

Learning From Burlington Telecom

Some Lessons For Community Networks

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August 2011



Designing rules as if community matters

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Acknowledgments

Many thanks to the many people who made this report possible. A number of consultants and other experts helped piece together details and reviewed drafts of this paper for accuracy. My thanks to all as well as to my colleagues at ILSR that helped get this paper out the door.

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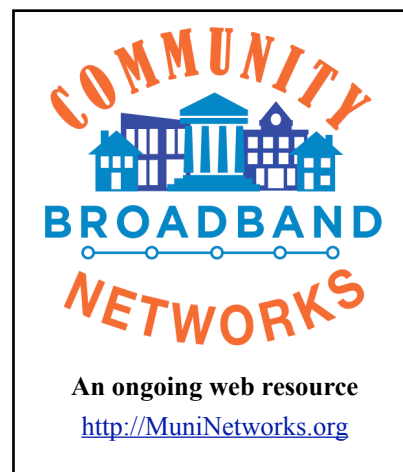
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Since 1974, the Institute for Local Self-Reliance (ILSR) has worked with citizen groups, governments and private businesses to extract the maximum value from local resources.

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Executive Summary

In little more than a year, Burlington Telecom went from being a hopeful star of the community fiber network movement to an albatross around its neck. The controversies surrounding it have encouraged cable and telephone companies to use it as Exhibit A in their case against communities going into the telecommunications business. However, most of those criticizing Burlington Telecom have very little understanding of what went wrong and how it happened. Examining what actually happened helps to explain how these problems may be avoided, as the vast majority of existing community networks have already done.

In 2007, ILSR issued a case study on Burlington Telecom. The report argued that Burlington Telecom was a model for how communities could build their own next-generation fiber-to-the-home broadband networks.

This report revisits and updates that report, analyzes Burlington Telecom's situation (for better and for worse), and extracts useful lessons for other communities pursuing community fiber networks.

In preparation for this report, ILSR examined many documents, including those available due to the investigation of Vermont's Department of Public Service. We interviewed many people from Burlington, including former BT employees, citizens active around the project, and City Council members. We discussed Burlington's situation with a number of others intimately involved in community broadband networks around the country and posed questions directly to a representative of BT.

Introduction

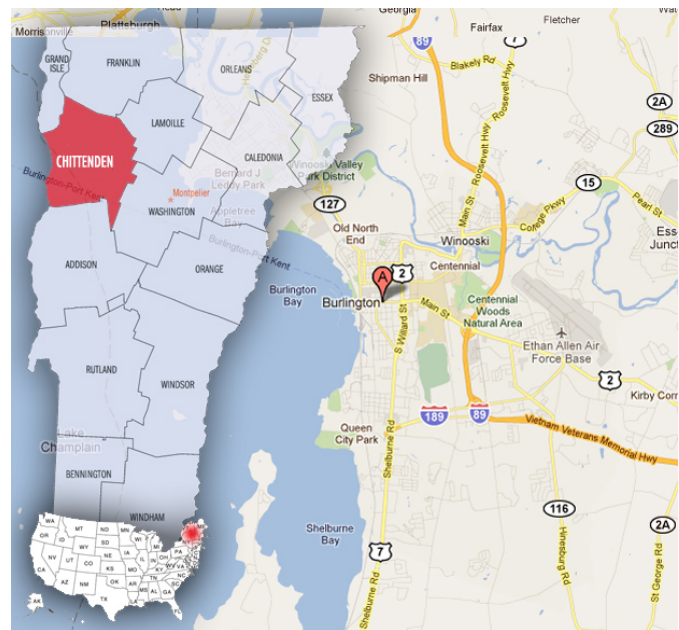
In November 2007, shortly after we published our case study on Burlington Telecom (BT), its creator and General Manager resigned after a disagreement with the Mayor of Burlington over the expansion of BT into communities surrounding Burlington.

At the time of Tim Nulty's resignation the public was told that BT was covering all its operating costs (not including debt payments or capital costs), was on track to complete its citywide build-out by 2009 and would break even in that time frame with between 4,500 and 5,000 subscribers.

In late 2009, it became apparent that Burlington Telecom had not only failed to meet its targets but had borrowed almost \$17 million from the City's "cash pool", the cumulative balance of city enterprises. BT's use of these funds for more than 60 days violated its Certificate of Public Good (CPG) issued by the State Department of Public Service as well as the City's Charter and Vermont state law.

In 2009, the state's Department of Public Service launched an investigation into

Burlington Telecom. Subsequently, several government agencies, including the FBI, began investigating the situation. In 2010, BT ceased making its lease payments to Citi, leaving the future of the network unclear. On June 29,



Burlington, Vermont

2011, the Chittenden County prosecutor announced he would file no charges, saying “I made the decision not to bring this charge because I cannot be certain that the state can meet its burden at trial.”¹

What had gone wrong? What lessons can we learn from Burlington?

This report sorts through the claims and counterclaims to shed light on these questions. There are some obvious answers: BT spent too much and failed to attract enough subscribers, particularly after Nulty resigned. After 2008, BT’s management strongly downplayed legitimate concerns over the worsening financial situation from the City Council and public.

Still, it remains unclear how BT could have gone into such deep debt given its present assets and what is known about its costs. At this time there is insufficient information available to make a determinative finding.

The Vermont Department of Public Service commissioned an audit that many hoped would make serious progress toward answering the financial questions. It remains unclear what the purpose of the audit actually was.

- If it was to prove that BT had violated its CPG by borrowing from the city’s cash reserves, little examination was needed. Everyone agreed it had.
- If the audit was intended to identify and analyze financial mismanagement it was poorly executed. It was not a forensic audit (which would entail a more meticulous investigation). Several network experts have raised serious questions about the auditor’s telecommunications expertise after reading the report.

Our own investigation begins by recounting the history of BT from its creation through 2007. Much of it is taken from our earlier report.

Overview

Burlington officials and activists had considered a community network long before they found a plan to build one. Dissatisfied with the second-rate services of the incumbent phone and cable companies, Burlington Electric Department (BED, a public power company) initiated a public-private partnership that was abandoned in 2001 when the private partner failed to fulfill its obligations. The City then tapped Tim Nulty to build Burlington Telecom, a city-owned fiber-to-the-home network. Nulty was a local Vermonter with a deep resume, having been Chief Economist of the US Senate Commerce Committee as well as US House Energy and Commerce Committee before overseeing telecom projects for the World Bank and becoming a telecommunications entrepreneur in Eastern Europe.



By mid 2003, BT had replaced the leased broadband and voice lines of the schools and city departments with city-owned fiber-optic connections while decreasing the City’s telecom expenses. The network was financed with a municipal capital lease from Koch Financial Corp² for \$2.6 million. When BT began expanding the network to residents and businesses in 2005, Koch Financial again provided the financing, adding another \$20 million to their arrangement.

In 2006, Bob Kiss became the new Mayor of Burlington. He appointed a new Chief Administrative Officer (Treasurer), Jonathan Leopold. Leopold and Nulty clashed repeatedly over a number of issues. Around that time, BT began connecting its first residential customers.

By August 2007, Burlington had arranged a third tranche of financing to continue building BT -- \$33.5 million from Citi Financial. This paid off the \$22.5 million in funding previously

received from Koch and left some \$10 million to finish the citywide buildout. To be clear, BT's total debt was \$33.5 million at this point.

Throughout 2007, with the full knowledge of the Mayor and others, Nulty was working with nearby towns on agreements to expand BT. Many of the towns had even worse access to broadband than Burlington. BT had built its head end with plenty of room for expansion. The plan called for towns to finance their own fiber-optic infrastructure and Burlington would provide the service.³

In September, 2007, BT announced that Burlington Telecom was "operationally cash flow positive" – which is to say that incoming revenues paid for operating the network but were not sufficient to cover debt service or the capital costs of connecting new users. Nulty forecast that with the Citi financing and the continued addition of 40-50 subscribers per week (their average at the time), they would break even by early 2009.

Around this time, the Mayor decided it was unwise to expand BT beyond city limits before all residents in Burlington had access. He told Nulty to stop the expansion process he had initiated. As a condition of its CPG, Burlington Telecom had agreed to complete a full build-out of the city within 36 months of turning on the first customer – a deadline of September 2009. This is a common feature of CPGs negotiated with cable operators to prevent them from focusing on wealthier neighborhoods while underserving low income areas.⁴

The Mayor's decision to halt the initiative to expand outside the city, coupled with ongoing tensions with the Mayor's office, led Nulty to resign, effective Nov 1, 2007.

Nulty then began work with a group of rural towns to build a FTTH network called the East Central Vermont FiberNet (EC Fiber). That network is currently building a pilot project they are financing themselves.

