Broadband nonprofit shines light on Rust Belt economy

Northeast Ohio looks to remake itself for the 21st-century economy with help from a broadband optical network

- By **William Jackson**
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The Rust Belt of Northeast Ohio is remaking itself for the 21st-century economy with the help of a regional broadband optical network being built with federal stimulus grant money.

"We'll end up with roughly 1,800 miles of network," in an area stretching along the Lake Erie shore from Port Clinton on the west, east to Ashtabula, and south to Akron and Canton, said Brett Lindsey, chief operating officer of OneCommunity.

OneCommunity is a nonprofit regional development organization with a charter to lessen the burden of government by providing access to advanced networking technology for area governments, schools and health care providers, Lindsey said. IT programs usually sink so much of their budgets into infrastructure that little money is left for investment in services and collaboration, creating isolated silos of technology. "If we can free up capital, they can use it for other things," such as improving services and stimulating the economy, he said.

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The network now connects about 700 facilities in 24 counties, and by the time the buildout finishes in 2013, about 1,500 sites are expected to be online with the network. The organization estimates about 800 major sites within range of the network will be able to connect with it because of discounted rates that will be possible through the American Recovery and Reinvestment Act grant.

OneCommunity's biggest customer is Cuyahoga County, Ohio, which includes Cleveland and is the largest county in the coverage area.

"We're using it to connect 28 of our government sites to do both data and voice connectivity" for 35 agencies, said County CIO Jeff Mowry. "The biggest thing it has done for us is to help us control our costs, providing us with low-cost, 24/7 support."

The expansion has received funding from a $44.8 million grant through the Commerce Department's National Telecommunications and Information Administration. It is a building block for improved collaboration and cost sharing. "What we're hoping to do is build out the regional network to do more shared IT services in the region," Mowry said.

OneCommunity origins

OneCommunity began in 2003 as OneCleveland with a gift of fiber-optic cable from two area networking companies. Since then, it has expanded its network and scope with the support of area foundations, linking 19 area hospitals through the Federal Communications Commission's Rural Health Care pilot program and becoming OneCommunity. The network now serves more than 80 hospitals, in addition to other school and government sites, and it has received another $19 million grant to get consumers online in underserved areas.

The NTIA grant was awarded in 2010 as part of $4 billion authorized through the American Recovery and Reinvestment Act. The grant is funding 64 percent of a 2.5-year, $70 million network expansion program by a consortium that includes OneCommunity, Lorain County Community College, the Medina County Port Authority and OARnet, the state's higher education network. The program will add another 900 miles of fiber to OneCommunity's existing network infrastructure, roughly doubling its footprint.

The task of building a network from scratch is not simple, Lindsey said. "We're building hundreds of miles of plant, some underground and some on poles," which requires dealing with numerous local utilities. "It's a fairly major undertaking. But when the fiber is available, there is plenty of interest in using the network."

The backbone of the network is a 10 gigabit/sec pipe, though the organization has plans for expanding that backbone capacity to 40 gigabits/sec. Some enterprises get a full 10 gigabits/sec connection to the network, but most of them get 1 gigabit/sec, with 100 megabits/sec links between sites on their wide-area networks.

"We don't really play well for anyone under 100 megabits/sec," Lindsey said.

Network gear

Networking equipment is mostly from Cisco Systems, Juniper Networks and Fujitsu. The most recent build uses the Flashwave 9500 and 7120 Micro Packet Optical Networking Platform from Fujitsu Network Communications, which integrates multiple transport technologies on a unified optical infrastructure so that services do not have to be provisioned across multiple devices on the infrastructure.

"It's a multiservice provisioning platform," said Bill Beesley of Fujitsu's Packet ONP strategy group. "Worldwide, the industry is migrating toward Ethernet transport. We're seeing the demand for Carrier Ethernet service driving the next transformation in networking."

The Flashwave platform integrates connection-oriented Ethernet and Layer 1 transport technologies and delivers high-bandwidth, high-quality packet Tone and Wavelength-Division Multiplexing services. The 9500 provides up to 40 gigabits/sec; the 7120 is a combination WDM and intelligent edge service delivery platform that handles optical metro-edge networking and managed wavelength service delivery.

Cuyahoga County began working with OneCommunity in 2008, and the organization's expanded capabilities come at an opportune time for the county. The county is reorganizing its IT operations under a new government in the wake of corruption scandals that have garnered nearly a century of prison time for 27 public officials, including the former director of information services who was sentenced in August to three years for bribery. In 2009, voters who were fed up with the corruption voted to change the form of government from the old three-member board of commissioners to one with a strong county executive and an 11-member council, each elected from a district.

New government model

"It's a new county government for us," Mowry said. "I'm the first CIO the county has hired. "Our focus so far has been consolidation and transparency."

During the tenure of the former information services director, there had been no enterprise organization, only individual agency offices, each with its own IT organization. Mowry is working to create a unified IT organization, and a lot of his work to date has been on internal organization. "We're lacking some essential services here," he said. "We didn't have a centralized help desk."

One of his office's efforts has been to consolidate voice and data networks. "We've been rolling out voice over IP to all of our locations," he said. "The cost savings has been a big driver for us." So far the county has been using only basic voice services on its Cisco VOIP system. "We'd like to look beyond the traditional services and take more advantage of the applications we could put on that," such as unified messaging and video capabilities.

The county also is beginning to look beyond its boundaries in providing services via the OneCommunity network.

"We're just now starting to look at regional issues," Mowry said. The county's network is being used by 31 law enforcement sites to link to the Cuyahoga Regional Information Systems emergency law enforcement network, and the county also is doing some Web hosting for several municipalities, in addition to providing VOIP service for two towns.