The Hidden Problems with Government-Owned Networks

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I. INTRODUCTION

In his 2011 State of the Union Address, President Obama set a public policy goal aimed at providing broadband to 98 percent of Americans within five years, and provided significant funds to build out broadband to more American communities. This is a laudable goal. Access to high-speed Internet provides consumers with tools important for healthcare, education and job seeking, among a whole host of other beneficial applications.

Economics and consumer welfare are important considerations in deciding how to best deliver broadband to all areas of the country. Many private providers have extended high-speed Internet service to areas across the country. However, the costs of deployment, maintenance and updating technologies means that some communities remain without broadband access as it is not fiscally feasible for providers to expand into those areas. In addition to the services provided by private enterprise, some local governments across the country have developed their own broadband networks (henceforth referred to as government-owned networks or GONs), both in areas currently served and unserved.

Unfortunately, efforts by municipalities to build broadband networks are not necessarily the best solution and have failed for several reasons:

- Government-owned networks use taxpayer funds and federal grants to build networks in areas where private providers already make high-speed Internet service available. This network overbuild is counterintuitive in that it requires taxpayers to fund and subsidize a network that duplicates an existing network.
- Many GONs fail because they lack a sustainable business plan and the long-term resources to invest in maintenance and necessary upgrades as technology evolves. When this has happened, taxpayers have had to fund the failures. Several case studies within this paper discuss this phenomenon in detail.
- Government-owned networks compete unfairly with existing providers. As a government entity, a GON can practice various anticompetitive activities which put private firms at a competitive disadvantage. Thus, municipalities that use taxpayer funds to build a broadband network actually act to forestall market entry and decrease competition. With GONs, consumers lose the benefits of competition and choice. They also lose tax revenue from a private network that might have otherwise entered that market, and taxpayers pay more in taxes as they subsidize the operation and maintenance of a GON.
- Instead of turning to GONs, communities could benefit by examining how to develop a fast and reliable broadband network while protecting taxpayers and maintaining the prices necessary to ensure the achievement of the President's goal of near-universal broadband service.

II. BACKGROUND

The United States is a market-based economy, which means the market is allowed to address economic wants and needs in the most efficient and cost-effective manner possible. The market has worked exceptionally well in meeting consumer demands and has allowed private enterprises to supply the market with an abundance of choices.

Faulhaber argues, "The private sector is absolutely best at competing with better prices, better service, higher quality, new innovations and exploring customers' preferences — far better than the government will ever be."[1]

Most economists acknowledge, though, that the market does not always work perfectly - there are market failures, conditions under which goods are not produced, overproduced or underproduced.

The broadband marketplace, however, is not an instance of these market failures.

There is a significant public interest in working to ensure that all Americans benefit from broadband

[1]Faulhaber G.R. "A National Broadband Plan for Our Future: A Customer-Centric Framework" International Journal of Communications, 3(2009) 742-79.

technology and what it brings. There is also a significant cost associated with deploying, maintaining and upgrading broadband networks. Companies like AT&T, Verizon, Sprint, Comcast, Time Warner and Charter spend billions of dollars annually to enhance their broadband networks. Tapia and Ortiz note, "The market may do a good job of providing reliable infrastructure with reasonable quality of service, but it has no incentive to provide universal, ubiquitous coverage if it cannot generate sufficient profit doing so."[2] Occasionally, private firms cannot make a business case for building networks in areas of low population density or difficult terrain. In those areas, GONs may make sense – but consumers and taxpayers must understand the risks and secure protections to ensure the ongoing benefits.

III. GOVERNMENT FAILURE

Government provision of certain services is less efficient, more expensive for taxpayers, and less cost effective than private entities' delivery of those services.[3] Broadband is a compelling example of a service that governments are ill-suited to provide.

According to Kahn, "The central continuing responsibility of legislatures and regulatory commissions [is] finding the best possible mix of inevitably imperfect regulation and inevitably imperfect competition."[4] Thus, there is the possibility of government failure, especially in an emerging and highly competitive industry where regulators have difficulty keeping up with constantly changing technology.

