

Cisco TelePresence for Higher Education

New Connectivity Technology that Facilitates Knowledge Exchange by Putting Remote Participants together in the Same “Virtual” Room without Having to Travel

OVERVIEW – TRENDS IN HIGHER EDUCATION

The higher education industry is at a pivotal point - competition is fierce and market forces are shifting due to increased access, technological advancements, and globalization.

Institutions around the globe are making investments and experimenting with new strategies to expand their reach, their reputation, and their programs to remain competitive. The ‘Group of Eight’ in Australia has formed to increase the collective strength of the nation’s top institutions by collaborating on research and expanding opportunities for students to enroll across multiple campuses. ‘The Bologna Process’ in Europe connects institutions across 46 countries and is committed to facilitating student mobility and offering broad access to education.

Students of all demographics have simultaneously increased their participation in higher education. In the United States alone, postsecondary enrollments have increased by 50% since the late 1980’s, at an average of 300,000 new enrollments per year. Almost one-third of the 18+ million current students enrolled in US institutions are minorities and the split between males and females is nearly equal.

In this era of innovation, higher education institutions are calling upon their leaders, peers, and partner companies to develop solutions to meet their evolving needs and drive them into the future.

OVERVIEW – CISCO TELEPRESENCE

Cisco TelePresence is a high-performance converged network technology that has begun to light up the radar screens of University administrators who are searching for ways to lower their institutions’ costs of serving students, faculty and staff, while at the same time improving the quality of students’ educational experience. Facilitating research collaboration internally and also externally, with outside institutions, with a system that cuts down on travel, is another motivator for growing interest in the technology. Part of the reason is Cisco TelePresence’s proven track record in the corporate sector. A

recent study of corporations using Cisco TelePresence found that it took just 14 months on average – and just six months in some cases -- to recoup ROI costs (*A Crimson Consulting Group Research Brief, 2009*). In fact, for some corporate purchasers, the dollar, pound or euro “hard savings” from reduced plane and other travel expenses were sufficient in and of themselves to pay for the new Cisco platform.

Cutting back on the direct money costs for travel isn't the only benefit, either. There are important soft savings in the form of increased employee productivity. With less travel, managers and other employees are available to attend more meetings while also suffering less wear and tear scrambling to catch taxis and airplanes. A leading telecommunications company in Europe that adopted the technology estimates having added 10,000 productive work hours in just one year, the hours that formerly were spent sitting in taxis, airports or on planes, dead time in short.

A converged network technology that combines life-size, ultra high-definition imaging using 65" screens and spatially-sensitive CD-quality audio, Cisco TelePresence puts people from distant locations in the same “virtual” room together, as though they were truly meeting “in person” in one and the same place. So seamless is the Cisco TelePresence meeting experience, that some users claim that the perception of a distinction between those physically present in the room and those participating remotely breaks down.

A user-friendly system that launches with the push of a phone button, Cisco TelePresence offers a truly “life-like” meeting environment, one that avoids the cache-latency disruptions of Interactive TV, an alternative teleconferencing tool. Adopters, both in the academic community and business world, also claim that Cisco TelePresence requires significantly less IT staff time to use and maintain, a clear plus for higher education managers faced with sharp cut backs in IT budgets. An online survey of business and technical managers who were exposed to the Cisco TelePresence solution found four out of five – 80% -- of the U.S. respondents claiming their organizations would save from one to three IT staff hours a week because of the platform's ease of use (*SAGE Research, 2006*).

KEY ADOPTION DRIVERS EXTEND BEYOND JUST SAVINGS ON TRAVEL AND EASE OF USE

Although rapid ROI payback is well documented among corporate adopters, as noted above, Cisco TelePresence offers numerous other advantages beyond just the “hard” savings on the cost of hotels, cabs, and airline travel, along with the “soft” savings arising from increased employee productivity. Meetings that can be conducted without travel also lead to a smaller carbon footprint. Corporate adopters report significant reductions in CO2 emissions, a key benefit that supports their organizations' green initiatives. In fact, corporations using the technology report a reduction on average of more than 40,000 tons of carbon emissions annually from reduced fossil fuel use for travel (*A Crimson Consulting Group Research Brief, 2009*).

For higher education administrators, the advantages of this new connectivity technology should be obvious in today's globalized education marketplace, which drives colleges and universities, both non-profit and for-profit, to push into markets far beyond the home campus quadrangle. Colleges' Study Abroad programs, for example, can leverage top academic talent located on the main campus, along with guest speakers in high demand, by having them appear at one or several overseas study centers without the professors or outside speakers having to actually travel outside the country. The same applies to Distant Ed branches served by the main campus.

