies and new ones are being developed all the time. In large part, these facts explain why municipal broadband has been a failure just about everywhere it has been tried.

In Lafayette, municipal broadband has done little to improve access for consumers. More importantly, it has not delivered on its promise of high-speed Internet access at rates significantly lower than cable or phone companies. While there may be latent demand for additional competition, municipalities are not well placed to provide it. Indeed, it appears that most consumers prefer the offerings of unsubsidized competitors.

A far better way to increase competition and choice in municipalities that currently have only one wired broadband provider is to reduce or remove any barriers that keep private sector providers from building infrastructure. These include exploitive franchise fees, unnecessary regulatory red tape pertaining to the approval of cable rights-of-way and construction, and burdensome rules designed to inhibit construction of cell towers or WiFi antennas.

While some businesses may benefit from subsidized broadband access, they do so at the expense of other businesses and consumers who don't require the higher speeds offered. In the long run, these subsidies reduce or negate any economic gain that might come from new business.

Finally, it is important that policymakers remember consultants who specialize in creating municipal broadband business plans have a vested interest in seeing these projects move forward. They tend to present municipal broadband in its most optimistic and favorable light and emphasize technology and applications. Since many of municipal broadband's pitfalls lie in more mundane areas of operational costs, customer retention and competitive marketing, skeptical officials often lack the background or knowledge needed to raise relevant questions about a business plan. Officials looking to do greater due diligence should consider the following questions as a starting

With ILSR tracking over 400 municipal projects and Titch unable to list five real failures, the evidence is overwhelmingly that municipal networks do well.

Yet another assertion that runs counter to his evidence. His own numbers show that Lafayette has reduced the cost of Internet access significantly. And offers a much lower cost television package and the lowest cost triple play option.

Titch has presented no evidence of subsidization. And he overlooks the reality that AT&T receives government subsidies in some of its lines of business.

Titch believes franchise fees are exploitative. Franchise fees are a reimbursement for private use of the public right-of-way. Apparently firms like Cox should not have to pay for their use of others' property. Should I be able to build a large antenna array outside Titch's house without oversight? These are complicated questions and a delicate balance must be struck, something Titch wants to gloss over.

More allegations without evidence.

This is not only untrue, it is something Titch could not possibly know given the many basic factual errors he has made about municipal networks throughout this report.

Some of Titch's questions are valuable and local officials should absolutely take time to understand these issues thoroughly.

point for a deeper examination into whether municipal broadband is the correct course for their community:

1. Do you see broadband as an infrastructure business or a service business? Does its value proposition lie in its 100 Mb/s all-fiber connections, or the delivery of quality cable, phone and high-speed Internet service?

2. In an Oct. 2011 financial analysis of the cable/satellite TV industry by International Strategy and Investment Group, authors wrote that cable TV continues to face "margin headwinds" because costs are increasing 6–8% annually while average revenue per user is growing only at 3–4%. Do you agree? Does your business plan reflect these trends? If not, what is your opinion on cost trends?

3. The same report says the cable TV market is largely saturated and that subscriber growth is mostly zero sum, that is, it comes down to poaching customers from competition. Do you agree? What percentage of your customers will be first-time to broadband services? How many must you lure from cable, telco and satellite to be competitive?

4. The same report also says DOCSIS 3.0 technology materially improves HSI (high-speed Internet) by up to 10–15 times, enabling the cable operators to compete with sophisticated FTTH offerings for at least the next five years. Do you agree? Why or why not? How will this affect your positioning as an FTTH provider?

5. The LUS Feasibility Study bases its plan on reaching a 50% share of the cable TV market in Lafayette. In retrospect, was this goal overly optimistic? Would you be confident in urging cities considering municipal broadband plans to set this goal? If not, what is a realistic goal?

6. Municipal broadband proponents say FTTH attracts businesses and jobs. Does the economic value it creates justify the expense? Do you have any metrics that can accurately measure the economic value FTTH brought to their communities?

7. Will the operation be able to afford to offer value-added services such as video-on-demand services for mobile and portable devices? Will it be able to deliver applications that allow customers to program DVRs from their phones and tablets? Do you believe these features are important to maintaining a competitive service?

8. The Cable TV industry is wrestling with competition from so-called "over-the-top" (OTT) providers such as Netflix and Hulu, which cut into on-demand revenues. Commercial cable companies have broached the idea of tiered service rates and bandwidth caps, in part to recoup costs from OTT. Is this something your operation must be prepared to do? Will there be pushback from one-time supporters who believe that bandwidth caps go against the spirit of public broadband?

Though any consultant should have a good answer to this, it is worth noting that Comcast, Cox, AT&T, CenturyLink, and others have started to invest in FTTH in some markets, recognizing that their old technology is insufficient. However, they are unlikely to upgrade in areas where they face little or no competition.

A better question would be to follow this up with recommendations for strategies of how to utilize the network to get the same incredible results that Lafayette, Chattanooga, and Wilson have achieved, for instance. Having the network is one piece, but using it to nurture and attract jobs is another.

Once again, I cannot help but note that many of the private companies building the most advanced networks are not trying to shake down Netflix or other successful over-the-top companies. It is the big cable and telephone companies trying to avoid investing in new networks, who face little competition, that want to change how the Internet has historically worked.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