

Gigabits Across Connecticut

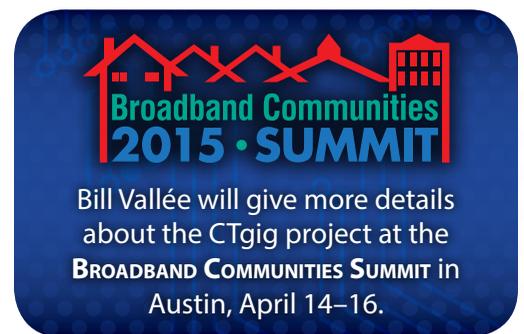
The Connecticut state government is spearheading a public-private project to help municipalities improve their broadband options.

By Bill Vallée / *Connecticut Office of Consumer Counsel*

In July 2014, Connecticut Consumer Counsel Elin Swanson Katz joined Bruce Carlson, president of the Connecticut Technology Council, an association of technology companies and institutions, and set out on a listening tour. Their purpose was to find out what high-tech business leaders thought about their broadband services. In focus groups held in Stamford, New Haven and Hartford, they met with nearly 100 business leaders and political supporters, including Kevin Lembo, the state comptroller, and Catherine Smith, the economic development commissioner. These meetings sparked a statewide project – the first of its kind – to transform broadband services for businesses.

The focus groups showed that the business community was deeply frustrated with the inadequate supply of gigabit Internet access. Business leaders said their current broadband speeds were insufficient to support interactions with consumers and vendors. They were aware that better, cheaper, faster service was available elsewhere or in other locations of their own businesses, and they wanted access to all-fiber networks like those being built in other states or nations. They knew this would not occur unless the existing broadband duopoly faced competition.

It was clear that the business leaders in Connecticut, a state with a very high number of high-tech manufacturers providing products throughout the world, demand far greater broadband capacity at reasonable rates than is currently available. They didn't want fiber access only for their offices and factories – they wanted



it for their entire communities. These high-tech leaders emphasized that they didn't operate in a vacuum. For example, they wanted their employees to be able to work from home or while traveling the United States or the world. The Connecticut-based health insurer Aetna, for example, was already saving real estate costs by allowing 40 percent of its workforce to work remotely; with better broadband, it could expand this program and save even more.

Employers were also looking for efficiencies in health care delivery. They knew electronic health records and remote monitoring technology could improve their employees' health and reduce health care costs, but these entrepreneurs made it abundantly clear that these advanced technologies depend on access to ultra-high-speed, very reliable, redundant broadband.

Business leaders thought increased broadband use would stimulate a "virtuous cycle." If they had better broadband, they said, they would invest in new applications and

in innovative content and services. Consumers would want to use those services and would need better broadband to do so – and that in turn would give ISPs a reason to invest further in their networks.

THE POWER OF THE GIGABIT

Business leaders said that deploying gigabit service would encourage economic growth and facilitate improvements in education, health care, public safety and other key policy areas. They believed gigabit service could make the difference between economic decline and a vibrant future.

For 20 years, the Internet has disrupted markets by eliminating intermediaries such as record stores and travel agencies. Connecticut companies, such as Norwalk-based Priceline.com and Bristol-based ESPN, have successfully pioneered some of those disruptive models and forever

Connecticut business leaders said that they experienced long waits for the fiber connections they needed and paid high prices for those connections.

transformed their industries – but now businesses in the state were falling behind because they could not keep up with the speed of disintermediated commerce.

For example, the manager of a New Haven company, a subsidiary of a French corporation with operations across the globe that manufactures parts for Boeing and Airbus, requires high-speed, reliable broadband to start production automatically in response to a signal from a Boeing computer. Boeing maintains just-in-time inventory

across its international manufacturing footprint, so the New Haven parts manufacturer must be prepared to start a production run at any time of the day or night and transmit a live video feed showing the progress of the job.

Both for reliability and for bandwidth, this manufacturer needs a high-speed fiber connection – yet despite being located half a mile from telephone company headquarters, the company had to wait 10 months to get that connection at a wildly exorbitant rate. This story was unapologetically

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The race is on to deliver gigabit speeds to cities across the United States – but no such networks are planned in Connecticut or in the entire Northeast.

confirmed by the president of the local exchange company, who also attended the New Haven focus group of the listening tour.

