

The Business Case For Government Fiber Networks

Yes, there is life after I-Nets and the stimulus program. Funding sources come and go, rules may change, but fiber is still a winning proposition.

By Joanne Hovis / *CTC Technology and Energy*

With the lucky few recipients of federal broadband stimulus grants now hard at work building their networks, localities that did not win funding or were not in a position to apply could be forgiven for thinking they missed the opportunity to operate a government-owned, fiber optic broadband network.

This is especially true for any community in danger of losing its institutional network (I-Net) – that hard-won concession of cable contracts from an earlier franchising environment – because of regulatory or technical changes.

However, despite the closing of the \$7 billion broadband stimulus window and the ongoing shift from franchise-funded I-Nets, viable options remain for communities to build next-generation networks to serve governmental and institutional needs. Rather than government grants or cable-company funding, new federal E-Rate regulations and new ways to analyze the benefits of municipal fiber networks will be the keys to a successful business case.

OPPORTUNITIES PAST AND FUTURE

Communities nationwide have reaped the benefits of a bygone cable franchising environment. In the early and mid-1990s, effective county and municipal negotiators signed contracts that secured fiber optic I-Nets for their jurisdictions. These were either partially funded by cable operators

as compensation for use of public rights-of-way or built alongside the cable companies' construction paths to benefit from the enormous efficiencies of shared construction.

However, many franchise agreements from that era are expiring or have been abrogated by regulatory change, and even the best negotiators cannot surmount regulatory changes that give franchisees the power to reclaim I-Net infrastructure. As a result, the functionality of many broadband networks that have cost-effectively supported governmental needs for the past 15 years will need to be replaced.

More recently, the Broadband Technology Opportunities Program (BTOP) – which commenced with the passage of the American Recovery and Reinvestment Act of 2009 (ARRA) and culminated with the awarding, in September 2010, of the program's final infrastructure grants – held out the tantalizing prospect of up to 80 percent federal funding for open-access government networks. Even taking into account the program's required matching contributions, many cash-strapped communities were able to demonstrate viable business models with reasonable cash flow and solid sustainability.

The surest way for communities to replace the bandwidth they are losing from I-Nets targeted for extinction is to build their own capacity. As with any major capital investment, a new communications network requires a solid

return on investment (ROI). In the absence of BTOP funding and I-Net agreements, there are two primary ways to demonstrate the business case for a government-owned network: on and off the balance sheet.

BENEFITS 'BEYOND THE BALANCE SHEET'

The best business plans are built on conservative financial assumptions. Someone who expects less return and ends up getting more is obviously in a much better position than someone who plans for returns that never materialize. However, business plan assumptions typically relate to dollars on traditional financial statements.

To make the case for investing in a government-owned fiber network, many communities define ROI more broadly and consider the "beyond the balance sheet" benefits that such a network would deliver. These benefits have nothing to do with traditional financial measures. Rather, they represent the return to the community in terms of such largely intangible societal benefits as enhancing health care quality, narrowing the digital divide, providing enhanced educational opportunities to schoolchildren, delivering job search and placement opportunities at public computer centers and helping isolated senior citizens make virtual social connections.

This approach is a justifiable, appropriate way to define the success of a network because these benefits are the reasons governments build broadband infrastructure in the first place. Local governments are in the business of providing education for young people, job training for the unemployed and so on; broadband for key community anchor institutions is just the latest and newly essential tool to enable those government services.

BENEFITS ON THE BALANCE SHEET: LONG-TERM COST SAVINGS

As compelling as beyond-the-balance-sheet benefits may be, there are also strictly dollars-and-cents ways to model

Broadband for anchor institutions is the latest and newly essential tool to enable the services local governments have traditionally delivered.

a proposed network – without direct federal funding and without cable franchise support – that may put a network business case on solid footing.

First, a government network can help avoid existing and future costs by replacing services for which the government previously paid third parties. Second, a network can bring revenues to a community, especially given new E-Rate regulations that make government networks eligible for subsidy if they serve schools and libraries. Together, these cost savings and revenue streams can add up to significant dollars – potentially to amounts that justify financing the necessary construction.

