

The right way to WiFi

An HP-designed Cisco wireless mesh network shows municipal wireless can work



“We believed offering free WiFi access in our downtown core would convey the image Moncton wants to convey, but we had to be cognizant of costs. HP showed us the way to do it.”

—Dan Babineau, Director of Information Systems, City of Moncton

HP customer case study: The City of Moncton, New Brunswick, found a cost-effective way to offer free municipal WiFi, demonstrating its commitment to attracting young residents and high-tech businesses.

Industry: Public sector

Objective:

To support economic development and a technology-friendly image, Moncton, a medium-sized city in New Brunswick, wanted to offer free WiFi in its core downtown district—but only if it could do so cost-effectively.

Approach:

HP designed a Cisco outdoor wireless mesh network that could be piggybacked onto the city's existing Internet topography.

IT improvements:

- Wireless Internet now available in downtown core
- Scalable architecture means coverage can be expanded
- Network can be installed, maintained by city IS department

Business benefits:

- Project came in \$10K under budget
- Budget savings allows city to add additional access points
- Network implemented in only three days
- Mesh design means no added connectivity costs
- Low connectivity costs means city doesn't have to charge users
- Future maintenance costs incremental
- City can leverage network for its staff as well as citizen use



Like many other North American cities, Moncton, New Brunswick—population 126,000—knows its economic future depends on attracting entrepreneurs and technology-based businesses. That means the city itself needs to project a technology-friendly image.

What better way to project that image than to offer free municipal WiFi in its downtown center?

The challenge, of course, is that “free” isn't truly free. But with HP's help, Moncton found a budget-friendly way to implement a municipal wireless network, saving not only installation costs but ongoing connectivity dollars as well.

“Offering free WiFi was a way to invest in our infrastructure and show we’re a young, hip, vibrant city. Now it’s common to see people with their laptops sitting in our cafés, using our service. It’s heartening to see, and it sends a great message to our community.”

—Dan Babineau, Director of Information Systems, City of Moncton



Exciting vision, budgetary constraints

Dan Babineau, Director of Information Systems, City of Moncton, runs the city’s 15-person information systems department; it fell to him to make municipal WiFi a reality. It’s an assignment he embraced with enthusiasm. “We wanted to make our downtown more vibrant,” Babineau says. “We believed WiFi could be a catalyst. It could show we’re on the leading edge of technology.”

Unfortunately, enthusiasm alone isn’t enough, and the city’s WiFi vision came with a caveat: Babineau’s funds for installing the network were limited. Furthermore, the city didn’t want its municipal wireless to incur significant ongoing costs down the road. “We couldn’t endorse WiFi if it was going to be too expensive,” Babineau says. “It’s counterproductive to add additional cost burdens to taxpayers in the name of economic development.”

So Babineau set out to see what his options were.

His first step was to choose vendors. The city’s existing wireless was a Cisco network, supplied by HP. After considering his options, Babineau decided to rely on the proven success of this powerful duo, choosing Cisco equipment for the new wireless network and selecting HP to act as systems integrator for the installation.

The answer: a mesh design

HP figured out how to make the installation cost-effective. “HP explained that there were two ways to set up the network,” Babineau says. One choice was to wire each access point to the Internet. That would have been relatively expensive because it would have required quite a bit of new cabling and Internet gateways.

The other option was a “mesh” deployment. With this design, individual access points aren’t hardwired to the Internet. Instead, data is sent to a central Internet hub via wireless transmission. Each access point becomes part of the network’s data transmission infrastructure, passing data from other access points across the network to the hub and back.

Because the mesh deployment didn’t require new cable to be laid, it was significantly more cost effective. “The reduced cost made it very compelling,” says Babineau. It was also inherently scalable. If the city wanted to expand coverage, it could just add new access points.

