EXECUTIVE SUMMARY

Customer Name
Universidad Autónoma de Tamaulipas (UAT)

Industry
Education

Location
Mexico

Number of Employees
3,000 teaching staff and 50,000 students

Business Challenge
- Increase number of students
- Improve education delivery and teaching quality
- Reduce IT and tuition costs

Network Solution
- Cisco IP network connects six campuses in 13 cities and provides a platform to build services around students' needs
- Cisco Unified Communications enables cost-effective, anytime, anywhere access to tools and learning resources

Business Results
- Enrollment rates up 100% over last 12 months
- Students have greater control over their own studies, and teachers are better equipped to teach
- 60% savings on call charges

University Uses IP Technology to Increase Opportunities

Holistic IT approach helps Universidad Autónoma de Tamaulipas to maximize student potential

Business Challenge

According to the Organization for Economic Co-operation and Development (OECD)[1*], Mexico has, in the past, seen limited progress in helping ensure that young people leave school with strong baseline qualifications. Despite placing considerable emphasis at a national level on course assessment and evaluation, staying-on rates (the number of students who pursue further education studies) remain comparatively low (48.8% compared to the OECD average of 81.5%). As a result, many young people are not engaged in employment, education, or training. In addition, a significant proportion of those who do attend higher education fail to successfully complete their programs.

Universidad Autónoma de Tamaulipas (UAT) is creating a brighter future. The public university's technology-led approach to education is helping to boost student numbers and teaching standards, while at the same time, establishing stronger links with businesses and subsequently improved job prospects for those leaving school.

But, this has been no overnight change. The seeds for success were sown several years ago when UAT first saw the opportunities provided by IP technology. In particular, UAT saw how this technology could enable the university to reach out and attract more students, raise the quality of teaching, and make savings so that more money could be invested in front-line education rather than administration and back-office support. The first step towards achieving these goals was to find the right technology partner.

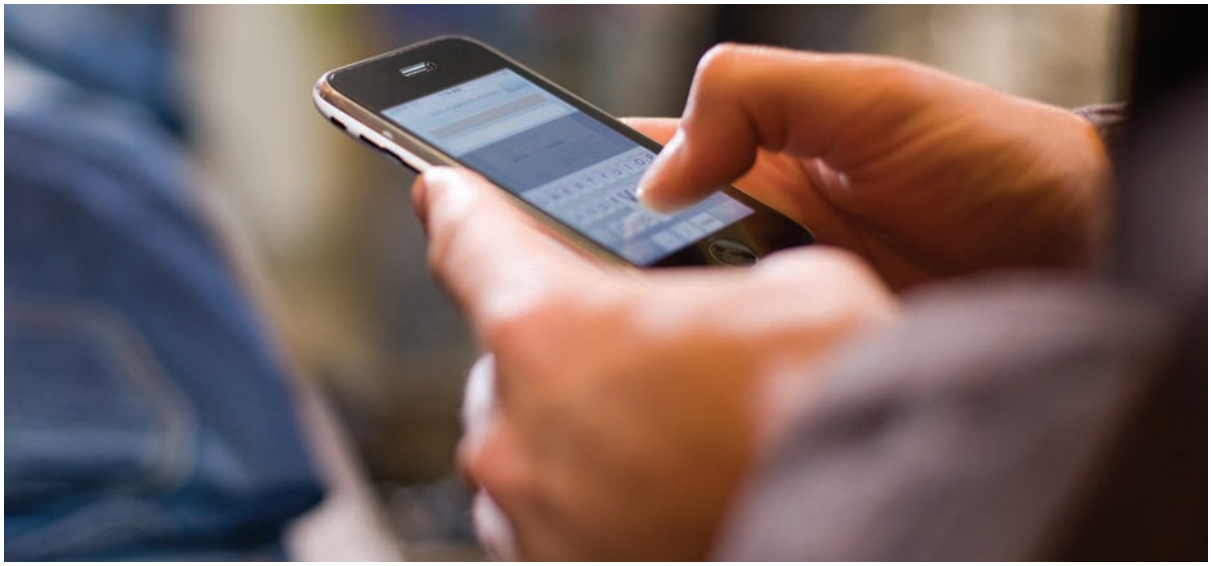
Marco Treviño, chief information officer for UAT, says, "We needed someone we could trust to help us to develop our campus network and online learning platform. By selecting Cisco, we also knew we were lowering risk. They were able to share their experience and best practices gained from working with education providers around the world. This meant that we could turn our vision into reality much faster and with total confidence."