Government entities of all sizes are major consumers of connectivity services to support internal operations, public safety functions and a range of other applications. Typically, government facilities lease circuits from a phone company or similar provider, and for that privilege they pay rates that sometimes represent profits of many hundreds, if not thousands, of percent for the phone companies. Worse, the circuits are usually relatively low-bandwidth connections because the retail costs of very high-bandwidth services make those connections unaffordable.

A government fiber optic network that links all government facilities eliminates the jurisdiction's ongoing cost of leasing circuits. This represents an easily quantifiable present value on the financial statement and is as close as possible to a guaranteed line item: Build the network and you will shave this amount from your accounts payable.

In fact, because a government network can deliver far higher-capacity connectivity than the jurisdiction had previously leased, its value is even

greater than simple cost avoidance. A government that owns a network can use inexpensive, off-the-shelf equipment to connect its facilities to one another at no cost for bandwidth (because the traffic is "on network" and not going out to the Internet). It can also deliver Internet connections to these facilities at a per-unit cost much lower than that of leased connections because it can aggregate the needs of all departments and purchase commodity bandwidth. This is particularly true for a jurisdiction that can develop a mutually beneficial partnership with a provider of wholesale bandwidth.

The cost savings generated by a government network will grow over time, too. At the least, savings will grow in lockstep with the expected inflation of retail service prices. In addition, the network will inexpensively scale to meet the jurisdiction's future needs for more capacity and connectivity to additional sites.

Many government facilities and community anchor institutions are already bandwidth-constrained today, and they can expect their capacity requirements to grow as quickly over the next 15 years as they grew over the past 15 years. Because leased bandwidth is so expensive, governments will continue to be unable to adequately support their internal operations and those of community anchors – and they will lack the bandwidth to undertake future innovations, even if they have the necessary hardware, software and ideas.

The cost of scaling up a government-owned fiber network to meet new needs is far lower than the cost of buying circuits from someone else – not just because the "someone else" has a profit motive but also because it may not have the infrastructure where needed. For

example, if a local phone company has only low-speed twisted-pair copper, the only way a customer can get the needed capacity is to pay the phone company to build out fiber – and then pay it to deliver services over the fiber the customer just financed. Viewed in this light, a government-owned network becomes even more compelling.

BENEFITS ON THE BALANCE SHEET: REVENUE STREAMS

Like a toll road waiting for traffic, a government-owned and -operated fiber optic network represents a potential source of revenue for a community. Projected cash flow generated by a government-owned network is not as certain as avoided costs, but prudent business modeling can include scenarios ranging from best to worst case. This is just one of many factors to consider in building the business case.

There are three potential revenue streams for a fiber network. Two are fairly traditional, and one is both new and potentially very lucrative. (A fourth stream, the Federal Communications Commission's Healthcare Connect Fund, may become significant in the near future.)

Dark or lit fiber to community anchors. A well-established revenue stream is derived from providing either dark fiber or lit services for nongovernment institutions. This model hews very closely to the service delivered to government operations – but instead of helping the government avoid its own costs, it creates a revenue stream for the operator. By providing reasonably priced fiber to qualified nonprofit and community organizations and facilities, the network operator also supports the needs of anchor institutions – which in turn support the citizens.

To understand the magnitude of revenue a government fiber network can earn from this source requires understanding the types of facilities that can be connected and the levels of service they need.

Community anchor institutions are places where members of a community go for the services that support and

sustain them and where services such as broadband Internet access (and the applications that broadband supports) are aggregated and made available to them. A government fiber network connection is a natural fit at these facilities.

Broadly defined, these anchors include government buildings, community colleges, schools, libraries, municipal utility facilities and public facilities such as community media centers, key nonprofits, hospitals, clinics, community centers, senior centers and public housing.

Community anchor institutions buy connectivity to one another and to the Internet. Some of them, such as libraries, colleges and media centers, often provide Internet access and broadband applications to residents who lack home broadband service. Like government operations, community anchor institutions have seen – and are likely to continue to see – their bandwidth needs grow exponentially.