With the emergence of new niche education markets, including the rapidly growing number of adult learners, along with increasing numbers of traditional college-age students who must juggle full-time jobs with study to pay for their schooling, higher education administrators can better leverage institutional resources by deploying a seamless Distant Ed classroom meeting solution such as Cisco TelePresence. One reason is the scalability of the technology. The platform helps administrators leverage main campus resources. For example, top faculty can't be everywhere at once. But with the Cisco solution, they can

participate in a seminar that is ten, 20, 200 or even thousands of miles away as though “physically present” because of the “in person” life-like quality of the combined audio and video capture.

Early adopters may also benefit by gaining a marketing edge over institutions that lag behind in technology adoption. Because Cisco TelePresence is a collaboration platform that poses less of a barrier to natural interaction, compared with conventional audio-visual and online tools, institutions using it can gain a competitive advantage with their Distant Ed students. The seamless “in person” quality of classroom instruction can strengthen brand loyalty among this student group, resulting in lower turnover, and possibly higher enrollments, as word gets out.

Among institutions of higher learning that sponsor funded research, or offer post-graduate programs, Cisco TelePresence can be a game changer. Institutions seeking to extend their reach beyond the main campus walls to include a broader array of private foundations, external corporate research sponsors, as well as other institutions of higher learning in their network, whether five miles away, or five thousand miles distant, will find that Cisco TelePresence provides an “access” edge for partnering with other organizations that either have installed the Cisco TelePresence solution or have access to public Cisco TelePresence facilities.

This is especially true for institutions targeting the highly competitive executive education market. Cisco TelePresence can provide early adopters an “access” edge for penetrating this market, compared with universities and colleges that fail to upgrade their distance learning capabilities. Customized executive education programs that combine quality academic content with “high touch” in-person meeting technology, often connecting directly to the corporation’s Cisco TelePresence room, better meet the quality and performance expectations that corporate executives, a very demanding group of customers, have come to expect.

Higher education managers charged with managing alumni relations, including alumni able to make major gifts, can deploy this new technology to reach a significantly larger group of high-value alumni, both current and prospective donors, at lower cost to the institution. That can translate into more gift revenue per budget dollar spent on the institutional advancement program. And the same scalability of resources applies to institutional staff charged with managing corporate, government and private foundation research sponsors. For college admissions officers, Cisco TelePresence can facilitate seamless “in person” interviews with prospective students unable to travel to the institution for a live interview, assuming they can access Cisco’s platform at a site near to where they work or live.

HIGHER EDUCATION EARLY ADOPTERS REPORT KEY BENEFITS AFTER ROLLING OUT CISCO TELEPRESENCE : THREE CASE STUDIES

Madison Area Technical College

Although initially skeptical when first approached about deploying Cisco TelePresence, administrators at Madison Area Technical College, which has its headquarters in Madison, Wisconsin, finally decided to include the technology, as a way to improve instructional quality at its branch learning sites, as part of a multi-million dollar IT infrastructure overhaul. According to Roger Price, Madison College’s Vice President of Infrastructure, “the appealing piece was that it was life-size and it wasn’t the same Distance Ed technologies as in the past. I’ve used Blackboard, Audio, 2-way interactive, and I knew the difference from the moment I saw it.” Because Madison College was already using Cisco’s Voice Over IP phone technology, integrating Cisco TelePresence with the existing phone platform was quickly and easily achieved.

Madison College prides itself on being a high-tech pioneer in higher education and so a pilot implementation of the new converged network platform fit well with the school’s mission of being a technology innovator. In an early Summer, 2009 pilot, Cisco TelePresence was installed at two Madison College distance education

sites, initially for a Professional Development career-building course featuring resume writing, job interviewing and the like. In addition to providing an "in person" virtual classroom experience thanks to the Cisco TelePresence video-audio platform, which could accommodate up to 17 students and an instructor, document cameras were also available to students and instructors so that Power Point, Excel and Word Documents could be discussed and shared, with documents displayed on three monitors mounted at each side and just below the Cisco TelePresence 65" video screens. A report on the pilot found a high level of satisfaction among the Madison College students, instructors and guest lecturers. Many students said they

were pleasantly surprised by the high quality of the sound and images. In effect, the technology faded into the background, become practically invisible.

Improving the quality of the classroom experience for Madison College's Distant Ed students was the main benefit of installing Cisco TelePresence

Realizing the technology's value in boosting Distant Ed students' perceptions of instructional quality, Madison College administrators decided to reserve the platform

exclusively for teaching purposes, rather than invite staff to use it for their meetings. Madison College wanted its Distant Ed students to come away with a perception that they were getting the same quality of instruction they would receive as if physically present in the same room with the instructor. Although students' ease of travel is a key reason behind the growing popularity of distance education, according to Price, he notes that access – just cutting student travel time – is only one part of the value equation. "The quality of the educational experience is also an important enrollment builder in distance education," Price adds.

