

Franklin County, VA Attracts Economic Development with High-Speed Wireless Broadband



“Broadband is quickly becoming a utility, same as electricity and phone service, and is critical for communities to attract new development and support both existing businesses and the growth of new business. Franklin County continues to be the fastest growing locality in this region of Virginia.”

– Sandie Terry, IT Director, Franklin County, VA

Situation: Expand broadband services and connect remote agency offices

With a large land area, dispersed population, and limited funds, Franklin County, VA looked for a way to cost effectively meet the broadband demands of its residents, as well as reduce county operational costs. Taking an innovative and highly creative approach, Franklin County worked with local landowners, partnered with B2X (a small, local ISP), and leveraged grant funding to expand broadband services throughout the 721 square mile area for a total county investment of \$83,000 from the general fund and a \$50,000 federal grant (less than 24% of the projected cost).

Solution: Motorola Wireless Broadband Point-to-Multipoint

Using existing tower sites and working with landowners to gain access to place additional towers on private property in exchange for reduced service fees, Franklin County enabled a network design that provided wireless connectivity from 18 towers and water tanks, including redundant network paths. B2X then implemented a Motorola Wireless Broadband Point-to-Multipoint system to deliver scalable, interference-resistant, high-speed connectivity to residential, business, institutional and municipal locations throughout the county.

Result

Internet connectivity in Franklin County has grown from one tower and five businesses served in 2005 to 150 businesses, 1,500 residential customers, 16 fire and EMS stations, and 15 county buildings from the courthouse complex to libraries and family services. And the numbers are growing daily. “We were able to grow a wireless mesh network from one tower to 18 towers in just over two years,” says Sandie Terry, IT director, Franklin County. “The County is now positioned to provide more efficient services and bring more opportunities to local government, our citizens, and the businesses located in this County.”

Franklin County, VA

- 721 sq. miles in rural southwestern Virginia
- Population 52,000 and 3,800 businesses
- Fastest growing county in western Virginia

Situation

- Address residential demand for high-speed broadband
- Attract new business and support existing business
- Improve connectivity for all remote county agencies
- Provide access to public safety data for fire and rescue stations

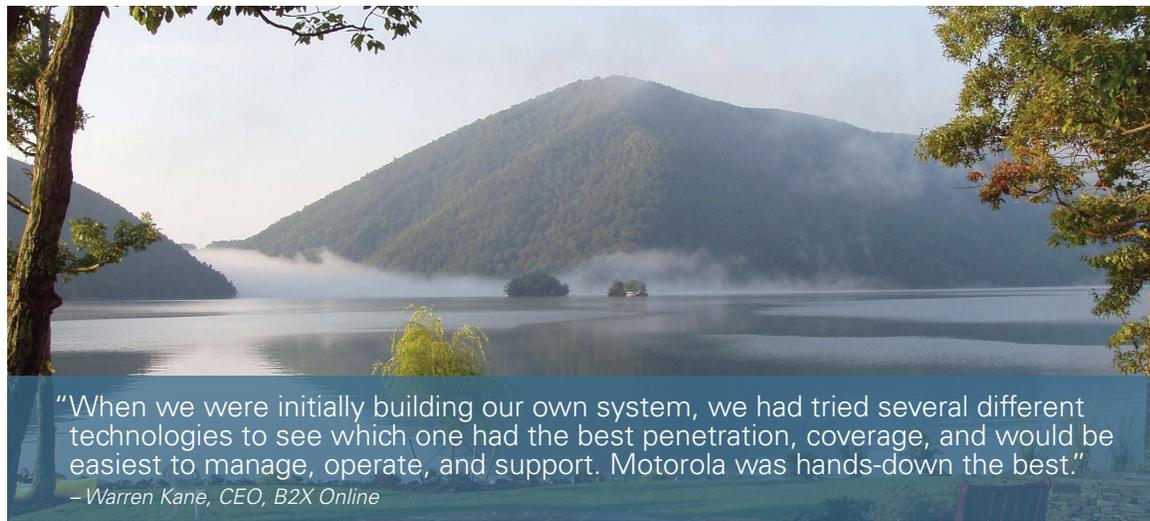
Motorola Solution

- Wireless Broadband Point-to-Multipoint
- Point-to-Multipoint Backhaul Module
- Advantage Access Point

Results

- Wireless connectivity delivered to more than 150 businesses, 1,500 residents, and 30 county agencies
- Franklin County continues to be the fastest growing county in western Virginia
- Awarded Virginia's 2008 “Technology Award of Excellence”





"When we were initially building our own system, we had tried several different technologies to see which one had the best penetration, coverage, and would be easiest to manage, operate, and support. Motorola was hands-down the best."

