Customer Case Study

University Innovates with New Wireless Network

Cisco wireless network helps St John's University meet demand for BYOD access and provide new classroom capabilities.

EXECUTIVE SUMMARY

Customer Name: St. John's University

Industry: Higher Education

Location: Queens, NY

Number of Students: 21,000

BUSINESS CHALLENGE

- Offer reliable, high-performance wired and wireless access from everywhere on campus
- Support simultaneous use of multiple devices
- Help enable innovation through videoconferencing and multimedia

NETWORK SOLUTION

- Cisco Unified Access solution, with integrated management for wired and wireless networks

BUSINESS RESULTS

- Delivered reliable, high-performance coverage everywhere on campus
- Supported ongoing bring-your-own-device trend
- Allowed classes to be taught through videoconferencing

Business Challenge

St. John's University is a private Vincentian Catholic university with more than 21,000 full- and part-time students at six locations: Rome, Paris, and four campuses in New York. The University offers an education that is both rooted in tradition and focused on progress: in 2003, it began giving a laptop computer to every incoming student and each faculty member. This bold move underscored the institution's commitment to providing its students full access to state-of-the-art educational tools, to optimize their learning experience and prepare them to succeed in the outside world. St. John's also wired the entire campus, with one wired connection per student in each of the dorm rooms, and implemented a wireless network with autonomous access points (APs).

"We were ahead of the times," says Joseph Tufano, VP and CIO of St. John's University. "But times have changed. You see it everywhere: for example, if you go to a basketball game on campus, and there's a timeout, everybody is using their mobile devices." With the advent of smartphones and tablets, students and faculty are bringing in their own devices, on average two or three each, and often using more than one of them at once. The University needs to meet rising expectations of high-speed wireless access to support this bring-your-own-device (BYOD) trend, from everywhere on the St. John's four New York locations: Queens, Staten Island, Manhattan, and Oakdale.

With an ethnically diverse student population of over 21,000, and more than 3100 faculty, administrators, and staff, the University needed to build a more powerful network to deliver both more wired connectivity bandwidth and extremely dense and highly reliable wireless coverage. St. John's also wanted to support the growing demand for videoconferencing and multimedia capabilities.

After considering its options, the University chose to work with Cisco to plan and implement a network that could meet its new requirements. "Ten years ago, when we planned what was a cutting-edge network, we built it with Cisco, and have had a great experience with the technology and the company ever since," says Tufano. "Now that we wanted to do a major refresh to create a state-of-the art wired and wireless network, we turned to Cisco again."

Network Solution

St. John's upgraded its network core and data center and implemented dense wireless coverage with a new Cisco® infrastructure. At its core is a pair of Cisco Nexus® 7010 switches, with Nexus 5000 Series switches and Nexus 2248 fabric extenders connecting to its server farm. At the next layer it uses Cisco Catalyst® 4500 Series switches in its distribution closets, along with Cisco Catalyst 3750X Series Switches for the access layer, while at the edge it uses Cisco ASR 1001 Routers.

To provide 802.11n wireless service throughout the campus, St. John's uses two Cisco 8510 Wireless Controllers and one Cisco 5508 Wireless Controller for guest access. Cisco Aironet® 2600 Series Access Points provide an interference-free, high-speed wireless experience, along with Cisco Aironet 1552E Outdoor Mesh Access Points for coverage in its courtyards. The University leverages Cisco EnergyWise™ technology to power up its access points with Power over Ethernet (PoE).

> "Cisco has been a valued partner for St. John's and continues to ensure that critical IT foundations to our infrastructure, including our networks, are benefitting from the latest innovations in the technology sector."
> **— Martha Hirst, Executive VP, Chief Operating Officer and Treasurer, St. John's University**

Cisco Prime™ Infrastructure provides the University a single integrated solution for managing wired and wireless access throughout the campus. With visibility into end-user connectivity and application performance, it helps enable St. John's to speed troubleshooting related to multiple client devices for consistent and reliable service.

The University deployed a videoconferencing gateway and Cisco TelePresence® System Codec C40 and C60 units at its main Queens campus. TelePresence System SX20 Quick Set endpoints were implemented at its other remote campuses, including Rome and Paris.