Chris Burns, formerly the Director of Outside Plant, replaced Nulty as General Manager. Leopold, to whom BT's General Manager (GM) reported, began taking a much stronger role in running BT than he had when Nulty was GM.

In April and May 2008, Leopold affirmed that the network was operationally cash-flow positive, while noting that revenues were not sufficient to make debt payments yet.⁵

After Nulty left, BT hired a consultant, Creative Telecom Ventures, to revise the business plan. This plan (frequently referred to as the Shanahan report), was made public in 2010 by Vermont's Department of Public Service. Shanahan's plan recommended that BT increase its focus on commercial sales and marketing since the build-out was nearly complete. The report recommended hiring a larger sales staff, something BT included in its next budget.

However, BT did not have an effective marketing campaign – Leopold had cancelled it when he took over, according to Director of Marketing Richard Donnelly. Donnelly was told to focus on up-selling, that is, expanding services to existing customers and managing customer service. Donnelly later made another effort to establish a marketing campaign aimed at residents but was again rebuffed by Leopold. For approximately a year after Nulty left, BT continued to add 40 to 50 subscribers a week on average, but the additions declined after the summer of 2008.

"The economy collapsed, freezing capital markets. Leopold chose to continue relying on cash from the City's pool to finance Burlington Telecom."

In 2008, Leopold began to seek a fourth tranche of financing, which would bring BT's total debt to \$45 million. \$45 million is considerably more than what most consultants estimate building a FTTH network in Burlington should cost.

Before any deal was finalized, the economy collapsed and capital markets froze. Leopold chose to continue relying on cash from the City's pool to finance BT. He later testified that he first became aware this practice violated Condition 60 of the CPG (requiring that BT

return any money borrowed from the City within 60 days) in November 2008.

The Mayor and his Administration say they notified the City Council of this violation and generally kept the Council informed of BT's situation. City Council members have strongly disagreed, noting that the Mayor had some incentive to downplay any problems with BT in the run-up to the March 2009 city elections (in which Mayor Kiss was reelected). The Board of Finance (composed of three City Council members, the Mayor, and Leopold) spent little time overseeing BT, in part because Leopold wanted to keep as much financial information as possible out of the public eye, where BT's competitors could access it.

In October 2009, BT's problems became public. The network had long ago exhausted the \$10 million from Citi financing and had accumulated by November 2009 a \$17 million debt to the City's cash pool. The debt to Citi (\$33.5 million) and to the cash pool (\$17 million) totaled over \$50 million.

The Department of Public Service, already in negotiations with BT to modify the citywide build-out date, launched an investigation into BT over these additional CPG violations. This process resulted in an audit (the Larkin report) released in December 2010.

Meanwhile, the Kiss Administration was floating an agreement from Piper Jaffrey to loan BT \$63 million using Certificates of Participation. The Administration pushed hard for the City Council to quickly agree to the terms, suggesting that BT could fail if the City Council failed to agree to it. Instead, the City Council appointed a Blue Ribbon Commission (BRC) to study BT's problem and recommend a solution.

A strong consensus of the Commission found that BT was too deeply indebted to break even given the size of its customer base. Pursuant to the BRC report, BT is currently being managed by a consultant, Dorman & Fawcett, that is restructuring its debt load.

The City is fortunate the Council did not simply ratify the Piper Jaffrey offer, however unlikely it is that Piper Jaffrey would have found willing investors to complete the deal. It would have

resulted in far greater debt while continuing to hide the problems of BT's management. During a Special Council Meeting on Burlington in January 2011, several commented that the City would be in a much worse position had the City accepted the Piper Jaffrey financing.⁶ The Mayor's Administration, on the other hand, has suggested on multiple occasions that BT's problems would have been significantly ameliorated by the Piper Jaffrey financing, a conclusion in conflict with the BRC findings.

In early 2010, BT ceased making payments to Citi as required by the municipal lease agreement and began to negotiate with Citi to amend the terms. But when Burlington failed to appropriate funds for the lease in FY 2011, the lease terminated. According to the City:

The lease states that the obligation to make lease payments is a current expense and is not to be construed as creating a debt of the City of Burlington in contravention of any constitutional or statutory limitation or requirement concerning the creation of indebtedness.⁷

Figure 1. Funding Timeline

- 2001 - Nominal costs from planning
- 2003 - \$2.6 million capital lease from Koch Financial
- 2005 - \$20 million additional from Koch
- 2007 - \$33.5 million from Citi Financial, pays off Koch, leavin a balance of \$10 million
- 2008 - Leopold unsuccessfully seeks fourth tranche of funding, \$11.5 million, markets freeze. BT begins drawing from city general funds
- 2009 - BT \$17 million debt to City becomes public
- 2010 - Kiss floats \$63 million loan from Piper Jaffrey, is not passed by Council
- 2011 - Burlington ceases lease payments to Citi.

By canceling the lease, BT no longer owes \$33.5 million to Citi. However, Citi owns the vast majority of the network assets. Burlington owns the building in which BT's head end operates, but all the fiber and electronics belong to Citi. The City has suggested it will simply return the electronics to Citi (replacing them with gear supplied by a future partner, allowing the network to continue operating). However, Citi does not appear to have agreed to this solution and has given few indications how it will resolve the matter. At present, it seems that Citi is the entity that will decide the future of BT – but no one knows when. BT is just another non-performing asset to Citi, not a high priority.

The Kiss Administration has said that Dorman & Fawcett are negotiating with potential future partners of BT who would replace Citi's equipment to keep the network functioning, but Burlington's authority to do so is dubious. Any entity wishing to take over BT will likely have to come to an agreement both Citi and the city of Burlington, with the City wanting to recover the \$17 million in debt attributed to BT.

Since all of the problems around BT have become public, its credit rating has been downgraded and its image is not helped by the all the current uncertainty over the future of the network. Additionally, the constant negative press and uncertainty has resulted in a drop to 4,000 subscribers as of Jan 2011, down from a high of approximately 4,800. After so many years in operation, the network should have had almost twice as many subscribers. Further declines in subscribers greatly lessen its value to any potential partner, which is why supporters have called on residents and businesses to subscribe in greater numbers.⁸

As a condition of the Certificate of Public Good from the Department of Public Service, BT agreed to completely build out the network by September 2009. Depending on how one defines the build-out, they are between 85% and 93% completed.⁹

A problem with BT fulfilling its commitment to offer universal service is that a number of scattered blocks and neighborhoods require

special and costly attention. Each of these areas has unique circumstances, mostly due to utilities having been recently moved underground. Estimates to pass all these potential subscribers range from \$3.5 to \$5.5 million. Plans to complete the build are part of the ongoing negotiations the City is having with potential partners to resolve BT's problems.

Debt Discrepancies

Perhaps the most curious, but least investigated aspect of BT is what the \$17 million (funds from the City cash pool and in excess of the \$33.5 million from Citi) was actually spent on. As of now there is no clear public explanation, just some vague statements that the capital costs were higher than expected. Most everyone has accepted that BT simply spent too much, but experts closely reviewing the finances have been puzzled. We hoped the an audit (the Larkin Report) would answer these questions, but it did not. The report took far longer to complete than expected and included numerous errors and omissions that left most of its conclusions in doubt.¹⁰

“BT still spent far more than it should have in the years following Nulty's departure and some question how BT could have even spent that much.”

The only conclusion we can say with certainty regarding the \$17 million is that Burlington's citizens deserve a proper audit to learn how their money was spent. There are serious disagreements between Nulty's claims about BT's financial position when he resigned and competing claims from the Mayor's Administration.¹¹

Tim Nulty has consistently argued that the network was on path to financial solvency after the Citi refinancing. In August 2007, the Citi money paid off previous debt and left Burlington Telecom with some \$10 million in the bank (of which \$1 million was part of a loan reserve and could not be touched).¹² On

September 12, 2007, WCAX covered BT's celebration over connecting its 2000th subscriber, noting that revenues now covered operated expenses.

Here is where the financial thicket becomes impenetrable and requires a forensic audit to provide a definitive paper trail. We have included an appendix to detail what information is available. The short explanation is that Nulty and the Kiss Administration disagree about how much was spent prior to Nulty's departure. It should be noted that even if Nulty had left BT in the worst possible position, BT still spent far more than it should have in the years following Nulty's departure. Some question how BT could have even spent that much regardless of BT's state when Nulty left.

"The Board of Finance did not know what they did not know -- they did not know what questions to ask and were insufficiently curious about BT's problems."

Twenty six months after having cash in the bank from the Citi financing in the summer of 2007, BT was indebted to the City's cash pool by some \$17 million and was far below subscriber targets. Of this total, less than \$3.5 million was paid to Citi for interest. The capital to connect approximately 2500 subs over this period should not have exceeded \$4 million. According to various statements from Leopold and the Mayor, the network was mostly operationally cash flow positive over this period. The network pass (the wires up and down streets that can then be connected to homes and businesses) was largely finished when Nulty left, leaving the bulk of the \$17 million debt unexplained.