— Warren Kane, CEO, B2X Online

Funding Opportunities

The American Recovery and Reinvestment Act was designed to provide funding that will help organizations address long-neglected challenges. Motorola has developed a website that provides valuable information on available grants, requirements, application deadlines and case studies. In addition, Motorola's team of specialists is available to help identify the right grants and solutions that will enable organizations to address unique challenges.

For more information, go to www.motorola.com/recoveryact

CHALLENGE: Lack of affordable broadband

Located in the foothills of the Blue Ridge Mountain, Virginia's Franklin County is 721 square miles of small towns and sparsely populated rural areas. While the idyllic rural beauty of the county attracts a growing population, lack of broadband access was limiting the opportunity to attract new businesses, as well as support the county's residents, schools, public safety agencies, and existing businesses.

"The economic development team was being challenged that the County's broadband offerings were too limited and too expensive," says Sandie Terry, IT director, Franklin County.

The search for the right technology

The County considered several possibilities including cable, DSL, satellite, and fiber. Cable was eliminated because the current build-out only covered one-third of the region. The local telco's DSL and T1 connectivity limited coverage to the more populated areas and was also considered too expensive for most residents. The latency of satellite services would not support business demands; and fiber was cost-prohibitive and unable to meet terrain challenges and expanse of rural areas between communities. Wireless broadband seemed to be the perfect solution and a broadband assessment was conducted in 2004 and 2005 that mapped the most underserved areas.

The search for the right partner

The County issued an RFP for a WISP (wireless internet service provider) who would partner with them to design, deploy, own, and operate a wireless mesh network that would connect the County's fire/rescue stations, government facilities, and extend broadband connectivity to commercial customers and residents.

"We did not want to become an ISP and we were not looking for revenue," says Terry. "We were looking for someone who would partner with us and in exchange for reduced service rates, Franklin County would allow the provider to leverage existing structures, such as towers, water tanks, and utility poles to deploy the broadband solution."

B2X Online, Inc., a small provider located in Salem, VA, saw the potential in the partnership and responded to the RFP, proposing Motorola Point-to-Multipoint wireless broadband and discussing with Franklin County how they could best work together.

"We recognized the creativity of their plan and saw some synergy," says Warren Kane, CEO of B2X Online. "We knew that we could both benefit from this partnership."

Thinking outside the funding box

When budgets are tight, creativity is key when looking for funding sources. Because the wireless project would enable connectivity between the county's fire and rescue stations, as well as access to a centralized source for public safety data, the County was able to use part of a Homeland Security grant. In addition, the County provided B2X with access to existing towers, negotiated agreements with landowners to use silos and water towers as needed, and pre-paid for three to five years of service to enable B2X to fund initial capital assets in exchange for reduced fees to users. Franklin County also tapped the General Fund over three fiscal years (total of \$83K) for a new tower where one did not previously exist.

"You really have to think outside the box," says Terry. "There are a lot of ways to be creative and get the job done when you have limited funding."

SOLUTION: Motorola Wireless Broadband Point-to-Multipoint

The Motorola point-to-multipoint solution delivers scalable, interference-resistant, high-speed connectivity to Franklin County's business, institutional, and municipal locations, as well as providing cost effective service to residents throughout the coverage area. Although Franklin County uses 5.2 GHz, 5.7 GHz, and 900 MHz bands, Motorola's Point-to-Multipoint solution is also capable of frequencies in the 2.4 and 3.5 GHz bands. The solution provides exceptional performance and reliability, as well as high power, range and bandwidth that increases user satisfaction and optimizes ROI.

“When we were initially building our own system, we had tried several different technologies to see which one had the best penetration, coverage, and would be easiest to manage, operate, and support,” says Kane. “Motorola was hands-down the best. They had the features we wanted and it was the only solution with the level of DES (Data Encryption Security) we wanted. They also had the best support and the best service. We only had to spend ten minutes with the installers to show them the basics and they were able to go install it.”

