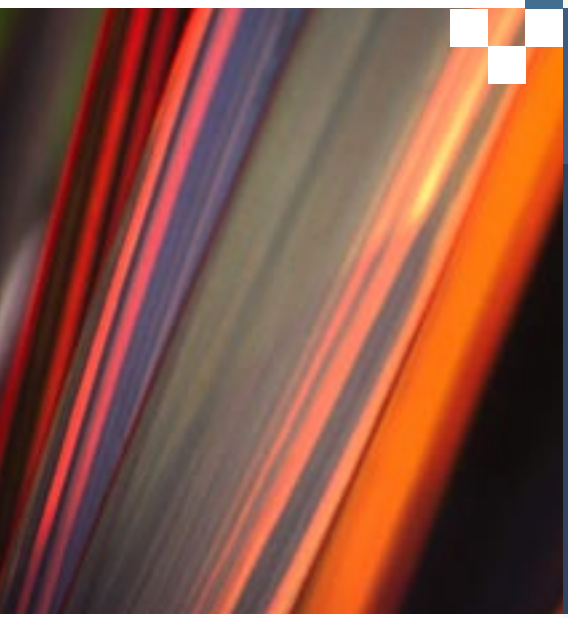
making IT happen



Connecting the Campus Wirelessly

A Truly Seamless Learning Environment

INDUSTRY
- Education

CHALLENGES
- Enable non-disruptive classroom teaching & learning experience
- Provide proactive maintenance

OFFERING
- Virtual Canvas wireless-enabled technology on campus
- Teaching Facility Management Support System

BENEFITS
- Truly interactive, participatory class sessions between lecturers and students
- Richer, more productive learning experience for students
- High level of satisfaction among students
- High system uptime
- Savings in cost and support personnel
- Scalability and flexibility to evolve and expand with future technologies

Transforming Learning Singapore Management University's "unique pedagogy" involves small class sizes and an emphasis on interactivity between professors and students, class participation and project presentations. This is a shift away from large lectures and the tutorial system. In line with this approach is a series of IT applications that NCS has developed to transform the university into arguably the first-ever comprehensive wirelessly-connected campus in Singapore and the region, in every sense of the phrase, from total classroom interaction to the overall campus administration.

"Virtual Canvas means seamless, non-disruptive learning. The professor or lecturer is no longer bound to the lectern. They can move around in the room with their Tablet PCs while projecting the teaching content on screen. Students too can beam their own materials to the projector without moving from their own desk."

- Assoc Professor Leong Kwong Sin, Chairman, SMU IT Faculty Advisory Board and Associate Professor of School of Accountancy, Singapore Management University (SMU)

Virtual Canvas ■ This core initiative, developed and implemented by NCS, integrates and extends existing technologies and providing a unique, non-disruptive classroom teaching and learning experience. It aims to support and enhance the interactive and participatory learning process of students within the classroom. Technologies include pen-computing functions of Tablet PCs, overhead networked projectors, Windows Active Directories, control touch panels and scheduling.

The pen-computing and writing features of the Tablet PC allow a lecturer to teach and guide the class in a more natural way while the Virtual Canvas application integrates the conventional audio-visual equipment with computer technology into one seamless, wireless connection inside the classroom.

To enable this participative learning environment, each classroom is equipped with two screens and two ceiling networked projectors. During a lecture session, students and lecturers bring their own Tablet or Notebook PCs, which are connected to the projectors when they enter the classroom. The lecturer at the lectern or head table, and students sitting at their own desks can individually and directly "take over" a projector in order to transmit the material from his or her own PC for a presentation. There are no more disruptions caused by the fumbling and wasted minutes of connecting and disconnecting individual Notebook PC to a projector when different individuals make presentations.

Also, with two projectors in each room, a lecturer can retain his projection on one screen while a student is projecting to the other screen. This is extremely useful in the situation when the lecturer shows a question on his screen while a student presents an answer on the other screen. Another benefit is that two students can also project at the same time, giving the rest of the group the opportunity to compare their work visually.

Proactive Maintenance, High Uptime ■ Complementing the Virtual Canvas is the Teaching Facility Management Support System (TMSS) that enables IT staff to monitor the teaching facilities anywhere, anytime on campus and respond quickly to any fault or breakdown, resulting in proactive maintenance and high availability of equipment. TMSS is also able to shut down classroom equipment at a pre-set time to ensure such equipment is used to the maximum efficiency.

TMSS is an evolving application, and future capabilities being planned would include live camera monitoring so that support personnel can remotely view the classroom activity, and video-recording scheduling by support staff of a class session.

The Benefits ■ Integrating classroom technology and equipment with the university's teaching pedagogy has added value to SMU in terms of a richer learning experience for students, a higher level of students' satisfaction and savings in cost and support personnel. NCS' solution has thus led to a concrete fulfilment of the university's commitment to an interactive, participative and technologically-enabled learning experience.

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