Though the FBI joined the investigation of BT in November 2010, nothing seems to have resulted. We do not know, and may never know, exactly how the \$17 million was spent but we can draw a variety of other lessons from the network saga.

Transparency / Oversight

One might wonder why the City Council and public were so caught by surprise in 2009 when alerted to the \$17 million debt. Community networks generally have strong public oversight and requirements to operate in a transparent fashion. For years, Burlington's auditors warned that BT did not have proper internal controls to ensure it was adhering to its CPG but no one fixed the problem (though they did resolve other problems noted by the auditor).

The City Council has argued it was cut out of the loop by the Mayor's Administration but the Mayor countered that City Council was fully appraised of problems as they occurred.

As an outside observer, I was surprised at the transparency change that occurred in BT after Nulty resigned. Nulty was quick to share information and had an open relationship with the citizen oversight boards.¹³ After he left, BT became much more secretive, justified as an effort to lessen the advantages of private incumbents who could study BT's plans and budgets. Regardless of the reason, wisdom, or justification, BT became quite opaque, to the point that employees were no longer allowed to speak to me.

Budget documents illustrate the increasing drive for secrecy. In the 2009 fiscal year city budget, Burlington Telecom's revenues and expenses were broken out at the subsidiary level but by 2010, the only numbers available about Burlington Telecom were the total budgeted revenues and expenditures with no detail. The intense focus on secrecy may have distracted BT from its core mission. While evaluating BT for the Blue Ribbon Commission, Hiawatha Broadband Communications (a company that builds and operates fiber-optic networks) called on BT to "put aside its preoccupation with legal and public scrutiny and re-focus its efforts on building a solid business."¹⁴ Becoming so secretive may have ultimately caused more problems for BT than its competitors.¹⁵

The increase in secrecy was compounded by a Board of Finance ill equipped to oversee BT's

management. The City Council's Board of Finance included three City Council members, the Mayor, and the Clerk-Treasurer. However, while BT was getting into financial trouble, the only person on the Board of Finance with any real financial expertise was Leopold – the person running BT. Few would suggest this arrangement conducive to oversight.

To steal a line from Donald Rumsfeld, the Council members on the Board of Finance did not know what they did not know -- they did not know what questions to ask and were insufficiently curious about BT's apparent problems. To top it off, the City's auditor had not presented any of his audits to the Board of Finance since before the Kiss Administration took office.¹⁶ BT was publicly running a deficit in the City's budget, but Leopold and Burns explained that it was a result of past errors and was being corrected.

When the Council did have questions that required digging into BT's numbers, Leopold made it difficult. Karen Paul, a new member of the Board of Finance in 2009, was only allowed to read many of the documents in Leopold's office.



Karen Paul

The Mayor's administration has published a list of all the meetings in which BT's problems were disclosed to the City Council and the Board of Finance.¹⁷ But Council members report being intimidated when asking questions of Leopold or the many lawyers accompanying him. City Councilor Nancy Kaplan related one particular experience from an executive session discussing BT. She felt ridiculed after asking if the City was violating the law with transfers from the city cash pool to BT.¹⁸ Many of the BT discussions occurred in executive sessions, leaving Council members unable to get outside opinions to verify Leopold's statements without violating the rules.

"Burlington Telecom has a technically exceptional network."

In short, the oversight was extremely lacking. The Mayor's Administration was not keen to share information with the City Council, which itself was ill-equipped to evaluate anything shared by the Mayor. And still, BT's competitors were able to gather more information about BT than they had to reveal about their own operations.

While examining BT's mistakes and challenges, it is important to also examine some of the positive contributions BT created for the community.

Benefits From BT

We have categorized positive contributions from the network into several subsections, including next-generation networking, economic, and intangible benefits.

Next-Generation Networking

If there is one point on which the many consultants and managers of BT have agreed, it is that Burlington Telecom has a technically exceptional network. The term commonly used is "fiber-rich," which is to say that BT was over-engineered to be especially future-proof:

The people who planned and built Burlington Telecom have provided Vermont's largest city with a marvelous asset that is, as evaluators have said, superior to any other communications network in place in the community – superior, in fact, to most in the nation.¹⁹

Some rather ignorant outside observers have claimed Verizon's FiOS is superior to BT merely because FiOS advertises faster speeds. From an engineering perspective, the BT network is superior. This point warrants some attention as just about every fiber-to-the-home network claims to be future-proof. That is true, but some are more so than others. Some network designs result in multiple households (rarely more than 32) sharing a fiber strand at some point in the network. Though it is true that the capacity of that fiber is effectively limitless, the BT network design is a modified "homerun" network, which means that each subscriber

has its own fiber strand back into the distribution hut. This design allows more flexibility for the future, should advances in technology make it less desirable to share traffic from multiple households.

Further, BT's head end is capable of supporting 100,000 users, five times as many as it would serve even if all of Burlington subscribed. Some might question the wisdom of planning for such a large capacity, but the economic reality is that modestly increasing the size of the head end increases the costs very little while allowing for vastly higher revenues. Whether BT ever expands or not, it has space it can lease to others who may want to build networks nearby. And most of the communities around Burlington are stuck with even worse options than Burlington had when it started, making them eager for more choices in these networks.

While both the fiber-rich design of the network and its expansive head end added some costs to the network, neither was responsible for the financial problems BT later encountered. Their additional costs were small relative to the eventual cost overruns.

Economic Benefits

Though it may be counterintuitive to suggest that BT is anything other than a financial problem for the City, the network did produce considerable economic benefits to the city prior to the debt incurred by mismanagement.

BT, as with other city departments like the electrical department, had to make payments in lieu of taxes (PILOT). These payments are based on the value of the enterprise and offer a devastating rebuttal to those who claim community broadband networks unfairly compete with the private sector because they do not have to pay taxes.

	2008	2009	2010	Total
Comcast	\$27K	\$28K	\$38K	\$93K
FairPoint	\$65K	\$68K	\$72K	\$205K
BT	\$440K	\$173K	\$224K	\$837K

Table 1

Figure 2. Value of BT's Services to City Departments

BT was charging the city approximately \$600,000/year for 16 buildings with 1Gbps connections and 20 buildings with 100Mbps circuits. Prior to BT, no providers were offering these connections. The price of a DS3 (45Mbps) would be something like \$2500/month (probably more, averaged from 2004-2010). Assume the 100Mbps circuits are replaced with leased DS3's.

20 buildings x \$2500/month x 12 months/year = \$600,000/year.

That leaves the 16 buildings with gigabit circuits. Again, such circuits were not privately available, but by comparing where such circuits are available, we believe \$8,000/month is a fair estimate of the cost to lease such a circuit in Burlington.

16 buildings x \$8,000/month x 12 months/year = \$1.5 million/year

After building BT, Burlington was paying \$600,000 for more than \$2 million worth of telecommunications, saving almost \$1.5 million dollars every year for 6 years.

BT was making payments to the city far in excess of the taxes paid by FairPoint and Comcast combined. In the three years from 2008 to 2010 BT paid Burlington some \$500k more than Comcast and FairPoint combined (see Table 1).

BT's first phase was financed by replacing overpriced leased lines from the incumbents with lower cost, higher capacity, and more reliable fiber connections. BT charged the city its internal cost of providing the services, with no markup. The Larkin audit suggested that BT was in the wrong for not charging "market rates."²⁰ As BT was the only provider offering 100Mbps and gigabit services at that time, there was no market on which to base a price. However, we can do a rough calculation of the value BT services created for the city over this time (see Figure 2).

Whether or not BT *should* have priced a margin into its charges is debatable – and a debate that should be public knowledge in every community that creates its own network.²¹ The reality is that every other provider with which the City might contract for telecommunications will include a margin, so it is certainly reasonable for an entity like BT to do so. However, the margin should be substantially less than the norm in an industry characterized by monopoly. In 2010, BT decided to increase the charges to city departments to 90% of the fair market value of the service.

Beyond the direct savings to the City Government from BT's high capacity, low cost connections are a variety of indirect savings to the community from the lower costs created by BT's entry into a broadband duopoly and cable monopoly, as well as the community benefits gained from the impact of their telecom bills being spent locally. For example, every time a subscriber called BT, she spoke to someone employed locally, unlike those who call Comcast or Fairpoint support.

“Marketing Director, Richard Donnelly, noted that BT bent over backward to help any business. This practice was not only to develop a good reputation, but also because BT's mission was to drive ‘economic prosperity’ for the community.”

