



Dawn of the digital campus

Asia's oldest university leads the way in technology adoption

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Engr. Sebastian Raymond A. Mendoza,
Assistant Director for Network Operations

Inside:

- The challenge that UST faced
- Continuing the journey with Cisco
- Why Cisco solutions were the right choice
- UST – A technology innovator and consultant to others



University of Santo Tomas – a guiding light for 400 years.

The University of Santo Tomas (UST) is one of the most prestigious universities in the world. To date, it has produced four presidents of the nation, a number of vice-presidents, various chief justices of the Supreme Court, senators, congressmen, and accomplished scientists, architects, engineers and writers, as well as revered national hero Dr. José Rizal. Being one of the largest Roman Catholic universities in the world, it is also the only university to have been visited by no less than three Popes.

The challenge

UST is Asia's oldest university – being established more than four centuries ago. However, UST's management, through its technology department, Santo Tomas e-Service Providers (STePS) was forward-thinking and had a vision – to become one of the country's first digital campuses. This was a complex challenge, as UST's campus was sprawling, and its student population – in excess of 40,000 and still growing – was the largest for a single campus in the Philippines.

The management and leadership of STePS were committed to keeping pace with technology advancements, and to seize the opportunities it provided to empower both students and teachers with anytime, anywhere access to education, information, and services. This was especially important, given the proliferation of mobile devices among students.

In addition, management – both professors and administrators – wanted to forge a closer relationship and have regular interactions with students that was not limited by physical proximities – something only possible through technology.

“Digital technology has the potential to profoundly enhance the educational process, just as it has transformed the world of work,” said Engr. Sebastian Raymond A. Mendoza, Assistant Director for Network Operations at UST. “Classrooms that are well resourced in technology can help facilitate learning objectives and teaching strategies, helping to make educators more resourceful, creative and productive.”

The journey continues

While UST had provided wireless access at its campus as early as 2007, the campus area had continued to grow, with new building facilities and classrooms added every year, as the institution continued to expand its curriculum. Wireless access across the campus was only partial, with limited access from selected indoor facilities and

classrooms. There was also a limitation in terms of the number of internet users the network can accommodate, due to the high cost of smart devices and the capacity a wireless access point can accommodate at any single point in time – about 40 to 50.

Since 2007, UST has gradually increased its internet bandwidth from initially just 20 mbps to over 1.5 gbps currently. Access points were recently upgraded to Cisco’s AIR-AP1572EAC-A-K9, AIR-AP1852I-A-K9 and AIR-AP2702I-UXX9 models. The number of outdoor access points itself was increased from 22 to 37 and indoor access points from 104 to 246, with plans to further increase them as the campus continues to expand. With these changes, the UST’s wireless network infrastructure will be able to handle as many as 300 users or more per device at any point in time.

As of today, 100% of the UST campus’ outside areas, as well as common areas – the auditorium, conference halls, library, faculty rooms, major offices, and audio visual rooms – have wireless access. The next phase of the technology enhancement – enabling wireless access to all classrooms – will take place in phases and is slated to finish by mid-2019. Currently, UST’s Senior High School and Junior High School have wireless access in the classrooms.

Students at UST can access a range of research, curricula, and e-learning resources via their iPads or laptops, instead of what used to be a process of searching for material, queuing to borrow, and photocopying. Teachers are also able to

share assignments and coursework on demand through the e-learning system and online video collaboration. As a result, learning at UST no longer ends at the edges of a classroom or even the campus anymore, and this has liberated both teachers and students. Student-to-student collaborations, as well as communications with teachers have been significantly enhanced.

Mendoza said: “Our wireless network infrastructure has provided students with access to a wide range of information from any given hotspot – the campus ground, library areas, sports complex, event plaza, garden kiosks, building hallways and lobbies, ballrooms, and even the stairways.”

He added: “One of our priorities is to ensure that our students have a seamless wireless internet access, even if they are on the move. As such, the design of our network is based on a controller-based technology, which basically allows you to have uninterrupted access to the Internet. By 2019, we look to have achieved this anywhere on our campus.”



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Why Cisco?

UST's management and its technology department (STePs) were no strangers to Cisco solutions and infrastructure. Cisco equipment have been at the core of UST's network infrastructure for more than 25 years, demonstrating consistency in performance, reliability, availability and fulfillment of support requirements. This trust equity that Cisco had built over decades with UST had earned their confidence.

"We have always approached UST with a view to delivering an end-to-end, holistic solution to their challenges. Beyond just being a solution and service provider, Cisco believed in the importance of presenting a vision to UST – that of a digital campus as well as an exciting roadmap to get there," said Paulina Rillo, Territory Account Manager for Sales at Cisco.

Mendoza added: "When we decided in 2007 to integrate all the technologies and solutions from different vendors across our infrastructure, we decided to go with Cisco. Besides the fact that they were able to provide an end-to-end solution, our experience with them had also been positive – in terms of the reliability of their equipment and support as well as the support we received from their management.

UST – a technology innovator

UST was one of the first – if not the very first universities in the Philippines – to move towards delivering 100% free wi-fi access at its campus in 2007. It was the first to achieve 100% coverage of the outside areas and come 2019, looks set to be the first to deliver 100% wi-fi access in all parts of the campus. Quite an accomplishment considering its size and student population.

In the Philippines education landscape, UST is recognised as a pioneer in technology adoption. The technology department provides consultancy to other universities and academic institutions on their own digitization efforts. UST is regularly invited to benchmarking activities, speaking engagements, peer discussions, presentations, and events, as well as online and onsite collaborations.

UST and Cisco are looking towards the future

as well. On top of the sophisticated wireless solution and Catalyst switching and server solutions, UST is in a position to deploy innovative new software and applications. And the institution is reviewing exciting technologies such as mobile applications, cloud-based solutions, intelligent network, analytics, security policy, unified communications, telemedicine, digital media services and others.

Perhaps the most important impact of technology on UST has been in terms of shedding a light on the possibilities. At the UST board room, discussions centre around how else the student experience can be enhanced, as well as how educators can be further empowered. Technology is seen as a strategic, indispensable enabler to everything.

Even after 400 years, UST continues to be the guiding light for the education sector.



Engr. Mendoza, with members of the Santo Tomas e-Service Providers (STePs) team.