Network Solution

The breadth and scale of UAT's campus network are significant. A foundation of Cisco® Catalyst® Switches and Integrated Services Routers connect six campuses in 13 cities, providing 3,000 teachers and 50,000 students with anytime, anywhere access to information and learning tools and resources.

UAT has used its Multiprotocol Label Switching (MPLS) network as a platform to unify voice, data, video, and mobile communications. A complex and expensive estate of aging Private Branch Exchange (PBX) systems has been replaced by Cisco Unified Communications Managers and 800 Cisco IP phones, which combine to form one central, easy-to-manage IP and video telephony solution. It has also helped to consolidate other services. Carlos Portes, director of communications for UAT, says, "Cisco's open standards architecture also acts as a single integration point for our legacy videoconferencing systems. This allows us to multicast various vendor solutions more efficiently as on-demand services over one campus network, instead of running them as high-cost stand-alone systems operating over multiple infrastructures."

Each classroom is equipped with a SMART Board interactive whiteboard, a PC, and a projector. A Cisco Wireless LAN (WLAN) allows students to use their laptops or mobile devices to follow lectures and upload or download materials. Alternatively, they can move freely around the campus and remain connected to the Blackboard Learning System for online course management and the UAT portal.



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– Marco Treviño, Chief Information Officer, UAT

[1*] http://www.oecd.org/dataoecd/32/25/41277868.pdf

"Moving to Cisco IP telephony has cut our call charges by 60%. That's US$ 45,000 each month that can be re-invested back into education or used to fund future IT projects. In most cases, system changes can be completed centrally, removing the need for an engineer to visit the site."

— Carlos Portes, Director of Communications, UAT

The portal acts as the central repository for information and provides an online learning platform where students can, for example, look up directories and timetables or book themselves onto video seminars. The WLAN has also improved access to data and business applications, including the main Internal Information for Academic and Administration System (IIAAS) for managing payments, administration processes, and student records.

At UAT's data center, Cisco virtual blade switch technology optimizes server utilization and bandwidth. But the collaboration between UAT and Cisco is not only about helping ensure high availability of systems and applications. It is also encouraging the next wave of innovation to flourish, both on the campus and externally within the wider community.

The university was one of the first in Mexico to join Cisco's Networking Academy Program. This centre of excellence teaches students how to build and maintain networks, while also gaining the knowledge and skills necessary to eventually take and pass Cisco certification examinations.

Beyond the campus, UAT's network interconnects with RedCUDI, Mexico's research and education network, which in turn links (via the Abilene network) to over 200 educational institutions, 70 corporations, and 45 agencies in the United States. Known as Internet-2, this high-performance IP backbone enables researchers in both countries to share resources, foster collaboration, and exchange huge amounts of data at unprecedented speeds. Connection to Internet-2 allows UAT to take advantage of optical networking economies and grid computing, while realizing IPv6 high-speed data transfer performance, the most advanced for packet switched internetworking.

Business Results

Using its network as a platform to execute a well-planned technology roadmap has enabled UAT to reach more young people and citizens and to provide them with greater educational choice and support. With ubiquitous access to web-based tools and videoconferencing, bachelor degree and many other classroom-based courses can be run as distance-learning programs. UAT's growing reputation and ability to provide education that fits around busier lifestyles has seen enrollment rates double over the last 12 months.

"We recognised early on that the technology must be simple and easy to use. Our Cisco phones integrate telephony with video and can be transported around the campus. This allows administrators, teachers, and parents to keep in touch on important daily school topics. It also eliminates hassle and time spent travelling from one meeting to another, so our teachers have more time to teach."

