Texas A&M University–Commerce

University covers an entire campus with Wi-Fi in just six months

Business Profile

A member of the Texas A&M University system, located in Commerce on an 1,834-acre campus, serving 11,500 students in 100 major areas of study at the undergraduate, master's, and doctorate level.

Challenges

- Improving the reliability of wireless access
- Expanding wireless coverage to all buildings
- Managing a wireless network with a small staff

Deployment Summary

- Wireless coverage in 20 buildings and three dorms, deployed in six months
- Two MC4200 controllers in n+1 configuration for redundancy, managing 342 AP320 access points
- Two MC4100 controllers in n+1 configuration for redundancy
- Wi-Fi for remote branches in three cities, managed centrally over WAN

Benefits

- Tedious, costly channel planning eliminated
- Separate, secure channel layers provided for special research projects
- Rapid expansion of coverage to new spaces
- Reallocation of IT resources to high-value projects
- Reliable access in high-density areas and event centers

Pervasive campus Wi-Fi can be simple

Walk around Texas A&M University in Commerce, Texas, and everywhere you'll see what warms the heart of the director of infrastructure services, Jeff Faunce. In every building, people are busy using their smartphones, tablets, and laptops because

"The Meru solution makes it possible for universities like ours, with a small to medium IT staff, to roll out a wireless network quickly, manage it efficiently, and modify it easily as time marches on."

– Jeff Faunce, Director, Infrastructure Services

Wi-Fi service is fast and always available throughout the campus. The experience is the same for the student in his dorm room, the professor in her office, the study group in the library, the hundreds of conference-goers in the student center, and the wireless robots roaming the halls of the science building.

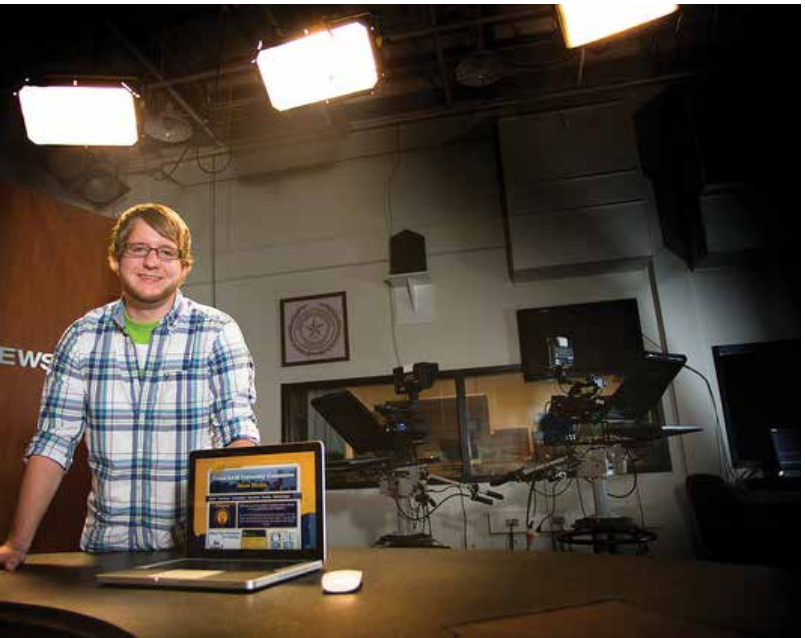
That wasn't always the case.

"Channel planning was killing us"

Texas A&M University–Commerce has 20 buildings and three dorms on 1,834 acres. And it's growing steadily, even in a time of severe budget cuts to higher education. Enrollment is expected to grow about 10 percent a year, and a new library, classroom building, and dormitories are in the planning stages. Faunce and his network staff of two are committed to providing Wi-Fi coverage in every building, everywhere except in the stairwells. But their old network was holding them back.

"We had what I call generation-one Wi-Fi gear. Just access points without any way to manage them," says Faunce. Without central management, the old network, in effect, wasn't truly a network at all. Worst of all was the unsustainable amount of time required to change coverage or extend it to new areas.

The network team faced the prospect of endless cycles of time-consuming site-planning exercises. "With our old Cisco gear, even adding one new access point in a building consumed several days of planning and installation time, because you're changing the balance of everything. The channel planning was killing us." What hope did they have to keep up with a growing campus and the rising expectations of students who typically bring three or more wireless devices with them to school?



