

State Consortium Expands Educational Opportunities with Enhanced Video Connectivity



Utah Education Network's multi-option, multi-vendor partnership includes Cisco solutions supporting interactive video conferencing for public and higher education.

Executive Summary

Utah Education Network

- **Industry:** Education
- **Location:** Utah
- **Number of Employees:** 103

CHALLENGE

- Increase efficiency and access to live and recorded classes in K-12 and higher education
- Provide a robust statewide network that meets the bandwidth and performance requirements for public education, higher education, and libraries
- Enhance collaboration in the classrooms statewide, while controlling costs

SOLUTION

- Continue to improve the network to meet demands of one-to-one computing, rich media and real time applications
- Integrate Cisco TelePresence Management Suite (TMS) to help with pre-scheduling classes
- Install more interactive video classrooms to increase classroom accessibility and enhance student learning experience

RESULTS

- Increased student access to higher education classes, resulting in greater opportunities for learning
- Increased high school participation in distance learning, specifically with concurrent enrollment
- Recognized as a national leader in providing capabilities through technology to enhance education

Challenge

The Utah Education Network (UEN) is a consortium of public and higher education partners, including the Utah State Office of Education; 41 local school districts; the Utah Electronic High School; and the Utah System of Higher Education and its eight universities and colleges; the eight campuses of the Utah College of Applied Technology, and public libraries. Created by the Utah State Legislature in 1993, UEN's three core goals are to provide networking services, application hosting, and application support to more than 800,000 students, faculty and staff in Utah.

Since its inception, UEN has sought to provide educational access to technology and collaborative leadership. It has remained a leader by using multiple technologies supported by multiple sources of funding including state appropriations, e-rate discounts, and state and federal grants. For example, UEN's infrastructure includes wide-area broadband and two digital TV channels, as well as applications including interactive video conferencing, learning management systems, a digital library and online tools for teachers.

In 2008, UEN was at a crossroads as it researched the next generation of interactive video classrooms. UEN sought to deliver a cost-effective, functional and interactive classroom while expanding its options with the implementation of emergent technology. With such a large network, it was key to make sure that all technology worked seamlessly. "We are a statewide network in every sense of the term," says Louie Valles, Interactive Video Conferencing (IVC) manager at UEN. "We connect public schools, libraries, charter schools and government buildings, so it is important that our network connectivity is consistent and that we provide a quality experience for all users."

UEN owns less than two percent of its broadband circuits, and more than 98 percent of its traffic is carried over leased circuits from Utah telecommunication providers. Both UEN and its partners have worked with Cisco to support infrastructure that includes over 800 video endpoints, TelePresence content servers, video bridges and mobile video clients. "If deployed without great care and planning, this amount of technology could become unruly," said Jim Stewart, director of UEN technical services. "When Cisco and other vendors work collaboratively with us and our telecom partners, we achieve results that create a smooth and consistent experience for educators and students."

Solution

UEN and many of its telecommunications partners have been working with Cisco for over 20 years, and these long-term relationships have benefitted tens of thousands of Utah students. In supporting UEN's goals of increasing accessibility and efficiency by creating a technology advanced classroom system, Cisco has provided a variety of solutions including core, distribution and edge devices.

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Louie Valles

Interactive Video Conferencing (IVC)
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Jim Stewart

Director of Technical Services, Utah
Education Network

"UEN is now well poised to provide national leadership and bring new innovations and best practices to our universities, schools, and communities."

Steve Corbató

Executive Director of Cyberinfrastructure,
Utah Education Network

UEN and its partners have used Cisco technology to increase backbone segments of the wide area network to 10 GB capability through UEN's multiple Internet Service Providers. In addition UEN's leased circuits provide 1 GB to virtually every school district in the state, ensuring fast and secure access. UEN has also equipped most high schools and all main college campuses across the state with at least one interactive video endpoint classroom. UEN stakeholders have funded additional rooms and video endpoints within their schools and campuses to accommodate the large number of students and teachers accessing the network for class videos and material, while reinforcing the network's security.

Cisco's Unified Computing System (UCS) is also part of the Utah network. It enables engineers to accelerate and simplify application deployment with greater reliability and security. UCS allows UEN to securely share a wide variety of information and connect more equipment, thus expanding their network reach.

To increase student access to classes, UEN's Interactive Video Conferencing operation manages three Cisco TelePresence IP VCRs and hosts and manages five stakeholder owned TelePresence content servers to record and store all class sessions on a Web-based platform. These classroom and lecture capture devices provide recording, playback and streaming options so students and faculty can access video meeting content offsite and from mobile devices anytime, at their convenience. UEN has also updated their Storage Area Network (SAN) to provide high capacity data storage across the state. Additional backup and recovery servers are located off-site in order to ensure that service is not interrupted in case of a disaster.

Finally, UEN invested in the TelePresence Management Suite (TMS), which offers complete control, and management of TelePresence conferencing. Cisco TMS supports up to 100,000 users and devices, and enables users to not only pre-plan but also quickly schedule conferences, helping to reduce costs and contribute to collaboration throughout the state.

Results

Thousands of students and educators use UEN Interactive Video Conferencing (IVC) every day for live, instructor-led instruction, collaborative meetings, and special events. Last fall Utah Governor Gary Herbert originated a live teleconference with students from remote San Juan County in southeastern Utah. The UEN teleconference reached high school students and teachers at 110 specially equipped IVC classrooms. UEN also provided high quality video streaming for schools without IVC classrooms. UEN's network distributed 405 live streams during the address and the recording has been viewed more than 1,600 times. Governor Herbert used the live event to stress the importance of post-secondary education emphasizing, "If you want a good job, get a good education."

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Product List

VIDEO

- Cisco TelePresence MCU 4500 Series
- Cisco TelePresence MCU 4200 Series
- Cisco TelePresence MSE8000
- Cisco TelePresence C40
- Cisco TelePresence C20
- Cisco MPX3000
- Cisco MPX990
- Cisco MPX1700
- Voice and IP Communications
- Video Communication Server Expressway
- 500 Movi Licenses

The increased access to higher education has enabled a greater number of high school students to graduate with college credits. Some even graduate with two-year associate's degrees. As more high school students take college courses, taught by college professors, Utah parents are saving thousands of dollars in college tuition costs. Using five content servers, UEN captures over 100 classes a day, and can record up to 25 classes concurrently. There is also a reduction in travel since students and teachers can access the classroom from almost anywhere in the state, which in turn saves schools a significant amount of expenditure.

With TMS, institutions can book events and classes up to two years in advance, allowing students to better manage their time in school with optimum class schedules. Because classes, conference, and events are pre-scheduled, UEN can accommodate many more ad hoc events including meetings and conferences which saves energy, time and money.

As UEN successfully supports real-time applications over a multi-vendor, high speed network, other institutions are taking note. For example UEN was recently selected as one of 14 pilot affiliates of the U.S. Unified Community Anchor Network, a project of Internet2. "UEN's selection reflects its statewide reach, its well-developed capabilities to enhance education and research in Utah, and its growing national reputation," said the University of Utah's Executive Director of Cyberinfrastructure, Steve Corbató. "Leveraging its recent \$13.6 million Broadband Technologies Opportunities Program (BTOP) award, UEN is now well poised to provide national leadership and bring new innovations and best practices to our universities, schools, and communities."

For More Information

To find out more about the Cisco video solutions, go to:
<http://www.cisco.com/en/US/products/ps10280/index.html>