It is important to consider whether a government possesses the expertise to develop and operate a broadband network. This is an especially important question in the broadband market where technology is constantly changing and firms need to be flexible and have the ability to constantly update their business plans. Communities that want to invest public funds must have well defined plans, goals and milestones.[5]

This advice is often overlooked when community leaders attempt to set up GONs. Salt Lake City Mayor Rocky Anderson noted the pitfalls and hazards presented when the city considered joining UTOPIA, a GON. He stated, "During the UTOPIA debate, we thoroughly reviewed and analyzed the possibility of joining UTOPIA and concluded this endeavor posed unacceptable risks to taxpayers, particularly in light of emerging technologies."[6]

Adding to scholarly research on the issue, the Federal Trade Commission (FTC) has also recognized that the government "is slow to react to changing market conditions due to bureaucratic operating constraints."[7]

Unfortunately, as we will see, inability to efficiently operate these networks in the market has led to many problems.

IV. PROBLEMS WITH GONS

The history of GONs has been one of various problems: failure to achieve universal service in areas that they serve; the lack of a viable cost benefit analysis that has led to costs outweighing benefits; the inefficient use of scarce resources; the inability of GONs to cover their costs which has led to government failure; the unfair competitive advantages given a government entity which has resulted in anticompetitive behavior; the opportunity cost of using limited tax funds on GONs and not on more essential services; and the stifling of private firm innovation. We examine these various issues below.

A. Failure to Achieve Universal Service

The existence of a GON does not assure universal service because there is no guarantee that the network will be built out to reach all residents in a given geographic area. The cost to build the infrastructure to certain areas may be prohibitive because of terrain or density of population. This can be seen in the case of the Ashland Fiber Network (AFN) in Ashland, Oregon.

Case Study: Ashland Fiber Network

AFN was launched in the late 1990s and ultimately accumulated debt of $15.5 million due to higher than expected construction and operation costs. Originally, AFN borrowed its startup funds from the Ashland Electric Utility. After several years of city departments

[2]Tapia, A. H. and Ortiz J.A., "Network Hopes: Municipalities Deploying Wireless Internet to Increase Civic Engagement" Social Science Computer Review, 28 (Feb.2010) 93-117.
[3]Hilke, J. Cost-Savings from Privatization: A Compilation of Study Findings, Reason Foundation, March 1993.
[4]Kahn, A, The Economics of Regulation: Principles and Institutions, Volume II (1988).
[5]Bell R., Jung J.and Zacharilla L. Broadband Economies, Creating the Community of the 21st Century. 2009
[6]Balhoff M.J. and Rowe R.C., Municipal Broadband: Digging Beneath the Surface, Balhoff & Rowe, LLC, September 2005.
[7]Muris, T.J, Testimony, Director, Bureau of Consumer Protection, Federal Trade Commission, Hearings on the Provision of Telecommunications and Information services by the Federal Government in Competition with the Private Sector; Hearings Before the House Government Information and Individual Rights Subcommittee of the Committee on Government Operations, 97th Congress, 1982.

covering AFN shortfalls, in August 2004 the city took out $15.5 million in bonds with an annual debt payment of $1.43 million. Between 2005 and 2007, AFN did not contribute anything to its debt payment and between 2008 and 2010 it contributed $356,000. AFN hopes to pay $700,000 in 2011 and plans to contribute $409,000 in 2012.[8]

In January 2005, Ashland City Council voted to give a $1 million subsidy to AFN, of which $540,000 came from the wastewater fund and $460,000 from the electric fund. In October 2005, the city of Ashland adopted a surcharge of $7.50 on all electric bills to subsidize AFN – a surcharge that was later rescinded after protests from citizens. In December 2005, $500,000 was given from the electric department to help AFN pay its debt. Property taxes now help cover part of AFN's debt.[9]

Originally, about 1,300 households did not receive AFN services because it was too costly to build the infrastructure to service certain areas. In this case the GON was not willing to provide universal service to the entire geographic area because of the costs of servicing certain areas.[10] Thus, residents who were not offered system access or who chose not to use it were still required to subsidize the network through higher property taxes. In declining to provide service to hard-to-reach areas, AFN engaged in the same business practices as private firms, namely, avoiding high-cost areas. However, unlike a private firm, when the GON declines to serve all households in its area, property owners who do not have access must still pay for the system in the form of higher taxes.

AFN's IT Director Rob Lloyd stated, "As people download movies and do other activities online that gobble up bandwidth, controlling costs is critical." He also stated that, "People who use excessive bandwidth -- up to 20 percent of customers -- will likely see higher charges of up to $25 per month."[11] Such a pricing policy has been condemned when practiced by private firms.