Most communities have a telephone/cable duopoly. A third market entrant, BT in this case, often changes the equilibrium and results in lower prices (at least temporarily while incumbents cut prices to try to stop subscribers from shifting to the new provider). In this case, Burlington residents have benefited from lower prices due to two factors: BT's standard prices were less expensive than non-promotional rates from incumbents (what most people pay most of the time) and incumbents charged less in response. A typical tactic of incumbents in response to competitive pressure is to run promotional periods indefinitely rather than lower their published non-promotional rates.

Thus, as is common with community broadband networks, the indirect savings to the community touch almost everyone regardless of whether they sign up to the new network. According to Samuel Osbourne, who does market analyses, these savings in Burlington add up to approximately \$1 million in savings in aggregate for the community each year.

“Local businesses thrived with connections from BT that proved faster, more reliable than incumbent providers.”

Many local businesses thrived with connections from BT that proved faster, more reliable than incumbent providers. Faster speeds (especially upload) are great, but reliability can be a far more important metric than simply faster. When small local businesses needed attention, they got it from BT who saw them as an essential part of the community rather than simply another customer.

For instance, Union Street Media, a successful small business in Burlington approached BT before the network was officially live and asked to be hooked up – Verizon's prices for their needed connectivity were far too high. BT hooked them up with faster speeds at far lower prices – and they were not the only ones. BT's former Marketing Director, Richard Donnelly, noted that BT bent over backward to help any business. This practice was not only to develop a good reputation, but also because BT's mission was to drive “economic prosperity” for the community.

In a January 2011, public meeting about Burlington Telecom, several people running small businesses testified that BT was essential for them.²² Though many who testified were angry about how the network has been managed, they were extremely pleased with its services.

Intangible Benefits of BT

Prior to offering citywide services, BT convened focus groups to determine the community's priorities in customer service. The groups overwhelmingly called on BT to not act like a "distant mega-corporation."²³ BT followed their advice and provided superior customer service, avoided fine print charges (cable modem charge, for instance) that increase the cost of service above the rate advertised, and avoided promotional pricing that ballooned after a number of months.

When installing new services, customers could have BT pay for a new electrical outlet (helpful for that new big TV or computer). BT's customer service was quite responsive (though it reportedly declined when morale suffered under the new management after Nulty resigned). In most community networks, this value translates into stronger support from the community, but BT failed to capitalize on it. Nonetheless, a dedication to serving the community has an intangible value that massive incumbents do not provide.

Additionally, Burlington offered a greater variety of channels to the community than does Comcast. For instance, BT carried the Al-Jazeera English network (AJE) – which became locally controversial in 2008. Some wanted it removed due to its relationship to the more controversial Al-Jazeera channel but most Burlingtonians wanted to make their own decision to watch or not in their homes rather than having BT decide no one could watch it. Consequently, Burlington was one of three cities in the US with AJE access in January 2011– allowing them far greater and in-depth coverage of the fascinating Egyptian protests leading to Mubarak stepping down.



Detailing the benefits above in no way suggests that they negate the additional \$17 million in debt that BT is saddled with. The point is to

reflect on BT's actual record. Indirect contributions to the community must be included in the conversation as the City decides how to solve with BT's problems. The PILOT fees and direct savings to the City total almost \$10 million over six years and the community has saved some \$3-4 million in aggregate since BT started offering residential services.

BT Challenges

The vast majority of community fiber networks have succeeded, making BT's problems highly unusual. However, it bears remembering that overbuilding massive companies like Comcast is quite difficult for any entity; this is why so few in the private sector try and even fewer have succeeded. In fact, it sometimes seems that bankruptcy is a natural part of the lifecycle for private telecommunications companies. Incumbents – particularly national behemoths like Comcast – have almost all the advantages, something we documented in *Breaking the Broadband Monopoly: How Communities Are Building the Networks They Need*.²⁴

“The delays and legal fees (by incumbents) slowed BT's momentum and fundamentally disrupted the business plan.”

BT began its citywide build-out when the two incumbent providers were both weak – the cable company, Adelphia, was hated by the community and bankrupt (and yet did not “prove” that entire privately-owned network paradigm is a failure). Verizon was focused on areas of the country with higher potential for profits and trying to offload all of its New England operations. Nonetheless, Adelphia delayed BT's planned start of offering residential services by challenging its Certificate of Public Good in Vermont's Department of Public Service. The delays and legal fees slowed BT's momentum and fundamentally disrupted the business plan – which is, of course, the reason incumbents are quick to issue challenges and lawsuits they do not expect to win. The delay is the win.

Unfortunately, BT also faced delays when Burlington's Electric Department took longer than expected to get the poles ready for the fiber cables in late 2006.

BT's services quickly captured 20-40% of the subscribers in many neighborhoods when it became available. As most overbuilders learn, the first 20-30% of subscribers come easy because they either hate the incumbent or love a local option. Getting higher take rates require savvy marketing. Massive companies like Comcast can saturate the market with ads – as it did after taking over Adelphia's network – filling airwaves and mailboxes with its

Boosting Take Rates: A Lesson

MAKING THE SWITCH - Discerning what exactly will motivate people to switch to a new network is all but alchemy. Obviously, the price is an essential factor, which is why incumbents offer short-term deals to keep subscribers away from a rival network offering better prices over the longer term. We repeatedly see situations where a community network lowers the average household triple-play prices by more than \$30 merely by introducing more competition into a duopoly.

Rather than being satisfied with these savings (particularly in difficult economic times) people take short-term lower prices from the existing cable company, which has already amortized its network and can subsidize its predatory prices with fat margins in nearby non-competitive communities, in order to save an additional \$5 or \$10 from the community network (which has higher costs in the startup phase and no ability to cross-subsidize).

The best response to this situation appears to be an educational campaign ensuring that everyone recognizes the savings resulting from the community network's effect on the broadband market. They should understand that their choices have consequences – if the community network cannot generate enough revenue to continue, it will struggle and may require infusions of tax dollars, depending on the financing model used. Should the community network disappear entirely, people should expect their bills to return to the duopoly levels.

promotional offers. Comcast was free to cross-subsidize operations in Burlington with the profits from its non-competitive areas can also send sales teams door-to-door to hawk deeply discounted packages that BT cannot match.

Whereas Comcast can fund its own upgrades, BT was required to rely on outside funding as a result of Condition 60 in its Certificate of Public Good. That BT would go on to grossly violate the condition does not change the fact that it was structurally disadvantaged relative to its competitors. Vermont law does not allow communities enough flexibility, forcing them into financial markets to fund infrastructure even when that system is frozen, as it was during the financial meltdown.

By virtue of being a publicly owned enterprise, and despite the increased secrecy of its management from 2008-2010, BT was considerably more transparent than its private sector competitors. Though no BT employees can attend Comcast's planning meetings, demand details of their staffing level, or view the incumbents' planned budgets, BT's meetings and documents were largely public (though to a lesser extent after Nulty left). Comcast had greater access to BT's plans than BT had to any of its competitors, a significant disadvantage.

Few outside the cable world understand the complicated world of channel contracts that allow cable networks to offer television channels like ESPN, Discovery, etc. Small providers like BT frequently struggle to get affordable contracts with channel owners. While many small networks historically joined the National Cable Television Cooperative (NCTC), BT's use of IPTV technology complicated that option. As a result, BT had to negotiate its own contracts, a lengthy and expensive process that inevitably ended with BT paying considerably more than Comcast to offer the same channels. In some cases, BT has not been able to negotiate a contract, leaving a hole in their channel lineup. For instance, while many Burlingtonians love hockey, BT has not been able to form an agreement with NHL Center Ice (offering many otherwise unavailable NHL games). When Comcast negotiates with such channel owners, its unrivaled market power allows it to strike

deals that channel owners refuse to make with smaller providers.

BT rightly notes that some people also refuse to subscribe as long as it carries Al-Jazeera English, an important point. We have regularly seen those hostile to community networks use a divisive issue, like AJE, to turn others against the network. In any community, somewhere from 10-30% of residents may be inherently hostile to public ownership for philosophical reasons.

Finally, BT was limited to providing services only in Burlington while its competitors can spread their costs across a far wider territory. The pressure for BT to complete its citywide build-out within 36 months of starting was an “aggressive” schedule according to the DPS when approving the CPG. BT had to focus on building within its political boundaries despite the reality that the technology and economics of building these networks rarely optimal within these constraints.

There is a reason very few communities have a meaningful choice in broadband. Telephone and cable networks were mostly created with monopoly territories to ensure success. Incumbent phone and cable networks have significant advantages, mostly due to scale but also because they long ago amortized the costs of building the networks. Even when communities build a network vastly superior network technologically, they have to surmount high hurdles to break even. This reality reinforces the point that communities only choose to build these networks when they have to; most would prefer the private sector to offer universal, fast, affordable, and reliable access to the Internet.

