The Computerworld Honors Program

CASE STUDY

LOCATION:
Chaska, Minnesota, United States

YEAR:
2006

STATUS:
Laureate

CATEGORY:
Government and Non-Profit Organizations

NOMINATING COMPANY:
Siemens Information + Communications Networks Inc

ORGANIZATION:

City of Chaska, Minnesota

PROJECT NAME:

City Wireless Mesh Network Management

Summary

Chaska is one of the first communities in the country to deploy a citywide Wi-Fi network, called chaska.net, and the first to operate a municipally hosted ISP over a mesh Wi-Fi system.

As the number of chaska.net subscribers grew, Chaska officials realized that the city did not have the resources in place to support customers effectively, with only two or three temporary employees to support providing phone support to subscribers.

"We needed a partner to manage contact center calls and responses, as well as network performance," said Dave Pokorney, city administrator for the City of Chaska. So, the City of Chaska began evaluating vendors in the fall of 2005, and officials determined that Siemens Communications was the only company that could deliver a comprehensive managed services offering with all of the elements they were looking for.

"Siemens demonstrated that it could provide the level of experience and skill needed to deliver end-user and technical assistance services as well as isolate and eliminate network problems through proactive remote monitoring," said Pokorney.

Introductory Overview

Chaska, Minn., a suburban community located just outside the Twin Cities area, prides itself on delivering innovative services to increase the quality of life of its residents. For example, to ensure consistent levels of service and pricing, the city launched its own electricity utility.

In 1998, city officials discovered that telecommunications providers in the area weren't meeting the broadband data transmission needs of the schools in the community. To resolve the problem, Chaska created chaska.net, a wireless Internet service provider owned and operated by the city. Chaska.net initially used only wireless point-to-multi-point technology to provide connectivity.

In 2004, with demand for broadband connectivity on the rise in the community of 7,500 homes and more than 18,000 residents, chaska.net constructed a metro-scale Wi-Fi network using a combination of Tropos Networks' MetroMesh architecture, point-to-multi-point wireless

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backhaul connections and the city's existing fiber network.

Benefits

By outsourcing the support and management of its network to Siemens Communications, the City of Chaska has been able to provide a higher level of network reliability and substantially improved customer service, leading to greater customer satisfaction. The city can now focus on its core business of enhancing the quality of life of its residents and expanding chasta.net's subscriber base.

With Siemens HiPath Managed services, "we know that any problems related to the network itself are being resolved," says Noel Graczyk, administrative services director for the City of Chaska. That helps to increase network uptime and minimize failures. A Network Performance Management capability tracks network performance statistics that can be used to recommend enhancements as the chaska.net subscriber base and overall network is expanded.

"Siemens is not only monitoring the network 24/7—something we did not have the resources to do internally—but is also providing features that allow us to improve the performance of the network," Graczyk says. "And the Siemens help desk constantly communicates with NOC services, allowing us to manage what were two separate problems."

Subscribers now benefit from expanded hours of coverage offered from the Siemens service desk and quick resolutions to their problems. Chaska officials believe that the improvements in support, coupled with better network service, will lead to increases in the number of subscribers. At the time Siemens began supporting chaska.net, the network had about 2,300 residential and business subscribers. The city's goal is to reach 4,000 subscribers within two years, says Pokorney.

The expansion in subscriber base is expected to come from two sources: former customers who left because they were not satisfied with the quality of support services, and new customers from the growing number of households in the community. The City of Chaska launched an intensive marketing campaign to promote the fact that network performance and customer support have been substantially improved. The program included direct mailings to households and local news coverage about the change in service. "But word of mouth is the most effective marketing," says Pokorney. "We're hoping customers will see a difference in service and tell others about it."

The Importance of Technology

As one of the wireless industry's most experienced solutions providers, Siemens offered the City of Chaska its end-to-end mesh Wi-Fi solutions for fixed network operators (FNOs) and Mobile Network Operators (MNOs).

The company's wireless network portfolio included base stations as well as self-installing residential customer premises equipment (CPE) and outdoor mounted business CPE. Mesh Wi-Fi could be used for a number of applications such as last-mile broadband connections, wireless digital subscriber line (DSL) services, voice over Internet protocol (VoIP), hotspot backhaul and high-speed enterprise connectivity for small, midsized and home-based business.

Siemens also took over the management and support of a separate wireless, point to multipoint network service—not based on Wi-Fi— that the city had been offering to business customers

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for five years.

"That integrated solution was something we did not find with other vendors," adds Graczyk.

Additionally, Siemens now monitors performance of the mesh wireless system and back-end network infrastructure, which includes the supervisory control and data acquisition (SCADA) components that continuously manage the city's water supply from the NOC. By monitoring and managing the SCADA components, city officials say they have improved performance, have better control of the delivery of water throughout the municipality and minimized the risks of system failures.

Originality

Chaska was one of the first communities in the country to deploy a citywide Wi-Fi network, and the first to operate a municipally-hosted ISP over a meshed Wi-Fi network.

As the subscribers grew, Chaska did not have the resources available to support customers effectively, with only two or three temporary employees to support providing phone support to subscribers.

"We needed a partner to manage contact center calls and responses, as well as network performance," said Dave Pokorney, city administrator for the City of Chaska. So, the City of Chaska began evaluating vendors in the fall of 2005, and officials determined that Siemens Communications was the only company that could deliver a comprehensive managed services offering with all of the elements they were looking for.

"The overriding reason we created the partnership with Siemens was to take our Internet service to the next level," says Pokorney. "We were providing good service before, but to provide great service we needed to improve network support and management."

Putting chaska.net into the hands of an experienced service provider has given the City of Chaska confidence that it can provide its residents and business customers with affordable, high-quality Internet access.

Success

Siemens Communications began supporting chaska.net in early February 2006, by monitoring performance of the meshed wireless network as well as back-end network infrastructure that includes the city's SCADA (supervisory control and data acquisition). SCADA components continuously manage the city's water supply from the NOC. By monitoring and managing the SCADA components, the city has improved performance and minimized risk of failure of the systems that control the delivery of water through the municipality

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Difficulty

As the number of chaska.net subscribers grew, Chaska officials realized that the city did not have the resources in place to support customers effectively. Chaska had only two to three temporary employees to support providing phone support to subscribers.

"We weren't able to respond to calls as they were coming in. Most of the time callers ended up leaving a voicemail message and the support staff would have to respond on a return-call basis," said Graczyk. "We needed to improve the call center response so that customers could talk live to an operator and deal with problem resolution during the initial call."

Making matters worse, in June of 2005 chaska.net began to experience significant problems with network performance. "There were areas of the city where the network was operating, but not to maximum efficiency," says Graczyk. "Because of that, customers at times were not able to connect to the network or they had a difficult time connecting."

More calls began to come in to the support center, putting an even greater strain on the small staff. "There were two sets of problems," Graczyk says. "The first was related to the ongoing performance of the network. The second was related to customer-usage of the network, such as not knowing how to use email or firewall protection. We didn't have in place the tools we needed to log in and track and analyze the calls that were coming in so we could see which were repeat calls about old problems and which were new problems."

As a result, Graczyk says, customer usage issues bled into network performance issues and this complicated the process of resolving problems for customers in a timely manner.

Chaska.net and Tropos made significant changes in the network to improve performance. "But the inherent problems of managing and monitoring the network on an on-going basis and providing efficient customer support were still there," Graczyk says.

Largely because of the difficulties in providing effective customer support and a more reliable network, chaska.net lost a large number of its subscribers. City managers decided Chaska needed to hire a company that would take over support and provide continuous monitoring of the wireless network.