B. Lack of Proper Cost-Benefit Analysis

Government owned network proponents have not provided quantifiable cost-benefit analysis. In his paper on municipal public networks, McClure states, "There is no proven business model for such networks, and cities are unable to show any realistic research data indicating how many people will use the service, whether they will pay for the service or how the city will pay for the network if the plan doesn't pan out."[12] Similarly, Ahn and Lee argue, "While municipal investments on wireline networks provide social benefits to the municipal residents, they also incur significant social costs with respect to recurrent investments and a possible hampering of market competition. Therefore, measuring the actual benefits and costs of municipal wireline networks is paramount in determining whether these investments are socially desirable."[13]

The financial models built by governments looking to deploy GONs fall short in four major areas:

(1) The initial investment is generally higher than planned;

(2) Penetration rates are systematically overestimated;

(3) Revenues earned are lower than expected due to responses from competitors; and

(4) Operating costs are almost always underestimated.[14]

Often, the governments looking to deploy GONs do not take into account the competitive response of incumbents. Unfortunately, this results in overinflated revenue estimates – since in reality both prices and subscribership are usually lower than projected. Bell, Jung and Zacharilla note, "When governments decide to spend public money on any kind of telecommunications investment, they should expect a competitive response from the private sector. This can come as a shock. Governments are not accustomed to competition."[15] While even

[8]Ashland Fiber Network, Annual Report, How Ashland Connects, June 21, 2011.
[9]Aldous V. "Ashland, Ore.,Transfer Funds to ISP" Jan. 18, 2006.
[10]Aldous, V. "Ashland Fiber Network's Chief Says He will Make Hard Choices", Mail Tribune, Aug. 6, 2010.
[11]Ibid.
[12]McClure D.P "Not In The Public Interest - The Myth of Municipal Wi-Fi Networks: The Myth of Municipal Wireless Networks", New Millennium Research Council, 2005.
[13]Ahn, H. and Lee T.H. "An Analysis on the Social Costs of Municipal Wireline Broadband Network Investments", International Telecommunications Policy Review, 17, 4(2010).
[14]Balhoff M.J. and Rowe R.C., Municipal Broadband: Digging Beneath the Surface, Balhoff & Rowe, LLC, September 2005.
[15]Bell R., Jung J.and Zacharilla L. Broadband Economies, Creating the Community of the 21st Century. 2009

private firms may not expect to make a profit in the first few years, the history of the financial feasibility of GONs has been, for the most part, disastrous.

Very few GON balance sheet estimates have come close to reality, with losses being much greater than anticipated. The use of taxpayer monies for GONs has been questioned, as they generally run over budget for construction, are not financially sustainable and require subsidies to survive.[16] Bell et al. add, "Communities considering any role in building telecom systems must find an economic model that makes basic business sense and is highly conservative in its estimates of revenue and expenses. Revenue will take longer than expected to grow, due to countless obstacles that will be discovered after the network is activated. Expenses will be higher than expected because they always are."[17]

Similarly, studies have shown that almost all GONs are losing money. An examination of various GONs determined that virtually all of them have a negative net present value. This is true in rural areas where there is no competition as well as areas where competition exists. A major reason for this is that municipalities likely do not have the scale to deal with technology changes, cover costs and offer the variety of services needed in the constantly changing telecom environment.[18] Gifford and Walker concur, "The financial record of municipal network operators in competitive markets is overwhelmingly poor, caused primarily by unrealistic business plans, including the inability of municipal operators to achieve the necessary scale to compete with larger network operators."[19] Moreover, Kerton argues that there have not been any real success stories and believes that the rhetoric is not consistent with the technology.[20]

For example, in 2010, there were nine municipal telecommunications providers operating in Tennessee, all of which were affiliated with a different municipal electric companies. Together these nine providers have incurred deficits of around $176 million.[21] Also, only two of the nine networks had enough revenues in 2010 to cover the cost of operations.[22]

Case Study: Chattanooga EPB's Fiber Optic System

Chattanooga EPB's Fiber Optic System has received a tremendous amount of publicity because it is the first city in the U.S. to offer speeds of up to one gigabit per second, broadband service 200 times faster than the average broadband speed in the U.S. and 10 times faster than the 2020 standard set by the Obama Administration.[23] However, what is often ignored in press accounts is the price of the service, $350 per month, and the dire financial situation of the fiber optic system.