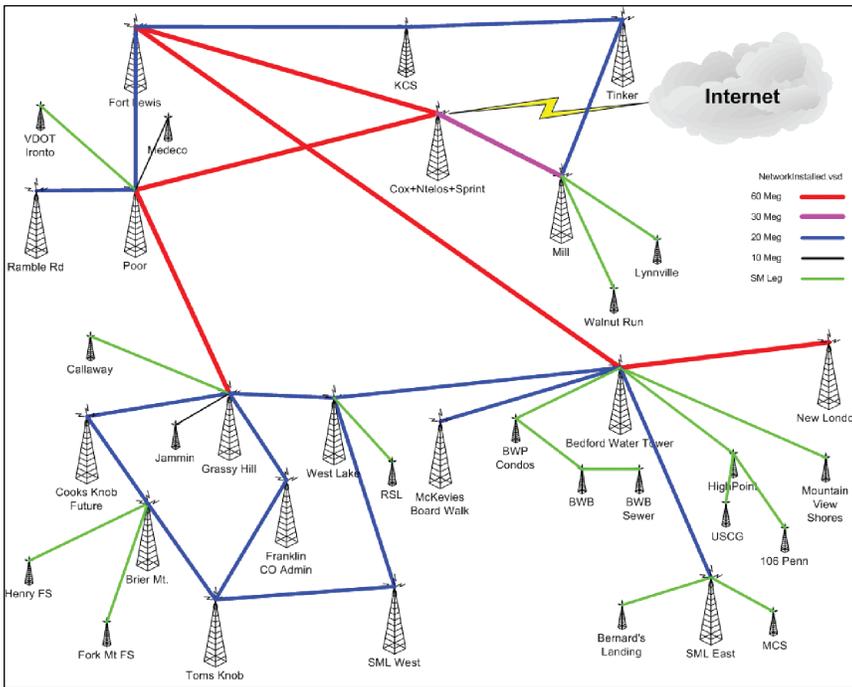
B2X reviewed the vertical real estate available and the sites outlined by the county to develop an action plan for deployment, creating an initial coverage map and centralizing the plan around the county’s fire stations and other points of interest. As the deployment moved forward, B2X updated the plan and added transmission sites as needed.

RESULTS: Wireless connectivity across the county

Broadband is critical to a community’s ability to attract new economic development, continue supporting the growth of existing businesses, and enable connectivity for residents, government agencies, educational facilities, libraries, and other institutions. In early 2005, B2X served 18 businesses around Roanoke from a single tower. Today, the company provides secure, high-speed Internet from a wireless network consisting of 18 towers to over 1,500 residential customers, 150 businesses, and 30 county agencies, a phenomenal growth that occurred in less than two years.

The partnership between the small WISP and the cash-strapped county in rural Virginia has enabled multiple benefits, including:

- Increased governmental efficiencies:** Prior to the implementation, a county employee had to travel between agency facilities and download data onto a USB flash drive, then consolidate the data at the county’s central database. The process was cumbersome and expensive and there was no shared access. Today, the data can be uploaded remotely and county employees have full access to critical public safety data quickly and easily through the network.
- Cost reductions:** The County is currently moving all of its facilities to a consolidated voice-over-IP (VoIP) system to provide more efficient services over the new wide area network. The strategy has resulted in a 35 percent reduction in telephony expenditures for the past two fiscal years. “If you run a business using VoIP, the network absolutely must provide high quality of service,” says Terry. “This network is rock solid.”
- Rapid ROI, reduced TCO, and continued growth:** Speed to ROI was a concern for B2X and Motorola’s Point-to-Multipoint solution was designed to enable rapid return on investment. “We achieved ROI in about 16 months for our residential business and about eight months for commercial business,” says Kane. “That’s outstanding.” In addition, the reliable hardware has a proven low field failure that further minimizes total cost of ownership. Business has continued to grow for B2X, expanding beyond the County into neighboring localities, enabling continued improvements to the network, and providing greater opportunities for local government and business.



Multiple paths to and from each transmission location ensured network reliability and B2X adapted its own network to use advance routing schemas and allow for auto network recovery and re-routing of Internet traffic in the event of a failure. That strategy created a redundant network where each transmission location was fully self-sufficient, without the need to have a centralized server or hub for all traffic to pass through.



State of Virginia presents technology award to Franklin County

At the 10th annual Commonwealth of Virginia Innovative Technology Symposium in 2008, Governor Timothy M. Kaine awarded Franklin County with one of the Technology Awards for Excellence for the County's innovative approach to the use of technology in improving government services and efficiency. Receiving the award on behalf of Franklin County, Terry said, "This award demonstrates

Franklin County's leadership in the state in addressing the challenges facing local governments with innovative solutions."

With an eye to the future, Franklin County is now working with the Appalachia Colleges Community Economic Development Partnership (ACCEDP) to further expand the service through a community outreach to bring high-speed Internet to underserved, high demand areas.

Center for Digital Government recognizes Franklin County

The 2009 Digital Counties Survey is an annual study by the Center for Digital Government and the National Association of Counties (NACo) which identifies best practices and recognizes those counties with exemplary use of digital technologies to become more efficient and better able to serve their citizens. In the category of "less than 150,000 population" Franklin County was a winner for the seventh annual 2009 Digital Counties Survey. NACo Executive Director Larry E. Naake said counties "are using innovative technology to communicate more effectively with their citizens and businesses. The Digital Counties Survey illustrates the innovation and tenacity of counties across the country."



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