Madison College's administrators see value in expanding the curriculum available to Distant Ed students via the Cisco meeting solution to include other liberal arts subjects such as reading, writing, and history, which the College plans to do very soon. By the end of 2009, Madison College plans to expand Cisco TelePresence from the two pilot sites to a total of six locations. "There's a lot of excitement around it, not just among the students but also among our Distance Ed faculty, some of whom were initially skeptical," observes Price. "In fact, we'd have a problem with our students, if we were to suddenly take this platform away, because so many have grown attached to it."

An important advantage of Cisco TelePresence for Madison College is its glitch-free reliability, and the fact that faculty can use it without having to call on IT for support. "You don't have the same glitches as you do with other Distance Ed tools, and that makes it so much easier for our faculty," says Price. At the same time, Madison College's VP of Infrastructure also notes the challenge of making sure that the College's Distance Ed sites have the right kind of classrooms available, with the necessary sound and lighting specifications to obtain optimal value from the Cisco platform.

What about Madison College's plans for the future? Madison College plans to experiment with Cisco TelePresence possible use to meet other campus needs. "Student recruiting is one of several other areas we've talked about using it. It can contribute to our marketability," says Price, who also views Cisco TelePresence's scalability as a powerful enrollment builder, because of the platform's ability to leverage main campus academic resources and push them out to the growing Distance Ed student population at Madison College branch locations. Building out the enrollment is a key goal in the institution's strategic plan, which also calls for widening the net of institutional partnerships, in both the business and academic community. Once in place, Cisco TelePresence can be easily adapted for use in collaborative cross-organizational partnerships -- another important strategic goal for Madison College according to the College's VP of Infrastructure.

Carnegie Mellon University's Pittsburgh SuperComputing Center

The need for a new videoconferencing platform to link collaborating researchers at far remove, one that could slash institutional travel time and costs without losing the "virtually" present, face-to-face interaction of a real physical meeting, led Carnegie Mellon's Pittsburgh SuperComputing Center to go with Cisco

TelePresence. "It's a more professional system than what we used in the past," says Wendy Huntoon, Executive Director of the Pittsburgh SuperComputing Center. "For example, it made it possible for me to attend a workshop in Kansas City that I couldn't physically travel to. It was much better than sitting on an audio bridge, because the video camera captures much more nuance in the interaction among participants, and it's a push button technology. You put in a number, dial, and you're connected. It's like being on the scene in person," adds Huntoon.

Seamless, high-quality teleconferencing in support of research collaboration internally, and with other institutions, was a major benefit for Carnegie Mellon's Pittsburgh SuperComputing Center when it decided to install Cisco TelePresence.

Huntoon and her team looked into other videoconferencing platforms, including one already in use at the Pittsburgh SuperComputing Center, but they were low-end platforms that lacked the ease-of-use and high-quality videoconferencing functionality that Huntoon's group needed to improve research collaboration.

According to Huntoon, Cisco TelePresence makes it possible for Carnegie Mellon's central administration to sharply cut staff and faculty travel costs. As international collaboration grows between the main campus, its offshore branch campuses, and other higher ed partner institutions, faculty can provide "in person" instruction without having to travel. For example, a professor can teach a course in China without having to board a plane to a counterpart university in Beijing. "We've talked to schools in China, in Abu Dhabi, in the UAE, in Austria, and in Australia, who've all expressed an interest in adopting the Cisco TelePresence platform," notes Huntoon. Because of the platform's benefits for users, Huntoon and her colleagues anticipate that more institutions will adopt the platform.

As more institutional users come on board, momentum builds for additional adoptions, as well as for new applications of the technology to meet schools' other needs. For example, Huntoon foresees advantages to institutions that make Cisco TelePresence available for use by their graduating students, so they can do job interviews with prospective employers who also have access to this platform. She also sees potential for the technology in Carnegie Mellon's recruitment of job seekers, who could be interviewed remotely using the platform rather than having to travel to Pittsburgh.

Huntoon notes, however, that as the platform is extended to other Carnegie Mellon University users, and as more institutional partners beyond Carnegie Mellon also begin to adopt the technology, scheduling issues will have to be addressed. "Currently, scheduling is ad hoc, but as the number of units with this platform increases, we'll need a more rigorous system for scheduling use. That's a challenge because other institutions are likely to be using different scheduling software," Huntoon adds.

