

Case study

Siemens Enterprise Communications provide wireless broadband connectivity to Washtenaw County covering 720 miles.

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Summary

Located in southeast Michigan, Washtenaw County encompasses 720 square miles and has a population of more than 347,000 people. Residents live in urban, suburban, and rural areas. Among the largest cities in the county is Ann Arbor, home to the University of Michigan and Eastern Michigan University.

Like many other counties, Washtenaw is seeing increased demand for wireless

connectivity from residents and business owners. County officials launched a project called "Wireless Washtenaw" to bring wireless broadband service to all areas of the county – and especially to suburban and rural residents who could only access the Internet using slower-speed dialup connections. Washtenaw is using technology from Siemens to create what will be one of the largest Wi-Fi networks in the nation in terms of coverage area.

Challenge:

- > Providing economical, broadband wireless connectivity throughout a 720-square-mile area that includes cities, suburban and rural communities
- > Constructing the countywide network in a relatively short period of time to address the needs of county residents and business owners

Solution:

- > Siemens Wi-Fi Mesh radio network
- > Siemens Wireless Integration Platform
- > Services, including installation, design, RF engineering, maintenance, customer service and support, monitoring and remote network management

Benefits:

- > Convenient and secure wireless Internet access throughout the county
- > Improved quality of life for residents and support for economic growth in the county
- > More economical use of wireless technology for county workers who spent a lot of time in the field accessing mobile applications
- > Support of new applications such as Wi-Fi-enabled parking meters, video monitoring for security and wireless transmission of real-time data

Washtenaw County

Officials of Washtenaw County recognized the need to provide high-speed wireless Internet access to residents and businesses throughout the county. Many people, and particularly those who live and work in the rural, western portion of county, have limited options for access.

Building a wireless county

In 2005, the county launched a project called Wireless Washtenaw, with the goal of providing broadband wireless connectivity throughout the 720-square-mile area. "We were hearing from people in the county – and especially in the western part where they really have no options at all – that they wanted and needed [broadband wireless access]," says David Behen, Deputy Administrator of Washtenaw County.

Washtenaw County officials met with representatives from different entities including local governments, universities and school districts to explain the vision for Wireless Washtenaw and to ask for their support in planning the project. The county put together an advisory board and steering committee, as well as committees to oversee IT, business, marketing and communications aspects of the wireless network project.

County officials next put out a request for information and received responses from more than 20 vendors. Business leaders and residents from community and the local universities with expertise in IT and wireless technology helped determine which technology solutions might best suit the county's needs.

A request for proposals drew responses from four service providers and their partners, and the county narrowed the choices down to two, Behen says. After careful consideration, Washtenaw selected a team of Siemens and Internet Service Provider 20/20 Communications of Ann Arbor, Michigan, to build the wireless infrastructure.

"Siemens and 20/20 not only had the best technology solution but the best business plan, and met the vision and mission of the county," Behen says. One of the key criteria in the selection, he adds, was Siemens' ability to upgrade the network to support voice over IP telephony, which the county plans to adopt in the future.

A turnkey solution

The two companies are providing a turnkey solution, with 20/20 owning and operating the network and Siemens serving as the equipment vendor, systems integrator and services provider. The equipment includes the Siemens Wi-Fi Mesh radio network and Siemens Wireless Integration Platform for authentication and provisioning. The Wi-Fi mesh network delivers seamless, ubiquitous wireless roaming in cities as well as rural environments.

Siemens is providing services including installation, design, RF engineering, and maintenance. Managed Services from Siemens includes customer service and support, Network Operating Center (NOC) monitoring and remote network management services. To ensure maximum system performance and availability, Siemens will manage and monitor the network around the clock and provide analysis and make recommendations for enhancements when needed.

Siemens and 20/20 conducted a three month pilot which ended in February 2007 and installed the Siemens wireless infrastructure in Ann Arbor, Saline, and Manchester. The pilot has been accepted by the county and the stage is set for a full-scale deployment by the end of 2007. Major equipment installation work is anticipated to begin in April, says Robert Wolff,

president of 20/20, the largest provider of wireless Internet service in Southeast Michigan. The larger urban areas will use mesh networks, suburban areas and smaller cities and towns will deploy some meshing, and rural areas will have point-to-multipoint connections, Wolff says.

A project of this magnitude doesn't come without challenges. "The most daunting task is being able to deploy this in a short period of time," Wolff says. In order to expedite the process, the county plans to install equipment in various locations simultaneously, using different groups of contractors with expertise in rural or urban wireless implementations, he says. "We had great success using municipal workers to do the pilot," Wolff says. "We will contract with them to do a mesh network in the urban areas."

When the project is complete, Washtenaw will be able to provide convenient and secure wireless Internet access throughout the county. This will help improve the quality of life among residents and also support the economic growth of the county, Behen says. This wireless initiative will be implemented without the use of public tax dollars, will bring free, basic wireless Internet access to anyone in the county, and higher-speed access for a fee.

New wireless applications

Hundreds of county workers who spend a lot of time in the field, including people in health-care, law enforcement, billing and water inspection, will be able to use the wireless network for a variety of mobile applications, Behen says. Currently many of these workers must buy wireless cards and pay a high monthly service fee to access service, he says. With the new wireless capability, they will be able to take greater advantage of portable devices such as laptops and tablet PCs.

Wolff says the broad wireless coverage will enable new applications such as Wi-Fi-enabled parking meters, video monitoring for security, and the wireless transmission of real-time data used for monitoring and controlling equipment in areas such as water and waste control, energy, and transportation.

It's difficult to calculate the financial benefits the county will accrue because of the wireless network, Behen says. "But the improvements in quality of life and economic development will be significant [because of] this project," he says.

Future plans call for voice over IP telephony service, although it's not certain when that will be available. The county will maintain a core group of advisors from the Wireless Washtenaw committees to discuss other technologies that the county might adopt in the future.

Creating a wireless network is a building block to Fixed Mobile Convergence (FMC) and Siemens' LifeWorks strategy of achieving anytime, anywhere communications. LifeWorks is a vision for open unified communications and collaboration, which addresses today's fragmented communications landscape by delivering a uniform user experience based on secure open standards. By integrating communications across multiple protocols, networks and devices, LifeWorks creates a unified domain that enables seamless collaboration and access to people and critical information, regardless of geographical location.

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