



Customer Case Study

Bringing New Businesses to Madison with Wireless Networking

EXECUTIVE SUMMARY

- City of Madison, Wisconsin
- Government
- Number of employees, approximately 1,200

Business Challenge

Improve public safety and citizen services, and enhance business development with citywide wireless Internet access.

Network Solution

Cisco Wireless Mesh Network solution delivers secure, scalable wireless Internet access to airport and city center.

Business Results

Wireless solution enhances productivity of city employees and citizens, and will scale to support new public safety and utility applications.

Madison, Wisconsin depends on the Cisco wireless solution to deliver better citizen services, enhance public safety, and spur economic development.

BUSINESS CHALLENGE

Madison, Wisconsin is a university town that offers a unique combination of urban culture, natural beauty, and small-town charm. Part of the key to Madison's success is its ongoing commitment to offer superior public services and create a climate that is friendly to economic development. Technology plays a vital role in delivering services that help businesses of all sizes to grow and prosper in Madison.

"The City of Madison has long prided itself on being at the forefront of available technologies, whatever they happen to be," says Mayor Dave Cieslewicz. "Certainly one key to effective communication is wireless Internet access across the city."

Welcome to the City of Madison, Wisconsin 

When Madison's airport began exploring options to provide wireless Internet access to travelers, civic leaders saw an opportunity to expand the initiative and build a more complete service that could support local businesses and its 220,000 residents as well.

"The airport was looking at installing Wi-Fi wireless access, and they were going to use a standard vendor who only offered it at that location," says County Board Chairman Scott McDonell. "We thought that was a wasted opportunity—we believed it should also work downtown at the hotel, at a coffee shop, and in people's homes."

"Mayor Cieslewicz encouraged us to look into wireless technology for implementation in Madison," says Dick Grasmick, information services director. "We wanted to let our mobile workers connect to the Internet and our city network. We have police and fire departments, as well as building inspectors, streets people, and health professionals, who set up clinics at various locations. Enabling them to connect to the tools that they need to do their job would provide a tremendous advantage in productivity."

Madison developed a request for proposal to create a wireless network that would serve Madison and its neighboring communities. The network would have to be widely accessible throughout the city, and offer security to protect users' data and communications. It would have to integrate smoothly with the city's existing network, yet be able to expand easily as part of a steady growth plan.

NETWORK SOLUTION

After evaluating a number of vendors, Madison partnered with Cellnet Technology, Inc., a leading provider of real-time fixed network and advanced metering infrastructure solutions to the utility industry. Cellnet agreed to install the network at no cost to the city, and would earn revenue from service agreements with Internet Service Providers (ISPs). Cellnet, a Cisco® Registered Partner, chose a Cisco network solution, which could be smoothly incorporated into Madison's existing network.

At the heart of the network is the Cisco Wireless Mesh Network solution that delivers cost-effective, secure outdoor wireless LANs. The Cisco Wireless Mesh Network solution gives Madison innovative options to accelerate its communications and service delivery to employees and citizens. It is easy to deploy and simple to manage and can quickly scale to support new network devices as they are needed.

“Our Cisco wireless network is very effective as a tool in attracting and retaining businesses, and it creates the image that we want as a city. We are very proud that we will be the first city of our size in America to have a border-to-border wireless network.”

—Mayor Dave Cieslewicz, City of Madison

The first phase of the deployment covers a 10-mile radius from the capitol building in the city center. Cellnet installed Cisco 4400 Series Wireless LAN Controllers and the Cisco Wireless Control System to manage Cisco Aironet® 1500 Series Access Points, which were attached to streetlights and utility poles.

“Cellnet required a highly scalable wireless mesh networking product for the Madison deployment, and Cisco was clearly the superior solution,” says Louis Kek, Cellnet's chief information officer. “The Cisco Aironet 1500 Series demonstrated outstanding ease of installation for this large-scale deployment with its self-discovery and self-configuration capabilities. In addition, we selected the 1500 Series for its dual-radio design, which helps with connecting low-power client devices, such as wireless laptop computers and handheld devices.”

Airport travelers can enjoy wireless Internet access, so they can stay productive even while traveling. In the city center, students, businessmen, and city employees can access the system to stay productive when they are moving about the city environs.

“It lets business employees downtown spend more time out of their office, and that can provide a real productivity advantage,” says McDonell. “A lot of people have meetings in coffee shops or restaurants, and now they can be productive there as well.”

“Madison is the home to many biotech and high tech industries,” says Cieslewicz. “Many people who now visit our city expect wireless Internet, at least downtown. Now we are able to provide that for them.”

City employees can take advantage of the mobility provided by the Cisco wireless infrastructure as well, checking e-mail or accessing tools and applications outside the office.

“Because this system will serve the entire city, it gives us the ability to deliver access to all of our public services via Wi-Fi,” says Cieslewicz. “It will allow us to deploy our resources in the most efficient way possible and to move quickly when necessary. That will enable us to deliver more timely services to people at less cost.”

“We wanted to be able to connect our existing wireless network with the new Cisco Access Points, and the new solution enables us to do that,” says Grasmick.

Working closely with Cellnet, Madison is also configuring the network to support automated meter reading for its utilities departments, which will save time and money and make billing more accurate and efficient. Instead of sending meter readers to a location, automated water meter readings will be transmitted wirelessly through the fixed network.

BUSINESS RESULTS

The first phase of the Madison network was completed in Spring 2006, and early tests proved the system to be reliable and easy to use.

“We have been very pleased with the availability of Wi-Fi access that we have achieved so far,” says Grasmick. “We have tested laptops out on the street, and access is available throughout an area one and a half miles from the center of the city.”

“The feedback has been tremendously positive, and we have heard nothing but compliments about the service,” says Cieslewicz. “If anything, people ask us why we did not offer the service sooner.

By using its wireless IP infrastructure to transmit voice and video, Madison hopes to enable its police and fire departments to work more effectively and make the most efficient use of limited resources.

“We are planning to use Wi-Fi to transmit video from police vehicles back to headquarters for command situations,” says Grasmick. “Wireless video will let police and fire supervisors to see exactly what is going on at a location—while it is happening.”

Mayor Cieslewicz expects the solution to have a major impact on his city’s reputation as an early adopter of leading technology—and on its ability to foster economic development.

PRODUCT LIST

Wireless

- Cisco 4400 Series Wireless LAN Controllers
- Cisco Wireless Control System
- Cisco Aironet 1500 Series Access Points

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Over time, Madison expects that the Cisco network will deliver a substantial return on investment by enabling the city to cut costs by eliminating redundant leased lines.

“We are currently leasing a lot of lines, but we plan to replace several of them with Wi-Fi access, which will provide a cost savings,” says Grasmick.

The network installation was cost-free for the city. Cellnet will sell wholesale bandwidth to local ISPs, who will package services under their own brands, at very competitive prices.

“The ISP is able to sell their services to the end user at a price that is 50 percent less compared to what they have today,” says Kek.

“We were able to have a win-win situation,” says McDonell. “Cellnet has to deal with just one entity—the city. And we get a seamless system. As a return on investment, it does not get any better than this.”

NEXT STEPS

Because its Cisco infrastructure was designed to grow and change to support new users and applications, Madison plans to aggressively extend its services throughout the city and beyond.

“Our long-term goal is to finish coverage for the City of Madison, flow out into the adjacent communities, then just keep going, to complete coverage for the whole county,” says McDonell.

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This customer story is based on information provided by the City of Madison, Wisconsin, and describes how that particular organization benefits from the deployment of Cisco products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

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