Lohr explains, "Verizon for example, has invested billions of dollars to upgrade much of its network for fiber optic Internet service, at speeds of 15, 25 and 50 megabits per second. Those speeds are three to 10 times faster than standard broadband service; the monthly charges are $50 for 15 megabits, $65 for 25 and $140 for 50. And the vast major of customers, analysts say, choose the 15-megabit, $50 service." When Harold DePriest, the president and CEO of EPB, was asked why EPB offers this, he responded, "The simple answer is because we can."[24] The price per month for the service makes it unlikely that many would subscribe. So, it is not an issue of demand.[25] DePriest also admits, "We don't know how to price a gig. We're experimenting. We'll learn."[26] It is clear that there is no real business plan concerning EPB's investment.

An examination of the 2010 EPB annual report sheds some light on the financial record of EPB Fiber Optics. Net assets at the end of the 2010 fiscal year were a negative $16.8 million - a decrease of more than $3.8 million from 2009. It currently has $57 million in notes payable to the EPB's electric system and current assets of only $52.9 million.[27]

[16]Valvo, J."Municipal Broadband's Record of Failure, A Profile in Market Intrusion" Americans for Prosperity, March 2009.
[17]Bell R., Jung J.and Zacharilla L. Broadband Economies, Creating the Community of the 21st Century. 2009
[18]Ibid.
[19]Gifford R.L. and Walker M.A. Glenwood Springs Residents Should say No to Municipal Broadband, Convergence Law Institute, April 2009.
[20]McClure D.P "Not In the Public Interest - The Myth of Municipal Wi-Fi Networks: The Myth of Municipal Wireless Networks", New Millennium Research Council, 2005.
[21]Rizzuto, R.J. Financial Performance of Tennessee's Municipal Cable and Internet Overbuilds, March 21, 2011.
[22]Ibid.
[23]Lohr S., "Fastest Net Service in U.S. Coming to Chattanooga" The New York Times, Sept. 12, 2010.
[24]Ibid.
[25]Ibid.
[26]Barthold J., "Chattanooga Choo Choo? City-owned utility Set to Offer 1 Gig Broadband" FierceCable, Sept.10, 2010.
[27]EPB, 2010 Senior Management & Financial Information, 2010.

C. Inefficiency and Waste

Government-owned networks create inefficiency and cause waste.[28] Building GONs in areas that already have broadband service creates an unnecessary duplication of networks, which in turn wastes resources. Cox states that "Governments, unlike companies, are not able to fail, and thus there is no competitive 'check' on mismanagement or waste."[29]

For example, GONs serving five cities in North Carolina – Wilson, Salisbury, Morganton, Davidson and Mooresville – had a combined 43,000 household subscribers and debt of $148 million.[30] This is a debt of more than $3,000 per subscriber. Below we examine the situation as it unfolded in Mooresville and Davidson.

Case Study: MI-Connection

In 2007, the cities of Mooresville and Davidson took over the former Adelphia Communications cable company, preempting a private offer from Time Warner Communications. The GON that resulted, MI-Connection, was shared by both towns, which agreed that their financial interest would be based on the system's subscribership percentage. As of July 28, 2011, Davidson had 35.21 percent subscribership, and Mooresville 64.79 percent, with Davidson's share increasing by two percentage points since June 30, 2010.

Local officials believed that MI-Connection was nearly a risk-free investment. Leamon Brice, Davidson's town manager, declared in 2007, "The potential growth of customers, and therefore profits, is astronomical."[31] However, four years later the system has yet to turn a profit. Gross revenues increased by just three percent in the fiscal year ending June 30, 2010 - when they were projected to increase by 20 percent. Losses for the same period were $5.7 million. As a result, for a second year in a row MI-Connection has received a warning letter from state officials concerning its financial conditions and outlook.[33]

MI-Connection's debt is $89.9 million. Davidson's 2011-2012 debt payment is $1.94 million, about 21 percent of the town's budget. Some local critics of the system have suggested that residents should not subscribe so the city will have a lower percentage of the ownership and thus less debt. In 2011, Davidson has 44 percent of the penetration rate whereas Mooresville only 34 percent. The chairman of MI-Connection, John Venzon, took note of the program's unintended consequences, remarking that the more successful the program, the bigger portion of the debt a participating town carries.[34]

