

# McGill deploys Canada's largest wireless corporate network with Bell.



## The customer

- McGill University, a Montréal-based university serving over 35,000 students over two main campuses

## The need

- Accessible wireless communication for McGill's university community

## The solution

- Wireless Professional Services from Bell

## The results

- Ability to support large volume of simultaneous logins (3,000+)
- Network eliminated approximately 600 wired jacks
- Favourable reviews from wireless users

## Making the grade with students

Since the year 2000, McGill University has established a reputation as a technology leader in wireless deployments. The Montréal-based university's current network serves a population of 35,000 students over two main campuses that include a total of 200 buildings.

For McGill, having campus and community-wide wireless capabilities is more than just making communications convenient for students and faculty. It's also good business. As Michel Poisson, Account Consultant for Bell points out, "Having the technology capability attracts students and creates a competitive advantage. Students want to stay connected, and the more capabilities a university can offer, the more students want to be there."

According to Fran Sanda, of Aruba Canada, who partnered with Bell on the project to provide secure access services, universities are well ahead of the corporate world in their wireless capabilities. "Academia is a front runner [in wireless] because students demand it. It supports the movement of talent around the campus and beyond. Professors can also be more creative about how and where they teach. Students can take notes and search related material during class."

He adds that universities like McGill are looking beyond tactical implementation of providing access points in public areas to making ubiquitous wireless a part of the strategic focus of their infrastructure. "In the university world, the desktop turns into a laptop, so the infrastructure needs to change. Every port needs to deliver every type of application securely.

To date, McGill has deployed 2,400 access points making it the largest wireless deployment in Canada. Plans are to grow to 3,700 in the months to come.



"Our vision has always been to make McGill a wireless organization," says Gary Bernstein, Director, Network and Communications Services at McGill.

Other deployments have simply installed a Layer 2 box to manage access points. McGill's deployment is a new architecture for mobility resulting in the network following users and providing access to applications without compromising either the experience or security."

## Tackling the challenges of academia

Building a wireless infrastructure for a university campus brings some unique challenges that are not necessarily present in a corporate environment. For example, the network experiences a number of peak usage times as large numbers of students log on between class times. In addition, each student is using his or her own computer, so there is no one common application or operating system. This puts increased pressure on issues relating to performance and security.

Then there is the physical environment with which to contend. The century old stone buildings at McGill often obstruct signals and make wiring difficult. Those located in the downtown core particularly can encounter a lot of signal interference. Ubiquity and coverage were therefore key factors.

The Bell logo, consisting of the word "Bell" in a bold, blue, sans-serif font.

The continued expansion of its wireless reach has also led to a few maintenance challenges for the IT group says Gary Bernstein, Director, Network and Communications Services at McGill. "As we grew the network, we found we had to use a lot of 'sneaker power' for maintenance. We knew in our next stage of development that we needed to find a way to centralize management of the wireless infrastructure."

Following an early deployment back in 2001 in which the university set up hotspots in various locations on campus, McGill partnered with Bell and Aruba on a pilot project to provide ubiquitous wireless access within both campus and student residence buildings with identity-based authentication provided through a VPN (virtual private network).

McGill has been partnering with Bell since the summer of 2006 to create its 'mobile campus'. According to Poisson, the deployment has required extensive strategic planning in order to ensure that the network delivers the performance, the reliability and the security needed for a campus-wide initiative.

Upgrades to the IOS (internetwork operating system) of the Aruba software over the summer 2007, enabled features that provided identity-based authentication through WPA (Wi-Fi Protected Access).



McGill's student lounges offer a convenient place for wireless access between classes.

This latest enhancement provides added "intelligence" to security functions by managing all the different releases of applications for all devices. The system does this by automatically inspecting devices for authentication, comparing them against maintenance activities, patch status and more.

According to Bernstein, the next stage is to expand coverage outside the buildings and into the university campus. By providing protected wireless access for students roaming anywhere on the campus property, McGill would continue to satisfy the needs of the university community.

Once this is completed, plans are to layer on additional applications to leverage the existing infrastructure. He estimates that the project will be finished by 2009.

"McGill was an innovator with our first wireless implementation and we've carried on that role ever since," says Bernstein.

In addition to keeping students connected, the IT team is much more efficient. "Through our latest efforts, our team is now able to manage the network from a central point whether they are on campus or off-site," says Bernstein. "This frees up our IT resources to do other strategic projects."

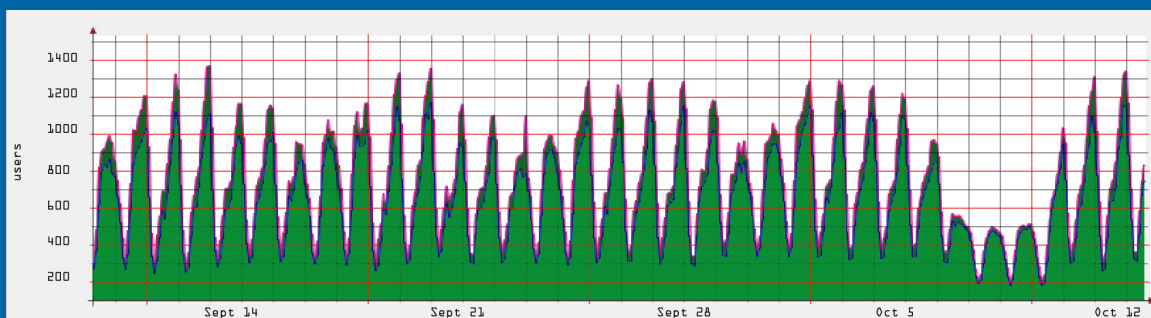
"We worked very closely with McGill and Aruba to deliver ubiquitous coverage across the campus in a very challenging environment," says Poisson. "By bringing together the right people with the right systems integration expertise, we were able to meet the customer's timelines."



To date, Bernstein says the network has shown a remarkable ability to support simultaneous logins (see the graph below for wireless usage variability). It has also eliminated approximately 600 wired network jacks, which is a testament to the community's increasing acceptance of the wireless network as a reliable, robust and functional replacement for the wired technology. "This allows me to more easily plan our network expansion budgets and footprint. Perhaps one of the most satisfying results has been the favourable reviews that have run in student-issued publications."

"We've had a great rapport with Bell and Aruba. Aruba really stepped up to the security requirement compared with the competitors, and Bell has been creative and reliable throughout the entire project," he adds. "We're especially proud of the benefits we've been able to bring to our students. I have to say this has been one of the most satisfying projects of my career."

### McGill wireless network always provides reliable access



This graph represents the fluctuating number of wireless users in McGill residences in the fall of 2007 (including a dip from October 5-12 for Thanksgiving). The network provides consistent access for students whenever they need it despite usage variance.

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