Business Results

Building Better Network to Serve Faculty and Students

The upgraded core network and extended wireless capabilities deliver more bandwidth and reliable support for a wide variety of activities in the dorms and anywhere on campus. For example, lecturers leverage wireless access in classrooms to pull up material from their own laptops or tablets or to access material from the Internet. They also increasingly administer tests online, which requires the network to support some 70 students taking an interactive test in a lecture hall at the same time. Students and faculty use the network 24 hours a day to access materials, and to manage all their work and social activities from all points around campus.

The University is evaluating Cisco products that will extend what it did in the Queens Campus Residence Village to Carnesseca Arena. Supporting the fans alone would be a challenge, but the institution takes its athletics program seriously, and the new wireless infrastructure also supports intensive press activity. For example, the University recently hosted the National Collegiate Athletic Association (NCAA) women's tournament, and frequently works with ESPN to broadcast events.

Automatically Eliminating Interference to Free Up Technician Time

In its dense on-campus deployments, particularly in its dorms, St. John's replaced its autonomous APs and deployed 415 Cisco Aironet 2600 Series Access Points with Cisco CleanAir® technology. As a result, the APs can immediately and remotely identify when there's interference and automatically adjust channels and signal strength accordingly. Previously, with eight to ten students in a suite using all kinds of technology including microwaves, the network staff used to have to patrol areas with a spectrum analyzer looking to pinpoint sources of interference.

"Our technical team can now focus on adding value rather than just solving problems," says Anne Rocco, director of network and communication Services. "For our team, we wanted to deploy newer technology that was low-maintenance, and the Cisco solutions delivered."

Enriching Curriculum with Video Collaboration

By using Cisco WebEx® Meetings and a Cisco wireless video gateway, St. John's has been able to enhance its curriculum across its campuses. It can now offer the same class at all its campuses simultaneously, expanding the range of courses available to its students while making efficient use of faculty time. The University also uses its video collaboration capabilities to conduct training sessions for employees and students.

Video collaboration allows the University to take an innovative approach to expanding its curriculum by partnering with other universities. For example, law school students at St. John's and ten other universities can all take the same specialized class in international bankruptcy. Each university takes a turn hosting the class, with faculty experts from each university contributing as appropriate. None of the universities could have offered this class on its own; enrollment would be too low and costs too high. Videoconferencing, however, brings together a wider pool of students and law experts to transform the cost/benefit ratio and make it feasible, allowing students to benefit from an in-depth course in a specialist topic.

Creating World-Class Learning Environment with Cisco

Going forward, St. John's is planning more widespread use of videoconferencing. It's considering extending TelePresence to more people, on more devices, from more places by using Cisco Jabber™ Video for TelePresence for collaboration and as part of its videoconferencing gateway project.

In addition, as devices continue to proliferate, the University's security policies will continue to evolve and increase in sophistication. For example, the University is evaluating products to provide special policy management for guest access through Cisco Identity Services Engine (ISE) and other technologies.

"Cisco has been a valued partner for St. John's and continues to ensure that critical IT foundations to our infrastructure, including our networks, are benefitting from the latest innovations in the technology sector," says Martha Hirst, Executive VP, Chief Operating Officer and Treasurer, St. John's University.

PRODUCT LIST

Routing and Switching

- Cisco Nexus 7010 Switches
- Cisco Nexus 5000 Series Switches
- Cisco Catalyst 4500 Series Switches
- Cisco Nexus 2248 Fabric Extenders
- Cisco Catalyst 3750 Series Switches
- Cisco ASR 1001 Routers

Wireless

- Cisco Aironet 2600 Series Access Points
- Cisco Aironet 1552E Outdoor Mesh Access Points
- Cisco 8510 Wireless Controllers
- Cisco 5508 Wireless Controllers

Network Management

- Cisco Prime Infrastructure 1.2

Collaboration

- Cisco TelePresence System Codec C40
- Cisco TelePresence System Codec C60
- Cisco TelePresence System SX20 Quick Set
- Cisco WebEx Meetings
- Cisco TelePresence Video Communication Server (VCS) control
- Cisco Jabber Video for TelePresence

For More Information

For more information about Cisco switching products, go to: http://www.cisco.com/go/switching.

For more information about Cisco Wireless products, go to: http://www.cisco.com/go/wireless.

For more information about Cisco Prime, go to: http://www.cisco.com/go/prime.

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