In Davidson, some political candidates are calling for an exit strategy.[35] The towns are left with a Hobson's Choice: They must either repay the system's debt with general funds or default. Brice addressed the consequences of default, stating, "That would have severe repercussions. First, the two towns wouldn't be able to borrow again, and second, a default would affect bond ratings and interest rates for not only our towns, but for towns across North Carolina and the nation."[36]

Davidson Mayor pro tem Laurie Venzon believes that other towns should not make the same mistake.[37] She has called on civic pride to help resolve the issue – asking residents to subscribe to MI-Connection – and has argued, "All we're saying is support your local businesses. We're not asking you to sign up for crappy service. We're not asking you to sign up for something that's astronomically priced. I'm asking you to support it so that the revenue will be there, so we don't have to increase taxes or make any more cuts."[38]

D. Unfair Competition from GONs

Government-owned networks use their competitive advantage from the tilted playing field as well as the ability to artificially inflate competitors' costs to foreclose entry into the market. As technology changes, a private firm may be able to make a business case for entry

[28]Hilke, J. Cost-Savings from Privatization: A Compilation of Study Findings, Reason Foundation, March 1993.
[29]Cox B. "The Viability of Municipal Wi-Fi Networks" in "Not in the Public Interest – The Myth of Municipal Wi-Fi Networks", New Millennium Research Council, 2005.
[30]Robertson, G.D. "Legislature Reach a Deal on rules Governing North Carolina Municipal Broadband" The Herald- Sun, 2011.
[31]Taylor J. A. "Davidson, Mooresville Taxpayers Face Bailout of Municipal Broadband Service," Carolina Journal News, May 14, 2010.
[32]Boraks D, "MI-Connection Revenues Weak on TV Customer Losses" Davidson News.net: July 29, 2011a.
[33]Boraks D. "State Officials Repeat Concerns about MI-Connection Finances" Davidson News, Feb.24, 2011b.
[34]Boraks D, "MI-Connection Revenues Weak on TV Customer Losses" Davidson News.net: July 29, 2011a.
[35]DeLoache F, "MI-Connection Leaders Focus on Debt Burden" Mooresville Weekly, August 5, 2011.
[36]Taylor J. A. "Davidson, Mooresville Taxpayers Face Bailout of Municipal Broadband Service," Carolina Journal News, May 14, 2010.
[37]Batten A., "Davidson Approves Changes to MI-Connection Board" The Herald Weekly, February 10, 2011
[38]Taylor J. A. "Davidson, Mooresville Taxpayers Face Bailout of Municipal Broadband Service," Carolina Journal News, May 14, 2010.

into high-cost areas. However, where GONs operate, such entry is unlikely to occur because of artificial barriers that deter private entry.

Similarly, Lott states that "To the extent that public enterprises value maximizing output rather than profits … the social costs of public ownership may be substantially greater than previously believed. Predatory commitments by public enterprises are more credible since, unlike private firms, they have been shown to be made better off by the very act of predation and not just by the long-run returns from eliminated competition."[39] Others agree that the objective of public enterprises is to maximize output, and that the absence of stockholders makes it easier to achieve this objective.[40][41] Thus, public enterprises are able to keep more efficient firms out of the market while producing more than is economically efficient.

Given potential entry into the market or the existence of competition by private enterprise, GONs have essentially three options:

(1) Compete;

(2) Eliminate competitors through anticompetitive actions; or

(3) Sell the network at a loss.

We will examine the second option. Other things being equal, private firms would need a considerable cost advantage over GONs for private entry to occur in such scenarios. Since GONs are losing money, they are pricing below cost, which results in predatory pricing. Such pricing is anticompetitive and makes it more difficult for private firms to compete. Given the losses that GONs incur, subsidies are needed for survival. A private firm under these conditions would leave the market.

