

University Expands Campuswide Network Infrastructure

Bentley University becomes one of the first New England schools to provide 100 percent wireless coverage

EXECUTIVE SUMMARY
<p>BENTLEY UNIVERSITY</p> <ul style="list-style-type: none"> • Higher Education • Waltham, Massachusetts USA • 5451 undergraduate, graduate, and Ph.D. students; 484 full and part-time faculty and staff
<p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> • Deploy robust wireless infrastructure • Continue to set standard for secure, robust, and reliable network infrastructure
<p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> • Conduct pre-site wireless survey to determine location of access points • Install over 900 wireless access points, creating 100 percent wireless coverage • Protect wireless network with sign-in authentication and encryption devices
<p>BUSINESS RESULTS</p> <ul style="list-style-type: none"> • One of first New England higher education campuses to deploy 100 percent wireless coverage • Extended infrastructure that offers a robust wireless anytime, anywhere • Enhancement of administrative efficiency, and improved access to learning opportunities

Business Challenge

Bentley University is a private, co-educational university located in Waltham, Massachusetts, approximately ten miles west of Boston. Bentley was founded as an accounting and finance school, and has grown into a comprehensive university with a highly integrated business and arts & science curriculum; industry leading technology facilities and expertise; and innovative teaching and research agendas at the undergraduate and graduate levels.

The relationship between business, technology, and society frame the way that Bentley delivers its academic programs. As such, one of Bentley’s primary goals is to teach students how technology affects the global business market. Today, Bentley is ranked #33 on *Business Week’s* top 100 undergraduate business schools and has been ranked in the *U.S. News and World Report* information systems top 20 for both undergraduate and graduate programs.

The year 2010 marks the 25th anniversary of Bentley University’s laptop distribution initiative, a program that gives every freshman student a laptop when they arrive on campus. Students then receive a new laptop at the beginning of their junior year that they are able to keep upon graduation. “We understand the growing role of technology in information management and business practices,” says Alan Cekanavich, director of enterprise, infrastructure, and client computing services for Bentley University. “This program recognizes that students need to be comfortable with personal productivity tools. As technology continues to advance, we need to carefully advance our network infrastructure to allow students, faculty, and staff to experience mobile computing as an integral part of their academic and business pursuits, as well as the way in which they communicate and collaborate.”

With the growth of the digital age, Bentley officials recognized that technology was having a profound influence on the way students think and learn, how information is captured and communicated, and how students express themselves via social networking sites. In 2002, Bentley began issuing laptops pre-installed with wireless adapters as part of a wireless network pilot with Cisco. University officials established this pilot to see how well students would utilize a wireless network.

Cisco installed approximately forty 802.11n wireless access ports as a test bed in a few campus buildings. It became apparent very quickly that students were using the mobile wireless points at an increasing rate, favoring them over an already installed and faster physical network located throughout the campus. Bentley officials decided to create a wireless infrastructure with high proof points to not only support growing student needs, but also to provide students with the tools needed to succeed in this connected, globalized world.

Network Solution

Bentley conducted a “vendor wireless run-off” in different residence halls to test which wireless network would be the best fit. Bentley selected Cisco based on the company’s industry leadership and ability to provide a solution that would change the way its students and faculty worked, played, and learned. Cisco brought in Atrion Corporation as a partner to guarantee the implementation of the equipment, and conduct a pre-site wireless survey. Conducting this survey saved Bentley a significant amount of time as administrators were able to determine where the wireless access points should be placed for the most efficient and wide-range of coverage.

“Bentley University grew from approximately 410 wireless access points to over 955 installed,” says Traci A. Logan, chief operating officer and vice president of information technology for Bentley University. “We currently have an average of 2,800 active, validated, and secured wireless accounts that are able to receive reliable wireless coverage anytime, anywhere. A high-speed network with significant bandwidth offers our students a technological campus ideally positioned to foster and accommodate new modes of learning and collaborating, while enabling students to experience, both in the classroom and on their own time, the profound impact of information and communication technologies on business practice, government, and society.”