Still, Babineau had some reservations. For one thing, an outdoor wireless mesh network had never been installed in Canada. HP addressed that concern by presenting case studies of other mesh network implementations it had successfully implemented. “We ended up confident that HP had done this before and could steer us through it,” Babineau says. HP’s strong relationship with Cisco—HP Canada was named Top Wireless Partner by Cisco Canada at Cisco’s Partner Summit Award Ceremony earlier that year—was also reassuring. “We knew HP is an expert at installing Cisco equipment.”

That left only one other issue: Babineau was skeptical that the system could be deployed as quickly as HP promised.

HP took only three days to install the network and Babineau is a believer now. “I couldn’t fathom that happening,” Babineau says. “But it did.”

Live in three days

Of course, the city deserves some of the credit for the speed of the implementation: it performed the installation itself. This, Babineau says, enabled the city to fund the installation internally instead of relying on a contractor for the work.

Planning preceded the installation. Once Moncton agreed on the mesh design, HP determined how many access points were needed and where they should be installed to provide the most coverage.

HP worked with Cisco to provide the necessary equipment: Cisco 4400 Series Wireless LAN Controllers, Cisco 1130AG Series Access Points, a Cisco Wireless Control System, Cisco ASA 5500 Series Adaptive Security Appliances, and Cisco 1500 Series Outdoor Mesh Access Points.

HP also helped Babineau's team configure a captain page—the web page that greets people who sign onto the network.

Meanwhile the city's public works' department identified light poles to power the access points. It also built mounting boxes to house the access points themselves, allowing maintenance workers to service the lights without touching the wireless system and vice versa.

Once these decisions were made and the housing units were built, the city installed the access points—and the system was live.

Happiness is . . . free downtown WiFi

People started using the network immediately, Babineau says, thanks to press coverage and the support of local businesses. "We started seeing 50 users logging on per week right away." The city also helped build awareness by placing Moncton WiFi-branded signs in specific areas to let the public know where the network is available.

Since then the network has become increasingly popular. The number of registered users quadrupled within three months and continues to rise. When Babineau passes through the heart of the city, it's common to see restaurant and café patrons working wirelessly on their laptops.

Users also offer feedback. This comes to Babineau in two ways. The network's captain page asks people to answer a few questions to help the city understand who is using the network and why. The biggest surprise to come from this data is how many non-residents use the network—about a third of the total user base. Some of these users are tourists, but the network also became an important tool for visiting business travelers.



Customer solution at a glance

Primary application

Municipal wireless network

Primary hardware

- Cisco 4400 Series Wireless LAN Controllers
- Cisco 1130AG Series Access Points
- Cisco Wireless Control System
- Cisco ASA 5500 Series Adaptive Security Appliances
- Cisco 1500 Series Outdoor Mesh Access Points

HP Services

- Network and systems integration consulting

Users are also invited to send comments via email. The city receives quite a few thank you notes, Babineau says. It also receives questions, which usually ask one of two things: will the network be expanded and will it continue to be offered for free.

The answer to both of those questions is “yes,” thanks to the network’s cost-saving design. “We came in under budget by about \$10,000 Canadian,” Babineau says. That extra money will be allocated to add additional access points.

Ongoing maintenance costs will be minimal as well, which means the city won’t have to charge users to access the network. “If we’d used a traditional WiFi design, it would have added \$40-\$50 a month, per access point, to our connectivity costs,” Babineau says. “By integrating the new system into our existing network topology, we avoided that expense.” He adds that since implementation, the network has performed flawlessly.

A worthwhile investment in infrastructure

It was a small investment—and has only begun to pay off for the City of Moncton. Moncton is now considering how to leverage the network further. One example: the parks department could enable its staff to submit reports from the field. Babineau would also like to see the city’s public transit systems WiFi-enabled to make them more commuter-friendly.

But the most important payoff is the immediate one: the Moncton WiFi contributes positively to the city’s image. “Moncton had reached a point where, demographically, we were becoming an aging community. Offering free WiFi was a way to invest in our infrastructure and show we’re a young, hip, vibrant city. Now it’s common to see people with their laptops sitting in our cafés, using our service. It’s heartening to see, and it sends a great message to our community.”

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