EVANGEL UNIVERSITY

802.11AC Wave 2 Hits Higher Education

CASE STUDY

OVERVIEW

Evangel University is located in Springfield, Missouri. The university serves over 2200 students and 400 in faculty and staff spread over 100 acres.

REQUIREMENTS

- WLAN infrastructure that is scalable and innovative
- Reliable network that meets the high density needs of students and faculty
- Campus-wide mobility
- Secure and simple onboarding
- Easy deployment and network maintenance

SOLUTION

- High performance network solution that meets current and future Wi-Fi needs with superior connectivity and coverage
- Deployed 335 access points to provide campus wide coverage
- Ease of management of ZoneDirector 3000
- Improved density capabilities and overall throughput

RUCKUS SMART WI-FI CHANGING THE WAY STUDENTS LEARN

Technology plays a large role in many aspects of day-to-day life, and education is no exception. Higher education is breaking new ground in early technology adoption inspiring a new generation of learners. Evangel University has been able to transform students' education both inside and outside the classroom through the implementation of a smart Wi-Fi network. Students can easily and confidently connect and participate in online learning and even utilize smart devices in the classroom. And it is not just Evangel University that is making a change. The need for wireless bandwidth in the classroom is growing among all colleges and universities. As the student experience in the classroom is changing and faculty and staff are more reliant on online learning, a reliable and robust Wi-Fi network is at the top of the priority list. Yet, connectivity is not just restricted to the classroom. Reliable network connectivity is necessary in dorm rooms, sports facilities, and even outside common areas. Wi-Fi is no longer a "nice-to-have," but a strategic component of any school. According to the Educause study, over 60 percent of college students said they wouldn't attend a university without extensive Wi-Fi.

CHALLENGE

Founded in 1955, Evangel University is a comprehensive Christian university located in Springfield, Missouri. Situated on over 100 acres with seven resident halls, five academic buildings, a large chapel and an athletic center, the school serves over 2200 students and 400 faculty and staff. Through the years, it had become evident that the old Wi-Fi infrastructure Evangel had in place was becoming increasingly problematic to students and faculty. With over 1,100 students living on campus, students were becoming frustrated with the performance of the legacy Wi-Fi.

"We were getting dozens of tweets a week on how bad the Wi-Fi network was and how the students were getting disconnected and were dissatisfied," states Gary Blackard, Chief Information Officer at Evangel University.

Evangel had been running a Wi-Fi infrastructure that was over seven years old. A mixed network of 3-COM and Ubiquiti provided insufficient coverage campus-wide. Equipped with only 2.4 GHz radios, the network was unable to meet the high-density needs of students, faculty and even IT staff. In 2014, Gary Blackard joined Evangel University as Chief Information Officer (CIO) and decided it was time to make a change. Evangel needed a system that was scalable, innovative, and easy for IT and end users to manage and use.

SOLUTION

Evangel searched for a vendor whose core business was Wi-Fi who could meet their standards on the desired solution. After an extensive evaluation with suppliers Aerohive, Aruba, Extreme, Xirrus, and Ruckus, it was time to place the

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two finalists to the test. Due to the large amount of complaints Evangel was receiving from students regarding the Wi-Fi coverage, the final decision was left to an on-campus competition between the two final suppliers. They decided to have an on-site demo that would be reflective of a real world experience. Evangel had two identical dorms in terms of construction and capacity and invited Aerohive and Ruckus Wireless to deploy their Wi-Fi in one of the dorms each. The test lasted for 6-8 weeks. Student feedback and network performance data was collected and analyzed.

"At the end of the day Ruckus was the clear winner," states Blackard.

Evangel was drawn to the Ruckus portfolio because of the high RF performance and the superior products including our built-in BeamFlex+ Adaptive Antenna Technology that focuses RF signals towards each associated client, ideal for high-density environments.

"Being able to cut down in co-channel interference, taking advantage of polarized antennas so orientation of the device doesn't have an impact was huge since it plays a big role in the real world and makes an actual difference," states Blackard.

The Mirazon Group was the partner who helped Evangel University with the solution process. To ensure consistent coverage, Evangel installed 335 of Ruckus' ZoneFlex R710 access points campus wide. They experienced a huge increase in the Wi-Fi performance and range. The R710 delivers up to 5dB of signal gain and is backwards compatible with existing Wi-Fi clients. It maintains a 4x4:4 802.11ac functionality and MU-MIMO to address the need of high density. This Wave 2 deployment made a big difference on this campus.

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GARY BLACKARD
Chief Information Officer, Evangel University

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For network management, Evangel selected the ZoneDirector 3000. With an IT staff of 15, the goal was to take advantage of a system that was easy to deploy and manage. "At the CIO level, this was one of the smoothest implementations I have seen in a long time," comments Blackard.

Providing reliable classroom connectivity has led to many changes in the way students are learning. Many faculty members have stated that the new Wi-Fi solution has allowed them to change the way they teach in the classroom. Not only are teachers able to get their students to connect to the network, which was a challenge in the past, but they are able to do a lot more online learning and utilize smart devices in the classroom day after day.

For user authentication, Evangel uses 802.1x as the standard for students. They do provide a secondary SSID for faculty and staff. Ruckus-patented Dynamic Pre-Shared Key (DPSK) technology was key in enabling Evangel to build out a seamless onboarding solution. With DPSK, smart devices can securely connect with a unique pre-shared key generated by the Ruckus WLAN controller, downloaded to the devices and bound to the unique MAC address of each client.

For Big Data Analytics, Evangel takes advantage of Ruckus SmartCell Insight (SCI). With this software, Evangel can see real-time network statistics by different buildings and compare the traffic patterns. Also, SCI provides historical data at the AP level, which is key for understanding the usage and capacity of the network.

Ruckus Wireless was able to change the way Wi-Fi is viewed on Evangel's campus. Teachers and students are no longer complaining about poor connectivity, but rather taking advantage of the rewards and changing the way students are learning.

Blackard concludes, "We wanted to make sure that everywhere on campus you could get excellent Wi-Fi. With Ruckus, we were able to get the performance and coverage that we needed. Now students can easily connect with multiple devices at the same time."

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