— Marco Treviño, Chief Information Officer, UAT

As well as helping to drive student intake, Cisco Unified Communications has enabled UAT to improve the delivery of education, while at the same time, lowering IT and tuition costs. The wireless network provides students with greater flexibility and control over their own studies. They can get online easier in order to use self-service options, access information and materials, and share problems and learning outcomes. They can also register for web-based tutorials and decide whether to participate in one of 18 videoconference rooms or remotely, via their laptop or PC.

Feature-rich IP-enablement has also had a positive effect on teaching. UAT has achieved 90 percent national teaching standards certification. There have also been some lessons learned on the way. "We recognised early on that the technology must be simple and easy to use. For example, our Cisco phones integrate telephony with video and can be transported around the campus." Treviño says: "This allows administrators, teachers, and parents to keep in touch on important daily school topics. It also eliminates hassle and time spent travelling from one meeting to another, so our teachers have more time to teach."

And the investment is paying back elsewhere. Before, UAT spent around US$ 75,000 a month on calls and around US$ 28,000 a year on PBX maintenance. "Moving to Cisco IP telephony has cut our call charges by 60 percent. That's US$ 45,000 each month that can be re-invested back into education or used to fund future IT projects. In most cases, system changes can be completed centrally, removing the need for an engineer to visit the site," says Portes.

Each semester around 500 students enroll in the Cisco Networking Academy to obtain the skills and practical experience that they need to pursue IT careers in industries ranging from technology and finance, to medicine and entertainment. "The curricula consist of instructor-led e-learning courses that offer interactive exercises, network simulation software, and virtual tools. Our on-site laboratory, donated by Cisco, also gives students the chance to underpin theory with hands-on practice," says Treviño.

By enabling wider collaboration with the Internet2 community, the Cisco network has also helped UAT to launch new projects such as Telemedicine, Virtual Libraries, Distance Education, and Geographic Information Systems.

Next Steps

In a typical uncontrolled higher education environment, up to 80% of network traffic can be peer-to-peer (P2P) traffic, recreational video traffic, or traffic generated from gaming applications. Apart from placing unnecessary demands on bandwidth, this also requires "beyond the firewall" protection to mitigate the increased risk of viruses, worms, and attacks.

To counter this risk, UAT is trialing several Cisco solutions: Cisco Application Performance Engine to prioritize P2P and Flash-based video traffic; Cisco Network Admission Control Appliance to enforce security policy compliance; Cisco Wide Area Application Services to optimize application performance; Cisco Security Manager with Cisco Monitoring, Security, and Response system for event correlation and rapid attack response capabilities.

Other projects include extending outdoor wireless coverage and Cisco IP Video Surveillance. The deployment of Cisco WiMax is also being considered, opening up new possibilities for UAT to work with local government to offer network services to the local community.

Product List

Routing and Switching

- Cisco 1800, 2821, 2851, 3826, and 3845 Series Integrated Services Routers
- Cisco 7206 VXR Router
- Cisco Catalyst 2960, 3560E, 3750, 4500, and 6500 Series Switches

Network Management

- CiscoWorks LAN Management Solution

Security and VPN

- Cisco ASA5500 Series Adaptive Security Appliances
- Cisco Intrusion Prevention System
- Cisco Security Agent

Video

- Cisco Videoconferencing and Video telephony

Voice and IP Communications

- Cisco Unified Communications Managers
- Cisco Unity® Express
- XML Applications (mobility services, unified login, network status, email integration)
- Cisco SIP Trunking Services (for interoperability with Cisco SCCP)

Wireless

- Cisco Aironet® 1131 and 1242 Access Points
- Cisco Wireless LAN Controllers

For More Information

To discover how Cisco's step-by-step approach is enabling colleges and universities to become more globally focused, student-centric institutions go to **www.cisco.com/web/strategy/education/higher_education.html**

For further information on the Cisco Networking Academy go to **www.cisco.com/web/learning/netacad/index.html**

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