An example of a public enterprise using its power to predatory price and thus unfairly compete with private enterprises is that of Deutsche Post in Germany, which the European Commission found "used profits from its state-granted monopoly in letter mail services to subsidize efforts to dominate the parcel delivery business in Germany by pricing below cost and undercutting competitors."[42] The company was ordered to repay 572 million Euros to the German government and divest its parcel delivery business.[43]

Government can compete unfairly with private firms because it does not face the same burden of taxes, cost of capital, rights of way and liability insurance. Private firms are subject to income, sales and real estate taxes, as well as franchise and right-of-way fees. Government controls local taxes and right-of-way fees, so they are generally waived for GONs. Government-owned networks may also receive a lower cost of capital because their risks are lower as a result of their investment being backed by the government. Freedom from taxes is a special advantage to GONs since telecommunications services is one of the most highly taxed, if not the most highly taxed, industry.[44]

Since local governments have direct control over some of the costs of private broadband companies, including franchise and right-of-way fees, they can block a private firm from market entry, or put the firm at a competitive disadvantage. It has been shown that public firms can deter entry by being in a unique position to raise rivals' costs through the establishment of industry rules that negatively impact competitors.[45]

For example, in the *City of Hawarden v. US West Communications*, the city was sued concerning a discriminatory "user fee" of three percent that was imposed on non-municipal entities. The ordinance was put into place after Hawarden created a municipal communications utility - the Iowa Supreme Court found such a practice unconstitutional.[46]

E. Opportunity Costs of GONs

The question now is: Who pays for the shortfall when theoretically sound GONs fail in the real world? Realistically, the only alternatives for making up a shortfall resulting from a GON gone bad are higher taxes, cross subsidization or a decrease in service quality. In some cases, property tax increases are used to provide broadband subsidies.

[39]Lott, J. "Predation by Public Enterprises" Journal of Public Economics 43 (May 1990) 237-51.
[40]Blais A. and Dion, S. "Conclusion: Are Bureaucrats Budget Maximizers?" in A. Blais and S. Dion, eds., The Budget-Maximizing Bureaucrat: Appraisals and Evidence, 1991.
[41]Rees R. "Positive Theory of the Public Enterprise: Concepts and Measurement" in Marchand M., Pestieau P. and Tulkens, eds. The Performance of Public Enterprises: Concepts and Measurements, 1984.
[42]Sappington D.E.M.and Sidak, J.G. "Competition Law for State-Owned Enterprises, Antitrust Law Journal 71(2003a) 479-523.
[43]Ibid.
[44]Darby L.F. and Fuhr J.P. "Investing in Economic Growth Broadband Network Tax Forebearance" Media Law and Policy 18(2008) 1-42.
[45]Sappington D.E.M.and Sidak, J.G "Incentives for Anticompetitive Behavior by Public Enterprises" Review of Industrial Organization, 22(2003b) 183-206.
[46]Tongue,K.A.. "Municipal Entry into the Broadband Cable Market: Recognizing the Inequities Inherent in Allowing Publicly Owned Cable Systems to Compete Directly against Private Providers", Northwestern University Law Review, 93, 3 (2001) 1099-1140.

In Ashland, AFN was unable to achieve build-out to the entire geographic area because the costs were too high.[47] Even though some people never received broadband access from the GON, they were nevertheless required to pay higher taxes to subsidize users. Cox states "When a service is not paying for itself, bureaucrats seek additional tax dollars to prop up their operations."[48]

Given the current economic environment, governments should be careful especially when entering into ventures that may cost taxpayers considerable amounts of money if they fail, especially if they provide little or no benefit to consumers. Government expenditures, as well as other goods, have an opportunity cost. Local governments must balance their budgets, and there is a practical limit to local tax levies. A better use of government revenues would more likely entail spending on essential services such as education, police and other services that may currently be facing budget cuts, rather than building and operating broadband networks.

A GON that faces financial difficulty has three choices:

(1) Sell at a loss;

(2) Continue using outdated technology; or

(3) Introduce new investment and better technology, which will in turn increase its costs and lead to a bigger deficit with higher prices, higher taxes or a cross subsidy from other products in the case of multiproduct producers.

Gifford and Walker argue, "Subsidizing municipal communications services leads to higher taxes, jeopardizes bond ratings and increases the cost of other municipal services. It may also have the unrelated consequences of entrenching inferior communications technologies."[49] City governments must be particularly vigilant stewards of dwindling taxpayer dollars in these difficult economic times. Unfortunately, the National League of Cities reports that the financial status of cities continues to deteriorate and that declining revenues have forced cities to decrease their workforce, infrastructure and key services.[50] City finance officers report that 87 percent of cities are having more financial difficulties in 2010 than 2009 and that concern about the fiscal health is the highest it has ever been in the 25-year history of the survey.