Even as we document the mistakes BT made, we should be reminded of the obstacles that all public fiber networks will face – obstacles that the vast majority of them have, through grit and ingenuity, managed to overcome.

“The dramatic decline in new subscribers... was a direct result of BT’s marketing failure.”

Lessons Learned

BT’s problems offers a teachable moment to other communities to avoid similar mistakes. In this section, we explore the lessons learned from the situation in Burlington.

Marketing

The mantra of a new telecom entity must be: take marketing very seriously. Local governments and nonprofits typically have little experience marketing competitive services. Despite the few competitors in broadband, each provider is fiercely competitive. Hire someone with experience, who can create a brand, and understands advertising jujutsu. Understand the advantages you have as the *local* provider.

Community networks have to make smart decisions regarding marketing. While little marketing may be necessary in the early years when installers have their hands full connecting all the early adopters and incumbent-haters, a proper marketing campaign is essential to get the next wave of subscribers. The dramatic decline in new subs a year after Nulty’s resignation may have been the single largest source of BT’s problems – and that was a direct result of BT’s marketing failure. Some in Burlington have suggested that new residents in 2008-9 could easily not have known they had a choice beyond FairPoint and Comcast.

Massive companies like Comcast certainly have an advantage in terms of buying power and marketing staff, but they also have the well-earned disadvantage that most Americans hold them in extremely low regard after years of rate increases and poor customer service. Under Nulty, BT developed a second-level marketing plan in consultation with the citizen advisory committees. As the network was being built, the marketing plan consisted largely of word-of-mouth and signing up the many who early adopters that already knew of it. The next phase, reaching out to a different segment of the market, was scheduled to commence in late 2007 but the new management cancelled the campaign after Nulty resigned. BT then turned its focused to

increasing its ARPU rather than maximizing the number of new subscribers.

BT continued adding new subscribers as they turned on new neighborhoods, but never enacted the necessary marketing campaign to succeed in the long term. In the January 2011 Special Council Meeting on BT, Stephen Barraclough – the representative of Dorman and Fawcett – said “BT has not been as focused on sales marketing and customer sales as it needs to be.”

Maintaining Local Support

Nulty worked with the citizen advisory panels (a group of volunteers dedicated to helping the network succeed and ensuring BT listened to the community) but Leopold and Burns effectively dismissed them. Richard Donnelly argues that community networks should “strategically deputize” the people most excited about the network as part of marketing. A simple example is Chattanooga, which supplies customers with yard signs saying “We’ve got the power! EPB Fiber-Optics.”

Part of getting people excited is making the most of the incredibly capacity offered by next-generation networks -- a comparative advantage. BT marked an interesting transition between early community fiber networks and a second generation. BT was one of the first to rely on IPTV technology and to offer only symmetrical Internet access plans (where upload speeds are just as fast as download speeds). Later networks (including Wilson’s Greenlight, Lafayette, Chattanooga, Monticello) have all offered symmetrical high-capacity connections, often starting at 10Mbps or higher. In a world of misleading “up to” advertisements from asymmetrical cable and DSL networks, one key lesson for community fiber networks has been to open up the pipes and offer connections far faster than the competition. The all fiber architecture offers the competitive advantage of much higher capacity and reliability – advantages that do

“BT’s most surprising failure was its... unwillingness to harness the enthusiasm of its strongest supporters or otherwise capitalize on its status as the local, pro-community choice

not assist marketing if not adequately communicated to potential subscribers. Even if few take the highest tier, there is a value to securing a reputation as the highest capacity network in town.

Perhaps BT’s most surprising failure was its post-Nulty unwillingness to harness the enthusiasm of its strongest supporters or otherwise capitalize on its status as the local, pro-community choice. BT forgot that branding itself as “your” network must be a critical part of marketing when a small entity is up against a megacorporation like Comcast. This calls for creative solutions and meeting people where they are. Massive companies will dominate the airwaves and fill mailboxes with glossy mailers but communities need a more personal approach. In North Carolina, Wilson’s Greenlight network used a truck at fairs and public gatherings to demonstrate the superiority of their technology and show how it can be used. The UTOPIA network has an RV they use for similar purposes.

Nulty’s philosophy was to first serve the residential customers, who ultimately owned the network, and to maintain a high level of customer service to keep them happy. He eschewed a focus on the commercial clients because of the additional expense in attracting them. Any revenue from big commercial clients would be gravy on top of a network that he predicted would be sustainable after hitting some 5000 residential subs.

Commercial Challenge

When Nulty left, BT’s top priority ceased being residential subscribers. Under Leopold and Burns, BT turned its focus from the low-ARPU (Average Revenue per User) residential market to the commercial market – where clients are far fewer but generate much higher revenues and fat margins. Conventional wisdom may lead community networks to spend considerable resources to gain the fat margins of commercial subscribers, but BT’s experiences reveal the downside in trying to woo such clients. Though BT only competed against Comcast and FairPoint for residential customers, it

competed against at least six other providers vying for commercial clients. BT was the newcomer, and big commercial clients rarely want to be the first to switch to an unknown entity for essential services.

Securing the big clients takes many meetings to build trust. It requires crafting special products, and sometimes necessitates buying out an existing long-term contract with a rival provider. Richard Donnelly recommends that communities should focus first on a few influential businesses that will serve as examples to others – once again, community fiber networks need to harness their most excited community-oriented customers to aid in the marketing effort.

The difficulties and rewards of going after the big fish vary from market to market. In some areas, a community fiber network may be the only provider with a fiber-optic connection while other cities may have multiple providers with their own fiber and a history of providing commercial services. Burlington does not have an especially large number of potential high margin commercial customers, leaving BT in a difficult position when it effectively ceased adding new residential customers

A special challenge related to marketing is simply making services available to apartment buildings (MDUs). Building owners may ask what is in it for them to allow a new network

operator into the complex and may have already signed exclusivity agreements with existing providers. The fact that the FCC has decided those agreements are unenforceable (a decision upheld by the Circuit Court in 2009) does nothing to change the fact that MDU owners have no requirement to allow a new network in the building.²⁵ These are situations where community networks must take advantage of its good standing in the community, particularly among MDU residents who could organize other tenants and demand the MDU owner welcome the new network.

Marketing also involves managing expectations. Community network investments are essential infrastructure and must be evaluated as such. Though the manager of the network may be under great pressure to break even within a set time period, the community must be reminded of the reasons for creating the network. We have yet to find a community where the first goal was to generate net income for the general fund. The first goal is almost always economic development. Many other goals, including creating competition, increasing educational opportunities, and enhancing the quality of life typically rise above making a profit. However, critics will focus on the balance sheet, so someone must remind the community of the motivations behind the investment and offer a balance sheet that includes intangible and indirect benefits of a community network.

“Many other goals, including creating competition, increasing educational opportunities, and enhancing the quality of life typically rise above making a profit. However, critics will focus on the balance sheet, so someone must remind the community of the motivations behind the investment.”



Photo Courtesy of [Don Shall on Flickr](#)



Church Street, Burlington Vermont, Courtesy of [redjar on flickr](#)

Pricing

The Larkin audit, as well as others examining BT have suggested they priced their services too low. Unfortunately, that sentiment is too general to be helpful. Did they price individual services too low or were the bundle prices too low? The general consensus seems to be that their ARPU was too low – a result of too many customers taking only one service. The price of their triple-play bundles, starting with a standard \$100/month package, seem to be right on the mark – and less expensive than the competing non-promotional pricing from Comcast.

Public networks need to understand the sad truth that despite consumer protestations against promotional pricing (introductory rates that increase after 6 or 12 months), they respond strongly to it. BT decided not to offer promotional pricing. That was in keeping with its philosophy of straight shooting and

transparency with its customers, but it also gave its competitors a market opening that they exploited. BT should have frequently reminded residents why BT does not offer those balloon contracts, integrating that reminder into their marketing efforts.

BT's offering of extremely inexpensive pricing for a single service like telephone hurt its sustainability. The cost of connecting a new customer was above \$1500 for BT, so it needed to generate much more than \$20 in revenue/month to pay off the connection in a reasonable timeframe. Over time BT stopped advertising the single services and strongly encouraged customers to subscribe to bundles.

These decisions may be difficult and possibly unpopular, so the reasoning should be available and accessible to the public. If the public wants those services so badly, it will have to accept

waiting additional years to pay down the network investment.

In a related vein, BT appears to have had some of the same problems encountered by other community networks but rarely discussed openly: how to deal with delinquent payments. Particularly in areas of high churn (like college campuses), a significant number of customers will disappear without paying their bills, sometimes leaving hefty video-on-demand charges that the network must then cover. There may be no good solution for this problem, but community networks should be prepared to deal with it.

