Educating the Next-Generation Workforce

University of Phoenix integrates network certification into curriculum and upgrades its network for student access.

Business Challenge

Founded in 1976, Phoenix, Arizona-based University of Phoenix is the largest private university in North America, with more than 200 locations in 39 states and more than 400,000 students in the United States and abroad. Using a model of online, campus, and corporate onsite learning programs that can adapt to 21st-century working learners’ busy schedules, the University offers students a range of degree programs to enhance their current careers or transition into new fields.

In keeping with the University’s mission to provide access to higher education for working adults, the University’s Academic Affairs team reviewed the current economic climate and job-growth forecasts to determine how best to position learners for emerging jobs and careers in the technology sector. The deans and faculty quickly recognized that technologically rigorous academic training is one of the best ways to meet these goals.

“Looking at the forecast market data, we see an opportunity to offer something new and unique that can enable our students to develop the knowledge and skills needed to meet the growing demand for technology specialists,” says Dr. Blair Smith, dean of information systems and technology for the University of Phoenix.

A study of nearly 1000 employers and employees by the University of Phoenix Research Institute found that problem solving and collaborative skills will be in high demand in the jobs of the next 10 years, and that industry-specific applied skills are needed to complement general academic training.¹

“The 21st-century knowledge economy calls for educated, technologically savvy workers who are both degreed and certified in job-related skills,” says Dr. Tracey Wilen-Daugenti, president of the University of Phoenix Research Institute. “Educational models that integrate industry-endorsed skills training and academic advancement help individuals contribute greater value to their organizations and their fields.”
To support its vision of developing tomorrow’s technology leaders, the University re-evaluated its learning technology platform. The University first reviewed its data center infrastructure. With such a widely dispersed education base, a formidable network architecture would be required, one that had the capacity to meet the needs of administrators, faculty, and students around the world. It also had to be flexible, scalable, easy to manage, and cost-effective. The platform would need to be able to meet the institution’s IT training and certification requirements well into the future. The current network framework was composed of technologies that had been developed and integrated over years of use, and was hard to manage in a consistent or centralized manner.

The University then analyzed the accessibility needs of its students. With an online curriculum, the need for 24-hour access, and the proliferation of mobile devices, it was clear that the student body would require a progressive wireless network to make the most of the University’s advanced course offerings. Students who participated in online courses outside of their jobs or during peak networking hours could not afford network downtime.

After reviewing the technology, educators and administrators determined to offer a degree curriculum that was particularly compatible with the new technology framework. To this end, University of Phoenix collaborated with a trusted vendor, Cisco, to offer something entirely different.

**Network Solution**

The University designed an innovative program with Cisco to offer curriculum that enables students to complete their degree while simultaneously taking qualifying courses to pass the Cisco® Certified Network Associate (CCNA®) certification. “By combining the two, we are helping students rapidly ready themselves to contribute higher value to workforce,” says Smith. “With the robustness of the new network, we will offer a program that can immediately have long-term benefits for those seeking a career in the technology industry.”

“Educating Americans, filling jobs and fostering a competitive workforce is top of mind in the current economy,” says Wilen-Daugenti. “Our research has shown that information technology is practical and relevant for many job sectors and provides learners options and transferrable skills.”
This program integration is promising from the perspective of Cisco as well. “The University of Phoenix has one of the best and largest IT degree programs in the world,” says Andres Sintes, global director of Cisco’s Worldwide Learning Partner Channels. “Coupled for the first time with Cisco’s award-winning certification program, this unique union is truly enabling workforce transformation, which can only help individuals and our economy.”

![U.S. Employees with a Cisco Certified Network Associate (CCNA) Certification](chart)

**Figure 2.** IT professionals earn competitive salaries.

To support this vision of an advanced distributed curriculum, the University significantly upgraded its technology infrastructure. “As a university that offers on-ground and online programs, we used an enterprise way of thinking,” says Ed Escobedo, chief information officer for the University of Phoenix. “This meant a focus on implementing technologies that directly impacted the quality of service that we deliver to our students.”

In line with this tenet, the University consolidated its six data centers into two, while upgrading to the more powerful Cisco Nexus® Series Switches. This meant that the University’s data center capabilities were much easier to manage with centralized locations and standardized platforms. Additionally, the new data center line afforded the University the ability to improve continuity features, including data and power backups. An added plus was the new ability to create secure, segmented virtualized cloud networks. This meant less hardware to purchase and maintain, as well as decreased data center power consumption while still providing additional networking performance.

The next phase was to implement a wireless network across all campuses to enable next-generation learning environments. With increased use of a wide range of mobile devices by students and staff, the University created a network that supports voice, data, and video that can be used to share lesson plans, support interactive classrooms, and exchange multimedia.

The University went a step further to support distributed and collaborative environments with state-of-the-art Cisco TelePresence® video conferencing centers. With several in the United States and presence expanding in London, Chile, and Mexico City, administrators and researchers are able to exchange ideas and information in a face-to-face environment without incurring travel time and costs. Supporting this structure is the Cisco WebEx® application for desktop web conferencing,
which is seeing high demand throughout the University for its ability to facilitate web-based, on-demand collaboration and learning. “These two technologies helped enable our strategic goal of learning and collaboration on a global scale,” says Escobedo.

With this new platform, the University is equipped to help students develop in-demand, marketable skills in the United States.

**Business Results**

The new data center architecture and evolved network have become the platform for the entire learning experience at the University. Students and staff now enjoy ubiquitous access to school resources and each other, creating a dynamic and progressive learning environment that stimulates individuals and prepares them for technologies currently used in the workplace.

By establishing a wireless network at over 276 locations in 39 states and upgrading wireless networks in over 270 locations, the University enables expanded, more reliable connectivity that supports interactive, collaborative learning.

Using Cisco Nexus technology, the University has reduced its total cost of ownership (TCO) of data center devices by 58 percent through the consolidation and streamlining of the data centers. In addition, the University has significantly reduced its carbon footprint and power consumption at key new data centers, further reducing costs.

Deploying Cisco Nexus 5000 Series Switches at the data center edge has enabled the University to reduce the number of devices needing to be managed by 90 percent. This reduction in devices, in turn, has reduced the staff required to manage numerous data centers, resulting in a TCO reduction of 90 percent.

By centralizing the wireless controller network nationally, the University is able to reduce the percentage of controllers to manage by 94 percent. The University currently maintains roughly 350 distributed controller systems, with a planned reduction to 20 controllers using Cisco 5508 wireless controllers. This solution has yielded a 94 percent TCO reduction.

In addition, the quality of wireless connectivity has increased substantially, with smooth mobile device connectivity at the upgraded sites. The increase in availability and quality of wireless access has significantly boosted student and employee satisfaction, as measured by routine satisfaction surveys. The number of IT trouble tickets has dropped proportionately.

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In sum, reconfiguring IT resources into a virtualized network has improved network efficiency and flexibility, reduced power consumption, and yielded significant cost and resource savings while increasing user satisfaction rates. The University continues to benefit from cost savings in the maintenance and scaling of the network. In addition, the University is able to maintain its high standard of global interaction while saving travel costs. Ultimately, these improvements facilitate a more technologically advanced higher educational experience.
For More Information

To find out more go to: Cisco Education Solutions.