Indeed, even when they could obtain high-speed connections, all the business leaders felt the prices were unreasonable and caused them to consider moving or reducing their Connecticut operations. The problem, in their view, was that the market for gigabit service is a monopoly or at best a duopoly. Although FCC reports show increasing (though still poor) competition for low levels of broadband, competition drops off radically at higher speeds. Even at 25 Mbps, according to the FCC, 78 percent of homes have no competitive choice and almost 20 percent have no service at all. At 50 Mbps, 82 percent of consumers have no competitive choice. Thus, customers cannot respond to poor service or high prices by switching providers – which is why the business leaders indicated that they had to consider broadband access speeds and reliability when making Connecticut location decisions.

In rural areas, the problems are even more severe. The focus groups told us that rural residents wanted to work at or near their homes but frequently could not obtain sufficient broadband access for teleworking or operating a Web-based business. Although rural business leaders wanted to live and operate in these rural areas, they had to consider relocating in the absence of broadband access sufficient to conduct sales and high-tech manufacturing.

In spite of Connecticut businesses' repeated demands for better broadband, they met with responses from ISPs that the gigabit was hype or that "no one needs a gig."

A BROKEN MARKET

The Office of Consumer Counsel concluded that by allocating scarce bandwidth on legacy networks instead of deploying abundant bandwidth on new networks, the ISPs had created significant broadband dead zones in Connecticut. Thus, the market is failing to support a pro-consumer policy that drives innovation through providing limitless bandwidth.

Without action, the situation is unlikely to change. Telecom companies, which have huge investments in twisted-pair copper or coaxial cable facilities, undertake new capital expenditures to extend their networks only when they can achieve their target rates of return on investment, when a new opportunity presents itself or when they are forced to defend existing revenue streams from competitive attack. This reasonable business plan of harvesting revenues from existing infrastructure means that providers will not upgrade their technology, let alone deploy to many low-income or high-cost areas within some communities.

Furthermore, the lack of regulation of broadband means that states and communities have no regulatory authority to require network buildouts. Thus, the only way to fix the broken market is to encourage more competition. A century ago, when remote or low-income communities could not attract investment for electric service, they were forced to create municipal or cooperative companies to jump-start service. Today, the municipal battle is to generate investments in community fiber networks. It appears likely that history will repeat itself, as public-private partnerships will once again be the catalyst for driving fiber networks into

communities that will otherwise be competitively separated from others by a lack of access to broadband.

Competition is the most effective tool for driving innovation, investment, and consumer and economic benefits in any market. It provides incentives to lower costs and drive prices down toward cost, and it tends to increase efficiencies by forcing incumbents to improve their service quality and shift their product mix to more closely match consumer demand.

The path from narrowband to broadband to high-speed broadband was forged by competition. Cable TV companies upgraded their facilities to meet the competitive threat of satellite services, and telcos upgraded their facilities to meet competition from the cable companies. Only competition from another source – or the threat of competition – can induce the incumbents to provide fiber-based services at prices approaching cost.

SLOW LANE ON THE INFORMATION HIGHWAY

Google Fiber sparked a competitive revolution with its \$70/month residential gigabit service. In Kansas City, the cable company responded with its own upgrade to gigabit service, and in Austin, AT&T reversed course and upgraded competitively with its own ultra-high-speed service. These examples show that incumbent ISPs have the capacity to advance their technology delivery and propel communities into advanced services; they simply need a strong competitive catalyst to do so. Their existing business plans do not allow for self-generated capital expenditures in fiber.

Intense competition among ISPs has now resulted in the initiation of dozens of gigabit city fiber network projects across the United States. This increased penetration of affordable gigabit service, presuming it is more than merely a "race to the press release" and will actually be pursued on the scale that several national ISPs recently declared, will clearly foster innovation, drive job creation and stimulate economic growth.

Municipal governments, which

have recently emerged as admirable hubs of innovative thinking and policy experimentation, are also pursuing gigabit fiber projects to advance the competitive positions of their communities. Mayors, municipal councils, CTOs and CIOs have gotten creative about efficient government services and economic development. They've been pushed in this direction by their accountability to their budgets and local constituencies during periods of economic hardship, especially as federal and state resources have diminished in scale and scope.