Structure

Burlington Telecom's governance structure was unlike most publicly owned networks. As a start-up enterprise, BT was originally placed under the authority of the City's Clerk-Treasurer (Leopold's position). Rather than reporting directly to the Mayor, BT reports to the Clerk-Treasurer, who reports to the Mayor. This arrangement was expected to change when BT left the start-up phase but the City Council has been unable to muster the necessary majority to enact that change.²⁶ While the position of Clerk-Treasurer or Chief Administrative Officers requires a strong and varied skill set, those skills may not translate into making key decisions over a telecommunications enterprise.

For a variety of reasons, community broadband networks should be firewalled off from the day-to-day politics of the local government. Community fiber networks are often a part of established public power utilities that have established independence from those pressures. Unfortunately, BT appears to have been subject to such pressures (for instance, some have alleged that BT's problems were downplayed to aid the Mayor in the 2009 election). Regardless of the merits of that charge, BT was too close to politics.

Networks should not be able to hide their numbers from elected leaders but should be invested with some autonomy from ordinary procurement and personnel policies – all of

which requires a trusted and capable general manager trusted by the public.

Rather than focusing entirely on filling community needs, BT spent long months to create a civil service position for a salesperson operating on commission – a job with little precedent in local government operations. BT had to make a case to the treasurer who would take it to the Board of Finance, where more questions were raised. When the position was finally approved, yet another process was initiated to decide on an appropriate salary. If a position changed, BT would have to change the official job description and go through another process to change the salary.

“A great business plan offers little help to an enterprise unable to adapt to changing circumstances.”

While BT had too much autonomy by virtue of the slack oversight of the City Council, the civil service and procurement rules of the City left BT insufficiently entrepreneurial. A better solution may have been public ownership via a separately municipally owned corporation governed by a board with some measure of independence from City Hall while remaining accountable to the community.²⁷

These problems are not unique to Burlington – many of the successful community networks around the country have successfully dealt with similar constraints. However, it does explain why some communities are considering an arrangement where the City would own the network assets while forming a nonprofit to offer the services.

Customer Service and Staff Size

More than a few networks have struggled from the effects of hiring more employees than the revenues can support. There is a difficult tradeoff between running a tight ship fiscally and ensuring subscribers have the best possible experience. This balance is particularly difficult for a new community fiber

network as new subscribers are the ones mostly likely to need customer service help!

Nulty explicitly erred on the side of offering better customer service – going so far as to tell customer service representatives (CSRs) they could leave the office to fix a problem if they could not resolve it remotely. In the early years, they found this dedication to solving subscriber problems burnished their reputation and increased their support from the community.

But this customer service commitment is a two-edged sword; experts examining BT have all suggested it was overstaffed, increasing the time required to break even. That said, the additional costs of staff and benefits would have added costs on the order of hundreds of thousands of dollars, not the millions that BT racked up in unexpected debt. While overstaffing may have delayed the break even date, it was not responsible for the excessive debt that accumulated.

After Nulty left, BT hired more sales employees on the recommendation of the Shanahan report. The additional staff appears to have made the situation worse. BT's revenues continued to be too low to support all the employees – BT had too many CSRs and too many managers. In 2010, HBC's report to the Blue Ribbon Commission called for consolidating the sales and customer service under one manager. The key lesson: Community networks should discuss appropriate staffing levels and organizational structure with community networks that have already been there.

Depending on local circumstances, community networks may have skewed salaries for different workers. In BT, the CSRs had salaries higher than typical CSRs in other local jobs. In other communities, civil service rules keep the salaries for network engineers about 20% below standard wages in the private sector – creating a dynamic where young and promising engineers may use the network to gain

experience and then take a pay raise in the private sector.

Entrepreneurial Spirit

When communities begin contemplating their own broadband network, they are under significant pressure to develop a strong business plan detailing subscriber targets, expected costs and prices, and the time it will take to break even. Though this planning is essential, the reality of business plans is similar to that of war plans: they have to change the day after they are put on paper. Though an agile enterprise can make a bad business plan work, a great business plan offers little help to an enterprise unable to adapt to changing circumstances.

It takes years to plan and build a community network, with the market often shifting in ways it would not have in the absence of a potential community network. Fortunately, incumbents are often bureaucratic behemoths that will act in fairly predictable ways. As incumbents with the advantage of scale, they are far from nimble. It is essential that community networks are able to respond to a changing environment – quickly. As noted when discussing the civil service requirements hampering BT's ability to hire the staff it needed, the needs of a community network enterprise are distinct from that of other essential infrastructure departments that typically operate in a monopoly: water, sewer, solid waste, and electricity utilities.

Most communities with fiber networks actually run it via a public power utility. Different ownership structures allow different levels of autonomy from the rules governing City Hall. While these utilities are perfectly suited to help in some aspects of the telecom experience (back office, billing, trucks, line workers), they have little experience responding to full-bore marketing campaigns from the likes of Comcast. These utilities may be in the habit of reevaluating their strategies and budgets on a yearly basis rather monthly or at least quarterly. Simply put, expertise in

“Though an agile enterprise can make a bad business plan work, a great business plan offers little help to an enterprise unable to adapt to changing circumstances.”

creating the most reliable electrical grid may not translate into designing the best information network. In these situations, the networks are wise to hire or at least consult outside experts.

Community broadband networks are higher risk than traditional utility and local government ventures and must be operated in an entrepreneurial manner. But community networks *are* essential infrastructure, meaning that they should not be run like a normal private business. Ironically, one of the reasons behind BT's misfortunes is that after Nulty left, BT became less focused on the public good than on being a telecom enterprise. (Everyone I spoke to praised Burns' engineering ability but no one praised his management.) The new management fundamentally lowered morale, a blow to BT's ability to compete against richer, more entrenched companies.

When the business plan changes, or when a supplier of an essential technology fails to meet its obligations, the enterprise needs to react quickly rather than wait for three levels of decision-making to approve nullifying the contract and finding a new vendor. These bureaucratic requirements hindered BT's roll out of its HDTV and DVR capabilities, hurting its ability to attract those most likely to take the triple-play bundle. Having problems with a new technology like IPTV (BT was an early adopter) should be expected; the larger problem was the difficulty BT had in overcoming the problems.

Those evaluating BT's relationship with outside contractors encouraged it to cease outsourcing the vast majority of new subscriber connects.²⁸ Networks often contract out for some portion of these customer connects so they can increase the number of installers easily to meet demand rather than risking long waiting times for eager customers.

Regardless of whether the work is done in house or contracted out, a key to success is streamlining the back office processes to take

that new customer, turn on the correct services, set up billing, and the many other little tasks that are required. Inefficiency here has hurt a number of start-up networks, BT included. Some of these are the inevitable growing pains of a new business and others are poor planning. New networks should discuss these systems with established community networks that have a similar structure to avoid known problems.

Scale

Broadly speaking, broadband networks have economies of scale. 24/7 network monitoring, marketing, customer service, and other obligations are less expensive when they can be spread across a larger subscriber base. Most community fiber networks range from thousands of subs to tens of thousands. Competitors like Comcast and AT&T have millions.

Had BT expanded into nearby communities – which were explicitly working with Nulty on the plans until Mayor Kiss nixed the plan – it might have gained an important economy of scale. We are already seeing some existing community fiber networks expand into nearby areas – Cedar Falls Iowa, and Reedsburg Wisconsin, are two examples. New community networks must examine possibilities of lowering costs by working with nearby networks or other towns that want a local provider. Vermont does not need twenty different networks duplicating the same head end investments, which is one reason why the EC Fiber project is so appealing with its twenty plus towns working together for a single rural FTTH network.

Small networks in rural areas may have difficulty finding affordable transit to the Internet. Larger networks pay much less per Mbps than smaller networks because buying in larger quantities typically lowers per cost per Mbps. BT was unable to offer extremely fast residential connections in large part due to the expense of its backhaul -- they are in an area with little middle-mile competition. HBC's BRC report noted that BT should have been able to reduce its \$40/megabit rate to between \$25 and

“Community networks are essential infrastructure, meaning that they should not be run like a normal private business.”

\$30/megabit, saving as much as \$6,000/month.²⁹ In some cases, communities facing similarly exorbitant rates have invested in a middle-mile connection out of town to increase their options beyond the too-few local providers.

While private sector providers may be willing to grossly oversubscribe (such that hundreds of people think they each have 12Mbps when they are all really sharing a 40Mbps connection), BT was committed to truly delivering the connections they advertised. While BT's local network could transmit at 100Mbps, the high access charges to connect to the Internet limited their maximum residential tier to 8Mbps. If BT were ten times bigger, it would have more power to negotiate for much better rates. Until BT could negotiate a better Internet access contract, they could not afford to market higher residential broadband speeds.

