



Tryon, North Carolina

	Tryon
Population (2000)	1,752
Municipal budget (2006)	\$5.3 million ⁵⁶
Per capita income (2000)	\$21,350
Median household income (2000)	\$31,450
Poverty rate (2000)	14%
Minority population (2000)	23%
Proximity to urban center	48 miles to Spartanburg, S.C.
Proximity to interstate highway	26 miles
Strategic approach	Broadband Internet
Time frame	2000-2007

A rural community cut off from state-of-the-art broadband technology takes matters into its own hands. Tryon finances and builds a fiber-optic cable network to provide residents and businesses with broadband Internet access.

In an era of global communication and digital learning, the rural town of Tryon created a cutting-edge fiber-optic network to connect schools, public sector officials and businesses to the Internet.⁵⁷ Plagued by slow and inconsistent online access, Tryon's leaders appealed to private Internet providers to upgrade the local network. Rebuffed, community leaders took matters into their own hands. In 2002, a volunteer committee of citizens spearheaded the effort to obtain grant funding and build a seven-mile high-speed fiber-optic network from Tryon to the county seat, Columbus. By upgrading its broadband capacity, Tryon is providing local businesses, residents and public school students with the Internet infrastructure necessary for each to compete globally. "This network is important to Tryon's future economic success," said Kipp McIntyre, the Polk County economic development director. "Fiber is as essential to businesses today as electricity and water was to businesses in the past."

The community and its history

Tryon is situated two miles from the South Carolina border in southwest North Carolina. Typical of many remote rural communities, Internet access and digital literacy were continuous challenges for Tryon. By the late-1990s, the slow Internet connection prevented the county's only hospital, St. Luke's, from sending X-rays or other large medical files to regional medical institutions. New economy businesses, including a

⁵⁶ Interview with Susan Bell, Tryon town clerk, May 15, 2007.

⁵⁷ Fiber optics transmit information from one place to another using ultra thin "strands" of pure glass fiber. The major benefit of fiber (as compared to DSL or cable), especially for rural communities, is that it can transmit data extremely quickly over very long distances. Because of its thinness, fiber strands can be bundled together to transmit larger volumes of data. The relatively high cost of fiber optics comes from having to lay down new strands of fiber along roads. Digital Subscriber Lines (DSL) or cable transmit data via copper phone or cable wires. The benefit of such a system is that these wires are already in place and the transmitters and receivers necessary for the system are less expensive than those for fiber optics. The biggest downside to DSL is that it works best when a home computer is within a few miles of an Internet provider's office.

nanotechnology business, also were in need of a faster network if they were to remain competitive. Jeff Byrd, owner/editor of the local newspaper, the *Tryon Daily Bulletin*, summarized the situation in Tryon: “We had very minimal bandwidth coming into town. We weren’t even past dial-up. Businesses and schools were spending a fortune to patch together a faster Internet connection through their phone lines.”

In light of Tryon’s technology limitations, town leaders approached several private Internet providers to explore the possibility of updating and expanding broadband coverage in their community. One by one, each provider declined, saying that demand in Tryon was insufficient to justify the cost. At that point Tryon’s leaders had three choices: They could wait for the private sector to react when market conditions indicated sufficient demand to do so. They could subsidize a private company to upgrade the town’s broadband infrastructure. Or they could provide a faster Internet service themselves.

The strategy

Tryon has chosen to be proactive in providing Internet service by creating a premium fiber-optic network for residents, schools and businesses. In 2001, leaders from Tryon and Polk County used a \$10,000 grant from e-NC, a statewide technology initiative, to form a steering committee and investigate the viability of a fiber-optic network for the community. By 2002, the committee concluded a network was feasible and applied to e-NC for funding. Instead of settling for a DSL connection, the committee wanted to become a leader in Internet service by building a fiber-optic system capable of transmitting information over 30 times faster than DSL.⁵⁸ E-NC awarded the community a \$375,000 grant in 2003. Later that year, the Polk County Community Foundation awarded another \$23,000 to the steering committee.

With nearly \$400,000 in grant money, the committee oversaw installation of a seven-mile fiber arc from downtown Tryon to neighboring Columbus. To establish a customer base, the committee elected to run the arc past Polk County’s government offices, all the local schools, a number of businesses and the Polk Community College, all interested consumers. The schools purchased 6 Mb of bandwidth (or a few fiber strands) and put their student management system online, allowing for rapid communication across the district and with the Department of Public Instruction some 265 miles away in Raleigh. Perhaps most important, Tryon’s strategy resulted in widespread access to cutting-edge technology infrastructure, allowing its rural residents and public school students to stand on a level playing field with their urban neighbors.

To manage the fiber-optic network, called PANGAEA, the committee incorporated E-Polk Inc. as a 501(c)3 nonprofit organization operated by an all-volunteer board. As a nonprofit, rather than a government department, the network can service businesses as well as schools and government offices. Furthermore, operating as a nonprofit rather than a for-profit business

⁵⁸Feser, Edward. “Encouraging Broadband Deployment from the Bottom Up.” *The Journal of Regional Analysis and Policy*. Volume 37 (1), pp. 69-72.

allows the organization to sell services at the lowest possible price. Because grants helped finance construction of the network, for example, that cost does not have to be passed on to customers. For a business in downtown Tryon, for example, subscribing to the network currently costs \$100 per month, roughly the same price as DSL. For large users, the savings are even more substantial. "I estimate we save about \$2,000 per month by using PANGAEA," said Dave Scherping, Polk County Schools technology director. "That's the equivalent of nearly one teacher's salary per year."⁵⁹

The model seems to be paying off. E-Polk was awarded a combined \$1,040,000 in grant money from AdvantageWest and the Golden LEAF Foundation in 2006 to connect economically depressed Rutherford County to the PANGAEA network.

What are the lessons from this story?

Broadband infrastructure is critical for economic growth. The long-term outcome of Tryon's strategy is years and perhaps decades off, but the community's intuition – that broadband infrastructure is a key ingredient to prosperity – is in line with evidence from elsewhere. Recent research by the U.S. Economic Development Administration suggests that higher rates of economic growth occur in areas served by broadband versus a matched sample of areas that are not.⁶⁰ Broadband Internet is the new highway, and communities will be wise to plan ways to get their students, businesses and residents connected.

Rural communities can be leaders in connecting their residents to broadband Internet. Rural communities interested in updating telecommunications infrastructure face the challenge of an insufficient local market. In some cases, Internet providers argue that the local market is not large or profitable enough to provide high-speed Internet service. In response, many communities choose to wait for their market to grow and justify private investment. But by waiting, small town leaders are likely passing on economic growth. Instead of waiting, Tryon created its own top-quality Internet network. In doing so, E-Polk Inc. and its president, Jeff Byrd, are proving that there is a market for high-speed Internet in small town America. "Every day I have more and more businesses and residents calling me to say, 'DSL is too slow. We need your service,'" Byrd said.

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⁵⁹ "PANGAEA and e-Polk, Inc." Creating Success. From the website www.e-nc.org/success_stories.asp. Accessed May 9, 2007.

⁶⁰ Gillett, Sharon E., William H. Lehr and Carlos A. Osorio. Measuring the Economic Impact of Broadband Deployment. Washington, D.C.: U.S. Economic Development Administration, 2006.