As a result, cities are laying off personnel, delaying or cancelling infrastructure projects and cutting basic services. In a report for the National League of Cities, Hoene and Pagano found, "The most common responses to prospective shortfalls this fiscal year, by a wide margin were instituting some kind of personnel-related cut (79 percent)."[51] Also, 25 percent of cities reported they planned to make public safety cuts.[52] Cities across the country including Camden, New Jersey and Oakland, California are laying off police officers.

In a June 2010 letter to Congressional leaders, President Obama stated that "the devastating impact of budget cuts at the state and local level that are leading to massive layoffs of teachers, police and firefighters."

Case Study: Burlington Telecom

Burlington Telecom in Vermont faces various issues. A state audit found that the GON has been violating its state license for the five years that it has been operating, and that there is no feasible way that it can repay its debts.[53] These debts include $17 million, which city officials confirmed were improperly borrowed from taxpayers. When the Vermont legislature approved Burlington Telecom, *The Associated Press* reported that the legislature "required that the venture be a stand-alone entity and that it not use taxpayers' money to support its operation."[54]

This $17 million debt contributed to Moody's downgrading of the city's bond rating, which will increase its cost of borrowing and give Burlington a negative credit outlook. Also, the telecom company owes $33.5 million to CitiCapital Advisors for lease of its equipment. The lease-purchase

[47]Aldous V. "Ashland Fiber Network Director Resigns" Mail Tribune, June 2, 2011.
[48]Cox B. "The Viability of Municipal Wi-Fi Networks" in "Not in the Public Interest – The Myth of Municipal Wi-Fi Networks", New Millennium Research Council, 2005.
[49]Gifford R.L. and Walker M.A. Glenwood Springs Residents Should say No to Municipal Broadband, Convergence Law Institute, April 2009.
[50]Hoene C.W.and Pagano. M.A., "City Fiscal Conditions in 2010" National League of Cities, October 2010.
[51]Ibid.
[52]Ibid.
[53]Gram, D. "Vt. Telecommunications Firm not Viable, Audit Concludes" Associated Press, Dec. 11, 2010.
[54]Ibid.

agreement was terminated in November 2010 as a result of Burlington Telecom's failure to make several payments. The company is trying to repossess the equipment and has filed a suit in federal court against the GON.[55]

Case Study: FiberNet

One example of a GON being sold at a loss is FiberNet, an Internet service provider built by the city of Marietta, Georgia in 1996. Eight years later, the city sold FiberNet for $11.2 million, a fraction of the $35 million that was spent to build and maintain it. At the time of sale, Mayor Bill Dunaway addressed the need to constantly upgrade the system stating, "That's why we should not be in the business - you have to keep reinvesting … [Its] negative cash flow once you consider reinvestment of capital."[56]

There are substantial risks involved when a government entity enters the broadband industry, where technology changes rapidly and constant reinvestment is required. Thus, municipalities should proceed with caution when advocating for GONs because such government ventures shift the risk from voluntary investors to involuntary investors (i.e., taxpayers).

Proponents of government-owned networks fail to acknowledge that there is often a failure to generate enough revenue to cover all the costs associated with building and maintaining the network – including operating and capital costs, and especially debt payments. If costs exceed revenues, then some form of network subsidization becomes necessary.

F. Stifling Innovation

Government-owned networks and their anti-competitive behavior can also decrease innovation.[57] Tuerck contends that "a government that uses its powers to drive private providers from the market only to impose its own monopoly power would remove the incentive for future advances, threatening the technological progress that has made the industry possible."[58] The Federal Trade Commission "Staff cautioned that government competition with the private sector may potentially stifle the development of innovative and competitive services in the private marketplace where government oversteps limits on its role in providing such service."[59]

Even if public enterprises were to provide some benefits, these must be weighed against the potential cost that they may impose on consumers. According to Atkinson, economists "believe that broadband markets are characterized by significant economies of scale (especially in providing 'last mile' services) and that increased competition, especially that promoted proactively by government, could result in excessive and duplicative investments, thereby lowering industry productivity, limiting network upgrades and ultimately raising consumer prices."[60] All of these can lead to less innovation on the part of private firms.