Scale is also important in the cost of cable television services, a key component of the triple-play package. BT had to negotiate most of its channel contracts individually – a process that is lengthy, costly, and burdensome. In the end, BT may be paying 20-30% more for channels like ESPN, Disney, Comedy Central, and others than is Comcast. Though cooperatives like the National Cable Television Cooperative have historically helped communities to get fair contracts, they have recently been reluctant to admit publicly owned networks.

Technology

As noted above and stressed by those evaluating BT, the network is a marvel. Its phone and broadband service are unparalleled in Vermont. Unfortunately, its cable services have not lived up to the high standards of its triple-play brethren. Quite frankly, cable TV is a hard business with a low margin. BT has been an early adopter of IPTV in a period of remarkable transition including both HDTV and DVRs. On both, BT was slow to offer these expected services to subscribers, slowing its take rate. Fortunately, these significant changes are infrequent and the only significant change on the horizon now is 3D, something

few are likely to demand from their television in the near future.

Though a substantial number of people will join the network regardless of things like cable reception quality (which may have quirks in the startup phase), having reliable cable television is a prerequisite for a substantial group of potential subscribers. If the picture has glitches and artifacts – or goes out during a big sports event, subscribers will not only disconnect, they will badmouth the network. Dealing with cable television is a giant headache that few want to experience. Unfortunately, providing triple-play services remains the least risky model for building a citywide debt-financed network in competition with incumbent providers.

Dealing With the Regulator

In the early years, BT had few problems with the Department of Public Service. Nulty has repeatedly praised DPS from their dealing with BT under his management. However, when DPS discovered BT had been hiding its noncompliance with Condition 60 (lending itself funds to build the network), the relationship became quite adversarial. BT's problems have greatly snowballed since it decided to copy the opaque practices of private sector companies like Comcast. When mistakes are made, the better approach seems to be owning them and proactively approaching a fair-minded regulator rather than waiting to be caught.

Has BT Failed?

It is easy to evaluate private sector companies because they have a single overriding objective: profit. If they have a second objective, it is to increase profits. In contrast, local governments, nonprofits, and coops have multiple goals, some of which are at odds with each other. But the overriding goal is to provide for the public good. Profit, or breaking even, is an important piece of being sustainable, but if a network generates hundreds of jobs and improves the quality of life while consistently running \$1 in the red, who would call it a failure?

Evaluating these networks is something that can only be done locally by those who are affected by them. How has the network changed the community? What are its benefits and liabilities?

In our discussions with people in Burlington, it is clear that BT has been disappointing. Regardless of whether one feels taxpayer dollars should be used to build networks (as they build roads, for instance), Burlington's residents were assured that the network would financially stand on its own. Not only has it failed to meet that standard, the Mayor's Administration has not been honest with the public about it.

This report has detailed ways in which it has benefited the community and how its management failed it. However critical we may be of Leopold's handling of BT, he did understand its fundamental importance. In response to a question from the DPS regarding BT's "non-trivial risk of business failure," Leopold discussed the history of the City's airport. In its first 30 years of operation, the airport received some \$100 million in transfer from the General Fund. The value of this infrastructure comes not from its revenues but from what it enables. And while Burlington Telecom is in a deep debt hole, it is a relatively young asset. Its fibers will continue carrying light for decades, giving Burlington's citizens the benefits of greater broadband choices than most Americans.

Burlington Telecom is under new management and has restructured its debt load. Its past mistakes do not forever condemn it.

But is in a difficult position. With smart management, those looking back on 2011 from 2021 may no more think it a failure than we think the airport a failure today. In the meantime, everyone can learn something from it.

References

¹ Quoted in “No local prosecution in Burlington Telecom case, Chittenden County state’s attorney says,” *Burlington Free Press* on June 29, 2011. <http://www.burlingtonfreepress.com/article/20110629/NEWS02/110629026/1007/NEWS02/No-local-prosecution-Burlington-Telecom-case-Chittenden-County-state-s-attorney-says>

² Irony warning: Koch Financial financed this network despite the Koch family’s staunch opposition to all things government. The group Americans for Prosperity was created and funded by the Kochs; it advocates for state laws that preempt the power of local communities to decide for themselves if they should build a network.

³ See Case Study for details: <http://www.newrules.org/information/publications/burlington-telecom-case-study>

⁴ While BT agreed to complete the citywide build within 36 months, the hearing office believed the schedule to be “aggressive.” As detailed by Nicholas Miller in testimony for the City (Prefiled Testimony of Nicholas P Miller, September 30, 2009, Docket 7044 of Vermont PSB), a number of states either do not require universal build-out for overbuilders, or give longer windows to complete the build. Unlike private companies, BT already had a mandate for universal coverage because the public owns it. In absence of other problems, it should have been able to renegotiate that date if it was untenable.

⁵ See “Burlington Telecom still running below goal” on April 25, 2008 and “Burlington Telecom predictions overly rosy” on May 11, 2008 in the *Burlington Free Press*, both by John Briggs.

⁶ See 1/27/2011 Special Council Meeting Part 2 starting at 73:00 minutes and again at 105:00 minutes.

⁷ City of Burlington Response to the “Larkin Report.” January 25, 2011, Page 8. <http://www.ci.burlington.vt.us/docs/3367.pdf>

⁸ See “A solution to Burlington Telecom’s Woes: Subscribe!” by Greg Eplerwood. <http://www.muninetworks.org/content/solution-burlington-telecom%E2%80%99s-woes-subscribe>

⁹ The discrepancy lies in the complication of dealing with multiple dwelling units like apartments and condos (MDU’s in industry-speak)

¹⁰ See Burlington’s response here: <http://www.ci.burlington.vt.us/docs/3367.pdf> and a response from Tim Nulty here: <http://www.muninetworks.org/sites/www.muninetworks.org/files/Press-statement-Timothy-Nulty.pdf> Larkin did not audit the BT set of books, failed to talk to nearly all the key people, and spent very little time actually in Burlington over the course of the project. Larkin’s suggestion that BT was always out of compliance with Condition 60 may or may not be legally accurate in the most technical sense. However, BT certainly complied with the spirit of the law until March 2007.

¹¹ Unfortunately, the *Burlington Free Press* has been content to cherry pick damning quotes (occasionally out of context) from the investigations of others and has done little independent investigating.

¹² A portion of this \$10 million immediately went to pay debt to the City pool for network expenditures from March-August. This amount is disputed.

¹³ For instance, see the Burlington Telecom Advisory Committee Report, which notes disturbing changes in BT after Nulty left: <http://www.7dvt.com/2008report-details-concerns-burlington-telecom-advisory-committee>

¹⁴ HBC Report to the Blue Ribbon Committee, page 5.

¹⁵ Aside from lowering morale and create distrust among the staff, the secrecy allowed BT’s serious problems to fester until they were too large to hide, and too late to fix.

¹⁶ City Councilor Karen Paul, who has a background in finance, has tried to dig into BT’s problems. She discussed the failed oversight 105 minutes into Part 2 of the 1/27/2011 Special Council Meeting on Burlington Telecom: <http://www.cctv.org/watch-tv/programs/special-council-meeting-burlington-telecom-part-2>

¹⁷ See, for instance, Mayor Kiss’ op-ed in the *Burlington Free Press* “My Turn: City Council was informed about Burlington Telecom finances.” <http://www.ci.burlington.vt.us/docs/4346.pdf>

¹⁸ She notes it has “stuck in her craw” for years. See Part 2 of the 1/27/2011 Special Council Meeting on Burlington Telecom, approximately 115 minutes into the video: <http://www.cctv.org/watch-tv/programs/special-council-meeting-burlington-telecom-part-2> Executive sessions are not recorded, but her memory was confirmed by others present at the meeting.

¹⁹ HBC Report to the Blue Ribbon Committee. <http://publicservice.vermont.gov/dockets/7044/Exhibits/LA-20%20HBC%20Report%20Redacted.pdf>

²⁰ Larkin also alleged that BT *may* have been pricing below its cost, but the audit cites no information to defend that charge aside from a footnote to BT testimony in which they state they charged the cost and provide the formula they used to arrive at the figure.

²¹ If a school or muni department has to purchase telecommunications services from the private sector, it will almost certainly pay an amount far above what the local government would pay if self-provisioning. But what should it charge itself? In some cases, the departments are charged nothing, which means the network takes a loss on providing services to muni departments and appears to be in a worse financial position. The problem with this approach was demonstrated by iProvo – citizens were angry that the network did not meet financial goals and were entirely uninterested in hearing nuances about money saved in Department budgets. But when networks start by offering free connections to departments and later attempt to charge even a fair price, departments fight to continue receiving free services. Public networks should take all this into account when setting new policies as networks are built.