The accelerating dynamic of competition has suddenly forced incumbents to think anew about the adequacy of their service offerings. However, no such fiber networks are currently planned in Connecticut or the entire Northeast. AT&T recently sold its Connecticut local telephone and U-verse property (Southern New England Telephone) for \$2 billion to Frontier Telecom, which has indicated its preference for copper twisted-pair technology and for DSL as its favored broadband service.

The state of Connecticut and its municipalities cannot afford to be left behind.

LEVERAGING STATE ASSETS

Connecticut has several assets that can help build a network to deliver gigabit services. The state used BTOP funding to construct an open-access statewide fiber network, the Nutmeg Network, to connect its 169 municipalities. State funding is serving to link each municipality to the Nutmeg Network. The Nutmeg Network connects nearly 1,000 community anchor institutions, including public safety entities, tower sites, K-12 schools, libraries, higher education institutions and public television stations.

The state also greatly reduced regulatory barriers to ensure that network providers, large or small, have easier access to poles, conduits, ducts and rights-of-way. There is statewide regulatory authority over attachments and equipment in the public rights-of-way, with minimal municipal regulation or fees; strictly enforced

and rapid make-ready deadlines; and equitable pole attachment rates based on the FCC formula.

Most significantly, in October 2014, the state public utilities regulatory authority adopted a "single pole administrator" system that streamlined pole attachments by assigning the electric distribution companies the responsibility of administering all pole attachment requests and doing the make-ready work. The system involves the use of a central pole-management database that is accessible by and transparent to all attachers.

Connecticut also has the unique asset of a statutory "municipal gain," a section on all the state's utility poles and in conduit reserved for use by the 169 municipalities to attach telecommunications equipment for any purpose without rental fees.

The state and municipalities can use these assets to incentivize competition, which in turn should stimulate incumbents to deliver bandwidth abundance.

Municipalities can work with willing incumbents or new entrants by entering into public-private partnerships, developing their own networks or being served by other local communities that have the capacity to provide gigabit services. The principles most likely to drive successful projects are these:

- A comprehensive gigabit service infrastructure should be developed incrementally in response to demonstrated demand from various areas of the community.
- Not all areas of a municipality will receive access to similar speeds at similar times because of economics or demand.
- Some or all of the proposed service offerings made by an ISP partnering with a municipality could initially be at speeds below gigabit service.

This will provide the municipality with a network structure that can be easily expanded later to serve other areas of the municipality as high-cost areas become viable in the future.

TEAR DOWN THIS WALL!

Following the Office of Consumer Counsel's listening tour, the cities

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of New Haven, West Hartford and Stamford launched the CTgig Project in September 2014. The three cities issued a joint request for qualifications (RFQ), hoping to begin a dialogue with companies that might partner with them to build competitive fiber networks. By offering in-kind assets and support and in some cases by becoming anchor customers, the cities aim to

- Create a world-leading, gigabit-capable network in targeted commercial corridors – as well as in residential areas with demonstrated demand – to foster innovation, drive job creation and stimulate economic growth.
- Provide free or heavily discounted Internet service at 10 Mbps – 100 Mbps (minimum) over a wired or wireless network to underserved and disadvantaged residential areas.
- Deliver gigabit Internet service at

prices comparable to other gigabit fiber communities across the nation.

Business leaders and public officials across the state welcomed the RFQ with enthusiasm. “It’s time we tear down the walls to gigabit Internet access in Connecticut,” said state Sen. Beth Bye, who, along with Consumer Counsel Katz, was a prime mover in the municipal effort. “Not only will businesses and universities thrive, but consumers will benefit from the lower prices and wider access that this initiative will create. We have the will, and I believe we have the ability to make this happen for Connecticut.”

In response to overwhelming demand, New Haven, Stamford and West Hartford invited other municipalities in the state to join the RFQ by submitting addenda describing their interests and assets – thus making CTgig potentially a statewide project.

Their invitation drew responses almost immediately, and by December 12, 46 Connecticut municipalities, representing 50 percent of the state’s population, had joined the effort.

In January, 11 private-sector entities responded to the RFQ, suggesting different approaches for building and financing gigabit networks. The 46 requesting municipalities, with assistance from the state, will review the responses and decide how to proceed. In addition, momentum is building to unify all 169 towns in a statewide project. To paraphrase Winston Churchill, we’re still at the beginning of the beginning. But for the first time, the end – gigabit networks across Connecticut – is within sight. ❖

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