The University of California, San Diego

Searching for a video collaboration system with exceptional reliability, Dr. Larry Smarr, Director of the California Institute for Telecommunications and Information Technology, a joint University of California, San Diego, and University of California, Irvine partnership, saw clear advantages in going with the Cisco TelePresence solution. Smarr wanted researchers at both the San Diego and Irvine campuses who were part of his Institute to be able to hold virtual "in person" meetings that came as close as possible to "in person" face-to-face interaction. That would save the Institute's researchers having to spend large amounts of time, not to mention fuel, traveling Southern California's congested highways. "Lighting, sound and eye contact are far superior with Cisco TelePresence," Dr. Smarr emphasizes, adding that Cisco's strong field support was an added plus. That support, plus the proven "productization" of the technology -- by which Smarr means a technology that is out of Beta testing and ready for real world use -- was a key differentiator compared with other vendor offerings, whose functionality and ease-of-use was not as well established.

"Cisco's TelePresence system included the table, chairs, lighting, sound, a complete plug and play package, and that was worth the premium you pay," Smarr explains. "With some of the other systems out there you just get a camera," he adds. In addition, Cisco's connectivity platform helped to meet the University's goal of reducing its carbon footprint, by reducing faculty and staff travel. That was an added benefit that helped to justify adoption by the joint UC, San Diego-UC, Irvine Institute that Smarr heads.

At the University of California's San Diego campus, administrators were searching for a collaboration platform that could easily link up with other universities, and that was also a "green technology" that, by reducing the need for travel by car and plane, would also cut fossil fuel use.

Because the UCSD platform is the single screen rather than multi-screen version, current use of the technology is limited to face-to-face meetings involving just a few people. "Scalability is pretty limited right now," Smarr notes. Despite that drawback, the goal is to extend the platform from UC, San Diego to the UC Irvine Campus to facilitate research collaboration between the UC, San Diego and UC, Irvine Joint Institute's researchers.

The next step will be to build out the platform so as to include research collaborators at the major corporations and other institutions, in the U.S. and also abroad, that Smarr's Institute collaborates with. "Collaboration among universities is the wave of the future, and Cisco TelePresence provides the stable, high-quality connectivity that is required between the two-campus Institute that I run," Smarr emphasizes. "We're also tightly coupled with the National Lambda Rail (NLR), which recently demonstrated linking up three Cisco TelePresence sites in the U.S. with one in Australia, by interconnecting NLR with Australia's AARNet," he adds.

A challenge is the return on investment payback. The platform is too expensive to be used widely across the UC, San Diego campus at the present time, Smarr claims, noting that the existing units are used 45% of the time. "Multi-point meeting capability is the desired goal, so that joint UC, Irvine-UC, San Diego Institute meetings at the Director-level can take place without the need for travel," Smarr explains. After the UC, Irvine campus unit is in place and linked up, Smarr's team intends to quantify the ROI payback by toting up the hours and travel costs saved as resulting of Institute personnel cutting back on the many one-and-a-half hour highway trips between the two University of California campuses they would typically travel during the year.

By the end of 2010, UC, San Diego will have upgraded Cisco TelePresence from a platform that's currently restricted to just internal UC, San Diego institutional use to a multi-point system, one that will facilitate collaboration between the UCSD-UCI Institute's scientists and researchers in such faraway nations as Taiwan, Korea, Saudi Arabia, India, Australia. Being at the forefront of new technology is an important goal for the Institute Dr. Smarr heads. "Part of our job at UCSD-UCI's joint California Institute for Telecom and Info Tech, is to put new technologies into use, in a real world environment. We're a 'tomorrow land' showcase for technology out here on the West Coast," Smarr says. What Cisco TelePresence achieves superbly well, in Smarr's view, is to remove the technology barrier from meetings – putting the technology completely in the background -- to the point that, at least for meetings involving small groups, having everyone physically present in the same place has practically no added advantage over coming together "in person" via Cisco TelePresence.

CONCLUSION

Today's university administrators, much like their counterparts in the corporate world, are looking for a converged network technology that, at a reasonable cost, can expand their institutions' global reach, while also achieving their organizations' "green" energy saving goals. In today's tightly constrained budgetary environment, the significant savings, including hard as well as soft costs, can help justify the investment in a high-end solution such as Cisco TelePresence. Much will depend, of course, on how the technology is put to use by the adopting institution. Some benefits, for example, savings in employee or faculty travel time and T&E costs, can be quantified. Other benefits, for example, improved retention of Distant Ed students, or gains in enrollment, may be harder to estimate for an ROI justification.

As institutions of higher education begin to penetrate both national and also offshore markets in other global regions, having high-end tools that can extend the institution's brand visibility and market penetration become an obvious strategic advantage. Whether the goal is to enhance Distant Ed students' perception of instructional quality, to leverage the time and availability of top faculty by making them accessible to larger numbers of distant learners, or to open up new cross-institutional opportunities for collaboration among university researchers and administrators, there are clear benefits to institutions that adopt a high-end platform noted for both its ease of use and its high-touch "in person" meeting and instructional environment – one that is sufficiently life-like that it pushes the technology into the background.

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