V. SOLUTION TO UNSERVED AREAS: PUBLIC-PRIVATE COOPERATION

The market can provide much greater consumer welfare than GONs. If market conditions exist where there is no financial incentive for a private firm to enter, it does not necessarily mean that the only answer to an unserved market is a GON. A private firm can be induced to enter through subsidization, allowing it to operate. Subsidies to help build broadband networks in otherwise economically unfeasible areas are an external source that, in most cases, will provide a reasonable less expensive and less-risky alternative to GONs.

Cooperation between government and private firms will, in most cases, maximize consumer welfare. A community should look at the reasons why a private firm may not be entering the market. Barriers could take the form of regulations, high franchise fees, right-of-way fees or taxes. Some states have given tax incentives for broadband, but this incentive is usually outweighed by the high tax burden. It is

[55]Briggs J. "Creditor's Lawsuit against Burlington Telecom could have Severe Impact" Burlington Free Press, Sept.11, 2011.
[56]"Marietta Selling City-owned Internet Company at $24 Million Loss," USA Today, July, 29, 2004.
[57]Sahr R.K. Prefiled Testimony Hearings on State and Local Issues and Municipal Networks: Hearings before the Senate Committee on Commerce, Science, and Transportation, 109th Congress, 2006.
[58]Tuerck D.G. "The Competitive Effects of Municipal Provision of Wireless Broadband"
Not in the Public Interest – The Myth of Municipal Wi-Fi Networks, New Millennium Research Council, 2005.
[59]Muris, T.J, Testimony, Director, bureau of Consumer Protection, Federal Trade Commission, Hearings on the Provision of Telecommunications and Information services by the Federal Government in Competition with the Private Sector; Hearings Before the House Government Information and Individual Rights Subcommittee of the Committee on Government Operations, 97th Congress, 1982.
[60]Atkinson R.D., "Economic Doctrines and Network Policy" Telecommunications Policy, 35, 5 (June 2011) 413-25.

ironic that the government strongly supports the concept of universal broadband, yet severely taxes telecommunications. One should not tax what one wants to promote. Therefore, one way to promote private broadband service in high-cost rural areas is the elimination of taxes and fees on sales, real estate, franchise and right of way.

One way to subsidize private entry into high-cost areas is through the provision of free right of way, at least for a specific period of time. The community, in essence, will not lose revenue by giving such an allowance, since – without some subsidization – firms would not enter. Of course, the community would not have received any right-of-way fees if there is no entry.

As such, Balhoff suggests that, "policymakers remain important partners in the broadband markets, generally by removing barriers to investment, crafting appropriate incentives and supporting the commitments to social goals. [...] However, the data suggest forcefully that municipal intervention in most competitive markets is a financially risky and potentially anti-competitive incursion that simply should not occur."[61] Thus, GONs should be used as a last resort.

VI. CONCLUSION AND PUBLIC POLICY RECOMMENDATIONS

Across the country, local governments are struggling to balance their budgets. Especially in times like these, taxpayers have a right to question how city and county leaders are spending their money. Lawmakers have a responsibility to make sure limited funds go to such truly critical public services as law enforcement, fire and rescue, education and infrastructure.

Many cities and municipalities have entered into the broadband market with disastrous results. Government should not overburden citizens with ventures that result in no benefit and actually harm consumers. Government-owned networks have fared quite poorly because they have neither the resources nor the expertise necessary to provide consumers with reliable state-of-the-art broadband connections.

Government failure is especially prevalent in markets like telecommunications, which are subject to considerable technological changes in a short period of time. The result has been GONs subsidies to keep them afloat or the sale of the network at a loss. In a dynamic market such as broadband services, government ownership has proven to be an abject failure.

Government-owned networks often receive an unfair advantage over private networks because they do not operate under the same tax structures and regulatory rules. This makes private providers reluctant to make investments in an area where the deck is stacked against them, which then results in lower tax revenues. In addition to scaring away potential revenues, GONs are inefficient and are often great wastes of taxpayer money. They are often duplicative of private commercial networks and almost always add to taxpayers' total debt burden.

Historically, the government has stayed out of telecommunication services provision, and most economists agree with this policy. The government should not be involved with broadband network ownership because markets are functioning properly. In unserved areas, public-private cooperation will lead to better results than GONs. Public policymakers should remove barriers to private investment and give firms the proper incentives to enter unserved markets.

[61] Balhoff M.J. and Rowe R.C., Municipal Broadband: Digging Beneath the Surface, Balhoff & Rowe, LLC, September 2005.

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