The Cisco® Wireless Services Module security platform can validate all guests on the Bentley wireless network during sign-in with authentication and encryption devices. These devices safeguard critical information, assets, and systems. Unauthorized devices and wireless threats are automatically detected and mitigated with the built-in adaptive wireless intrusion prevention systems. Malicious intruders and students can be prevented from hacking into restricted sites or issuing attacks. Additionally, students and faculty can log in smoothly through the active directory with an end-to-end high-speed link.

Business Results

Today, the University has 100 percent wireless coverage in the 50 buildings located on campus, including the football field, and is in the process of covering all the other outside sports fields. Since

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implementation, University officials have received comments and positive feedback from students and faculty, indicating how pleased they are with the new wireless network.

“Students come to campus, obtain a laptop that is already configured for them, and receive automatic updates and constant IT support,” Cekanavich says. “With our updated, robust wireless network, there is literally no downtime when it comes to being online. In September 2009, we had our first ‘stress test’ with the new infrastructure when the entire freshman class logged onto their Bentley-issued laptops at the exact same time during orientation. There were absolutely no issues at all.”

With the standardization of the wireless environment, Bentley has experienced cost containment, as well as mitigated excess time and energy, because there are no longer multiple products and networks to maintain. Additionally, the University does not need to invest capital into the campus wired network, cabling, and relabeling hardware. In terms of maintenance, staff is able to locate network issues instantly, and work orders and student billing are now automatically generated, creating a more efficient school system.

Bentley University has enhanced administrative efficiency, and improved students’ access to engaging, lifelong learning opportunities. “Bentley University is one of the nation’s leading business schools, dedicated to preparing a new kind of business leader,” Logan says. “One with the deep technical skills, broad global perspective and high ethical standards that are required to make a difference in our ever-changing world. With our unique blend of business, technology and the liberal arts, Bentley is able to provide students with relevant, practical, and transferable skills. Lesson plans are built around the use of technology and the amount of collaboration, participation, and engagement has increased.”

The Bentley Library is another facility on campus to benefit from the upgraded wireless network; greatly expanding access to its many online resources. The state-of-the-art facility underwent a \$17 million renovation to reveal a world-class business library that is now the hub of academic life at Bentley. Among its many leading-edge technology advantages, the library is outfitted with 120 computer workstations and 24 high-tech collaboration rooms. The expansive wireless implementation now allows easy access to the many resources necessary for advanced research, study, and group collaboration.

PRODUCT LIST

Routing and Switching

- Cisco Catalyst® 6509-V-E Switch
- Cisco product name

Wireless

- Cisco Wireless Services Module (WiSM)
- Cisco Aironet® Access Points
- Cisco Aironet 1142 Series
- Cisco Wireless Control System (WCS)

To learn more about Cisco’s higher education solutions, go to http://www.cisco.com/web/strategy/education/higher_education.html

Next Steps

Bentley officials continue to expand the distance-learning capabilities offered throughout the campus, enabling graduate students to pursue online degrees via synchronous virtual study. Graduate students are able to join a “live” class from any location at a specific time. There is also a desire to expand the campus public safety and emergency response divisions to enhance communication capabilities across large distances.

“Bentley has a strong tradition of achievement that is anchored in business and financial management, enhanced through the application of technology, and deepened by the integration of arts and sciences,” Logan says. “Bentley’s core mission is to prepare accountable leaders who can perform and evolve in this age of interdependence and connection.”

Figure 1. Bentley University student working at library work station that now has expanded online resources to education material and supports a collaborative, engaging environment.



For More Information

To find out more about the Cisco's higher education solutions, go to:

http://www.cisco.com/web/strategy/education/higher_education.html

To find out more about Bentley University, go to: <http://www.bentley.edu/>



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