²² Special Council Meeting on Burlington Telecom – Part 2 - <http://www.cctv.org/watch-tv/programs/special-council-meeting-burlington-telecom-part-2> For instance, see 36:55 and 47:20.

²³ See Richard Donnelly on Mary 23, 2008 in Burlington Free Press “How to compare apples to oranges.”

²⁴ Breaking the Broadband Monopoly is available here: <http://www.muninetworks.org/reports/breaking-broadband-monopoly>

²⁵ The FCC needs to recognize that a pro-competition policy means treating firms differently based on scale and whether one is an incumbent (with the many advantages inherent) or a new entrant.

²⁶ Burlington’s politics are quite complicated, due in part to the system of instant run-off voting that produces odd coalitions rather than a more conventional two-party system.

²⁷ BT was established separately from Burlington Electric (BED) partly due to the earlier failed attempt at a network. Several people commented to me that BED and BT tended not to cooperate – culminating in delays for BT when BED’s make-ready on poles took longer than expected, delaying BT’s rollout in some sections of the city.

²⁸ BT was overpaying for its connects, something it has brought under control recently.

²⁹ HBC BT report to BRC, page 26-27

Appendix: Where Did the Money Go?

As we investigated where Burlington Telecom went wrong, we encountered a confusing thicket of financial information and gaps. It became apparent that including this information in the report could be too distracting. However, for those who want to dig into financial details, we present our findings here.

We focused on the time period from November 2007 (the earliest the City could have exhausted the Citi financing) thru October 2009 (when BT's debt to the cash pool was \$17 million and the public first became aware of it). If BT was able to mostly cover its operating expenses out of revenues, the only sources of loss would have been debt payments to Citi and capital expenses (expanding the network pass and connecting new subscribers). As debt payments were roughly \$2-3 million over this period, an extra \$14 million capital expenses appears to be unaccounted for and unexplained given how little the fiber network was extended over this period.

Both Tim Nulty, BT's first General Manager, and the Mayor's Administration have agreed that sometime around March 2007, BT exhausted the funds it borrowed from Koch. Nulty says that he offered to stop expanding temporarily, but Leopold told him to continue the build-out. At that time, they hoped the Citi refinancing (round 3 of \$33.5 million) would be done before the window of CPG Condition 60 closed. Condition 60 required BT to repay any funds borrowed from the City within 60 days. By the time BT had access to the Citi funds in August, BT had a significant debt to the city pool. Just how much is disputed.

Here is where the financial thicket becomes impenetrable. Only a true forensic audit could provide a definitive financial paper trail.

For the period from March 2007 – August 2007, Nulty recalls BT's debt was on the order of \$3-\$3.5 million whereas the Mayor, in a 2010 memo, claims BT owed \$6.3 million to the pool.¹ Mayor Kiss claims BT owed the city pool \$5.16 million by the end of fiscal year 2007 (FY

2007 end was June 30, 2007). Yet the reported 2007 actual expenditures of BT for the entire year total \$5,378,678,² suggesting that if the Mayor's figures are correct, BT spent only \$200,000 for the first 2/3 of the year.

The Mayor's memo goes on to say that BT exhausted the Citi funds by November 2007 and was actually already in debt to the cash pool for \$2.3 million. Yet the Shanahan report disagrees. Shanahan, a consultant hired by BT after Nulty resigned, presented a report and business plan to BT on Dec 5, 2007, saying: "the company will exhaust the available funds under the current \$33mn credit facility in March of 2008." It is unclear how the Citi funds could have been exhausted in November of 2007 and yet also stretched to March 2008. It is true that budgeting is a messy business, requiring predictions that must later be re-evaluated, but the Mayor's Administration has not clearly explained cost overruns attributed to BT.

When Nulty ran BT, he kept a set of books separate from the city to satisfy Condition 58 of the CPG, namely that BT keep a "Chart of Accounts" capable of tracking, "in a transparent and auditable manner the direct and indirect costs" of everything BT does.³ Nulty and Leopold clashed over whether there should be a separate set of books, with Leopold arguing the books he kept as Treasurer were sufficient.

John Van Vught, BT's IT Director and bookkeeper, kept BT's books using Quickbooks until Nulty left, whereupon Leopold told him to stop.⁴ From what we can tell, these books have not been evaluated by anyone since and no one has confirmed they still exist. One City Councilmember told me they would look into it, but we did not hear anything further. The books would be helpful in reconciling Nulty's recollection of BT's financial status with claims later made by Leopold.⁵ Neither the Larkin Audit nor the consultants evaluating BT consulted the separate books BT kept under Nulty.

Both the Mayor and Leopold have stated that BT was stronger after Nulty left:

For FY09 and the first half FY10, the unaudited numbers show that BT is finally cash flow positive with \$9.4M in operating expenses and \$9.9M in revenue resulting in a positive cash flow of \$443,000, excluding capital expenditures and debt/interest payments.⁶

This gives us some more data with which to work. From July 2008 thru December 2009, BT generated an operating surplus of \$443,000. Debt payments were \$2.25 million over this period and capital costs could have been as high as \$3.5-\$4 million to connect the new customers over that period (some 2300 new connects at between \$1500 and \$2000 per). As the pass was no longer expanded after FY 2008, there were no costs attributable to it. So at most, BT would have borrowed \$6 million from the city pool over this period for capital costs. In November 2009, BT's debt to the City Pool totaled \$16.9 million, meaning BT must have borrowed over \$11 million from the City's cash pool prior to July 2008.

From the Citi financing of August 2007, the capital cost to connect the rest of the customers in FY 2008 would have been on the order of \$2 million but certainly no higher than \$3 million to connect 1300-1400 subscribers. Debt payments to Citi in FY 2008 were \$1.5 million. The mayor claims BT's operating losses in the first 5 months of FY 2008 were \$610,000, so let's assume BT lost no more than \$1.5 million in operating losses over FY 2008. This adds up to a loss of approximately \$5 million in FY 2008, leaving \$6 million still unaccounted for. The only unaccounted cost was finishing the network pass, which was already mostly finished when Nulty resigned.

Wherever possible, I have erred in the direction of BT for this exercise. Others believe the amounts unaccounted for are far higher.⁷

As we try to make sense of these discrepancies, it helps to look at the budget for FY 2009.⁸ The Shanahan report forecast expected revenues of \$6 million for BT in FY 2009, which matches the \$6 million in revenues budgeted by the City.

However, Shanahan forecast \$6.7 million in expenditures (including interest on debt) and \$2.5 million in capital costs (entirely for connecting subscribers to the pass) for a total of \$9.2 million in expenditures. But the City's budget for BT's total expenses is \$17.1 million for FY 2009.

Digging into the budget at the subsidiary level (something not possible in more recent years due to increased secrecy), the difference may be accounted for in the massive growth of a line item unhelpfully termed "Other Charges."

"Other Charges" Budget Line Item

Year	Amount
2006	\$377,410
2007	\$133,227
2008*	\$7,686,740
2009**	\$8,757,363

Table A1

* Reflects first 3 quarters of FY 2008, so total presumably much higher.

** Budgeted amount.

Allocating just over half of all expenditures to a line item "Other Charges" should have been a serious warning flag even above the warning flag that BT was projecting twice as much in expenditures as expected. That said, the *actual* expenditures from BT in FY 2009 were closer to \$10.6 million according to figures reported later. What remains unexplained is how the expenditures were so much higher than Shanahan forecast (a gap of \$4 million) when they connected far fewer customers than forecast (capital costs should have been about \$1 million below Shanahan's forecast).

This appendix demonstrates why we believe most of the blame for BT's failures lies with BT's management after Nulty left. BT's management after Nulty's resignation grossly overspent even their own estimates -- and we may never know on what.

Endnotes

¹ Memo from Mayor Kiss to City Council, March 4, 2010

² See FY 2010 Budget, which lists expenditure total in past years: <http://www.ci.burlington.vt.us/ct/budget/2010/ExpensesAcctLevelFY2010.pdf>

³ See BT's Certificate of Public Good

⁴ John Van Vught continued working for BT until September 2010.

⁵ It is entirely possible the City's books were out of sync with the books kept by BT under Nulty. When BT made purchases, they were entered in BT's books and sent to Leopold for payment. As a project under Leopold, he had the final say on what purchases were attributed to Nulty. Thus, Nulty could not spend funds without Leopold knowing but Leopold could attribute funds to BT without Nulty knowing. Whether or not that happened, we do not know.

⁶ Memo from Mayor Kiss to City Council, March 4, 2010

⁷ See, for instance, Steve Ross's "[City Raids Burlington Telecom Treasury](#)"

⁸ See <http://www.ci.burlington.vt.us/ct/budget/2009/FY09BudgetComplete.pdf> or <http://www.ci.burlington.vt.us/ct/budget/2009/>