Middle-mile capacity. The second potential revenue stream derives from providing middle-mile capacity to private-sector operators. This is a more speculative income source, but a growing body of evidence indicates that it is feasible given the proper market conditions. (A formal request for information process would easily enough establish whether those market conditions are present in a given community.) The BTOP funding rules, in fact, make this market an implicit requirement: Grant recipients must commit to nondiscriminatory, open-access policies that make access available to third-party service providers.

By making middle-mile capacity available where it does not otherwise exist, and at very reasonable cost, a government network can reduce barriers to investment for entrepreneurial companies and nonprofits that want to build last-mile capacity. Those companies' leases would lead to meaningful revenues for the network operator and stimulate private investment and the extension of broadband service to members of the

community who otherwise would not have it or would not have the benefits of competition.

Like selling lit and dark fiber services to anchors, selling middle-mile capacity has both a financial and a social impact. Because many of the BTOP infrastructure grants incorporate this business model, significant data about the ROI of this model will emerge over the next few years. Preliminary indications from many of these projects are very good. In both metropolitan and rural areas, BTOP awardees are engaged in negotiations with last-mile providers that seek access to new middle-mile fiber to affordably reach areas for last-mile service.

E-Rate subsidies. Another very significant potential revenue stream enabled by a government-owned fiber network is one that hinges on a September 2010 FCC order. In that decision, the FCC for the first time made nonregulated nonprofit and public networks eligible for the E-Rate subsidy for providing broadband to schools and libraries under the Universal Service Fund.

This is by no means a free lunch for network operators; the requirements for becoming an E-Rate provider, including competing in a procurement process and submitting extensive paperwork, are necessarily strict. However, there are enormous positive financial implications for governments that choose to become E-Rate providers. By serving schools and libraries, they can receive E-Rate subsidies as high as 90 percent, depending on the level of poverty in a community.

When schools and libraries award contracts under a competitive process – meaning that the network provided the best service at the best price – the network owner has guaranteed revenues that are independent of the fiscal position of government. Depending on how much E-Rate subsidy a local government qualifies for, the bulk of its network funding could come from sources other than local government. This funding could go a long way toward covering network operating costs and could even cover some

debt service costs. An E-Rate subsidy could help make a network more self-sustaining and less dependent on government or other external funding.

THE MULTIPLIER EFFECT

By avoiding costs and increasing revenues, a government-owned network can deliver one additional benefit: keeping money in a community. Circuits leased from a large national provider require the delivery of a big monthly check to a potentially far-away corporate entity, but monthly fees paid to a government-owned network stay in the community to be spent on other government services and to be multiplied when network employees go out to eat or spend money at other local businesses.

This is true of E-Rate subsidies, too. The schools and libraries that benefit from E-Rate never touch the money that subsidizes their connectivity –

it usually goes directly from USAC, the administrator of the program, to the company that provides services and may never reach the community where the services are provided.

When the E-Rate subsidy becomes a revenue source for a locally owned and operated network, however, that money goes into the community. That has benefits for the network bottom line, for government operations, and for the community as a whole based on a multiplier effect. Norwood Light Broadband, the municipal fiber network operator in Norwood, Mass., makes that point directly to its potential customers. Visitors to the town's Entering Norwood website (www.enteringnorwood.com) see the value proposition spelled out for them:

Do you own a house or business in Norwood? Do you have children that go to school in Norwood? ...

When you write out a check to the Town of Norwood, your money stays in town working for you.

Norwood is among the minority of American communities that own and operate their own fiber optic networks. But given the potential financial benefits of the recent E-Rate order and a growing understanding of broadband as a public good, it may ultimately be joined by many other communities – with higher bandwidth available for government operations and community anchor institutions and more revenue staying in town to support local economic development. ❖

Joanne Hovis is the president of CTC Technology and Energy, an engineering and business consulting firm that has been involved in planning, designing and implementing many fiber optic networks. She can be reached at jhovis@ctcnet.us.

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