A single-channel solution makes sense

About the time the new student center was built, Faunce learned of Meru Networks at ACUTA, a higher-education conference. "The single-channel Meru technology made sense to us. It removes the most difficult part of rolling out Wi-Fi, which is sitting in an office with sophisticated software or even grid paper and mapping where the channels should be. And you'd still be guessing. Instead, you can just get on with it," says Faunce.

The Meru solution sounded like the answer to the university's search for homogeneous campus-wide Wi-Fi, and the new Rayburn Student Center presented a timely opportunity to try it out. "With the student center deployment, we proved that we could provide reliable service in a dense user environment in a more timely manner with less cost, because we weren't spending the amount of time planning that other types of systems require," says Faunce.

A three-year deployment accomplished in a few months

The university approved a three-year plan to cover the campus with Wi-Fi access. "We received the full funding up front because we believed we could accomplish the job in much less time with the Meru solution," says Faunce. In fact, the three-year project to extend a wireless network to 20 buildings and three dorms was completed in just six months.

Easy expansion for dorm coverage

The university took a practical approach to providing Wi-Fi across the campus. The team didn't try to cover every public area. "We started with the spaces where we saw people congregate or where people told us they congregate," explains Faunce. "We concentrated first on making sure that the coverage is present where users think it should be." The Meru solution gave them this flexibility to expand and change the coverage, quickly and easily, as needs were identified.

For example, a brick apartment building that the university acquired and converted to a dorm got a quick Wi-Fi upgrade. The network team beefed up the number of APs for 300 residents from eight to 40, and plan to extend coverage further to additional areas of the building with eight more APs. “Because the whole dorm can be on one channel, we didn’t have to do any elaborate planning,” explains Faunce. In addition, channel layering separated slower 802.11b/g traffic from faster 802.11n traffic, so they don’t compete for bandwidth and slow performance for everyone.

The flexibility of the Meru solution also helped the university extend wireless service to branch locations in three other cities. “We discovered how simple it is. Wireless APs can be anywhere on your wide-area network and managed securely from the central Meru controller and portal,” says Faunce.

Robots get their own channel

“To provide reliable and predictable wireless service to a large university, you have to be able to keep rogue access points off the grid,” says Faunce. The university’s old network provided no insight, but the Meru network does.

Sometimes, however, a university has to be more accommodating to the needs of its community. The single-channel Meru solution allows channels to be layered to create special, localized networks and add capacity within the university network, all under the watchful eye of the Meru management portal.

Professor Charles Rogers’s robotics project is a prime example. Researchers are building microcontroller robots that are operated wirelessly. By giving the project its own channel on the network, the robots don’t interfere with traffic on the main channel. “If our wireless network required the use of conventional channels, we would have to tell them, ‘No, you can’t have that here because you’re going to interfere with our service.’ Instead, we can be helpful and give them their own channel that plays by the same security rules as the rest of the network,” explains Faunce.

“With the old Cisco gear, the university approved a three-year plan to cover the campus with Wi-Fi access. But once we deployed the student center quickly and smoothly with Meru WLAN, we received the full funding up front…”

The university is able to keep rogue do-it-yourself networks off the grid, maintain control, and provide a simple solution for special circumstances.

A smarter use of IT time and talent

When Texas A&M University–Commerce embarked on upgrading and expanding wireless service campus-wide, channel planning seemed an insurmountable obstacle. The university has a small, very qualified network staff with years of experience, and, as director of infrastructure services, Jeff Faunce had a dilemma. The talented experts could spin their wheels doing tedious channel planning, or budget could be spent contracting it out.

“I would much rather that we spend our time and resources on new projects bringing more efficiencies or new capabilities to the university, instead of solving the same problem over and over again,” says Faunce. “As it turned out, the problem had already been solved by Meru Networks.”

Now the university is turning its attention to new projects, such as bringing Wi-Fi to outdoor spaces and providing staff with mobile Voice-over-IP (VoIP) phones with seamless roaming anywhere on campus.

“The Meru network has simplicity of management with all the bells and whistles of usability. It’s very straightforward.”

About Meru Networks.

Meru Networks (NASDAQ: MERU) supplies virtualized wireless LAN solutions that provide enterprises with the performance, reliability, predictability and operational simplicity of a wired network with the advantages of mobility. Meru Networks eliminates the deficiencies of multichannel, client-controlled architectures with its innovative, single-channel, virtualized network architecture that easily handles device density and diversity. Meru wireless LAN solutions are deployed in Fortune 500 businesses, education, hospitality, healthcare, and retail supply chains. Meru is headquartered in Sunnyvale, Calif., with operations in North America, Europe, the Middle East, and Asia Pacific.

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