

# WEB TV!

## CAMBERWELL GRAMMAR SCHOOL INTRODUCES VIDEO-ON-DEMAND & IP TELEPHONY



**FOUNDED IN 1886, CAMBERWELL GRAMMAR SCHOOL HAS A LONG TRADITION OF PROVIDING A CHALLENGING EDUCATION PROGRAM TO BOYS FROM VICTORIA, AUSTRALIA AND OVERSEAS. TODAY THE CAMPUS IN THE MELBOURNE SUBURB OF CANTERBURY COVERS OVER NINE HECTARES AND HAS 1,200 STUDENTS FROM PRE-PREPARATORY TO YEAR 12.**

Over the years the school has ensured that as new technologies evolve, they feature prominently throughout the curriculum and systems to benefit students, teachers and administration staff.

The school has therefore developed a strong information technology policy, which is introduced in junior school with computing integrated throughout the curriculum.

Of the 1,200 students, more than 600 have their own lap top computers, which are extensively used for research, preparation and presentation of assignment work. The school is well known for its music curriculum and many of the students use their laptops to write

and create notation, play back scores and listen to other students' compositions. Teachers use them for report writing as well as planning, accessing the Internet and communicating via e-mail. All full-time teachers are provided with their own notebook computer and have access to the school network both at work and from home. The school network extends from the Junior School on the western boundary to the Music School on the east. It provides students and teachers in all classrooms, the two libraries and the computer centre with access to email, files, servers, printers, the intranet and the Internet.

THIS IS THE POWER OF THE NETWORK. NOW.



## THE CHALLENGE



**IN 2002, CAMBERWELL GRAMMAR SCHOOL BUSINESS MANAGER, PAUL RIDGWAY WAS LOOKING TO UPGRADE THE SCHOOL'S AGEING PABX TELEPHONE SYSTEM WHICH WAS PROVING EXPENSIVE TO MAINTAIN AND REQUIRED FREQUENT CALL-OUTS FOR AN ENGINEER TO FIX PROBLEMS OR ADD A PATCH.**

Each time a new extension was required it would cost the school around \$800 and take up to two weeks for a technician to come and install it. Another problem related to the many different cabling systems for telephones, data, video and security.

Most cable runs were full and installing further connections for a new telephone, data link, video link or security door was becoming difficult

**"CISCO SYSTEMS HAS A STRONG AND PROVEN TRACK RECORD IN IP-CONVERGENT NETWORKS AND A SOLID UNDERSTANDING OF THE EDUCATION MARKET. THEY ALSO COULD DEMONSTRATE EXPERTISE IN THE TELEPHONY AREA – EXACTLY WHAT WE WERE LOOKING FOR"**  
**PAUL RIDGWAY, BUSINESS MANAGER, CAMBERWELL GRAMMAR SCHOOL.**

When investigating the alternatives, Paul considered the whole ITC environment. He also wanted to upgrade the school's Wide Area Network with wireless hotspots so that students and staff could access the Internet, their personal files and curriculum applications from anywhere on the campus. And he knew that if the school was to take advantage of the flexibility and enhanced educational opportunities presented by emerging IP technologies such as Video over IP, IP Telephony and videoconferencing, the school network needed a major upgrade.

Mr Ridgway believed a Cisco converged network offered the best option for the school to position itself for the future.

## THE SOLUTION

**CISCO SYSTEMS AND THEIR CERTIFIED PARTNER DEVELOPED A COMPREHENSIVE PROJECT PLAN AND PROPOSAL, WHICH PROVIDED THE SCHOOL WITH A CLEAR VIEW OF THE PROJECT STAGES, TIMINGS AND COSTS.**

"The planning phase was the most critical," commented Paul Ridgeway. "The engineers showed a true understanding and depth of appreciation for what we were trying to achieve and knew precisely what technology would get us there."

The school's new converged network features two Cisco Catalyst 4006 Switch stations and Cisco Catalyst 3524 XL stackable 10/100 and Gigabit Ethernet switches. Previously, a 10-centimetre conduit literally crammed with cables carried data and telephony traffic between buildings. This was replaced with a single fibre optic cable.

To manage the school's IP Telephony service, dual Cisco Media Convergence Servers were installed in a failover configuration. The solution also includes a Cisco Unity Unified Communications server, with support for Microsoft Exchange 2000, which has provided the school with greater integration for its total communications requirements.

To deal with the enormous amount of traffic travelling over the network, the school installed Catalyst 4006 Switches, which are 'intelligent' meaning they can look into packets of data and prioritise them enabling critical traffic to have priority on a network.

**"WE HAVE 20 PRIORITISATION LEVELS. RIGHT NOW WE'RE USING FOUR OF THEM – TELEPHONY, DATA, STREAMING VIDEO AND E-MAIL – LEAVING 14 LEVELS FOR FUTURE SERVICES."**  
**PAUL RIDGWAY, BUSINESS MANAGER, CAMBERWELL GRAMMAR SCHOOL.**

To stream video across the network, Camberwell Grammar installed a Cisco IP/TV Solution. The Cisco IP/TV Control Server acts as the policy manager and ensures a balanced network video load without additional intervention from network administrators.



## THE RESULT

**WITH THEIR CISCO IP TELEPHONY SOLUTION, THE SCHOOL IS NOW EASILY ABLE TO MANAGE ITS OWN PHONE SYSTEM, SAVING TIME AND MONEY ON EXPENSIVE CALL-OUTS.**

"This is an incredible boon to efficiency within the school," said Paul Ridgway. "Everything is on the school's IP network and is managed through a single application on the Unity server, including the phones. Once a staff member has been issued with an IP handset, they can plug it in anywhere within the school's network, making it easy to change desks and locations or add new staff. Added to this, where we were previously limited to only 120 lines, we can now have thousands, and we don't need to pay for an engineer to set them up."

**"ONE OF THE GREAT THINGS ABOUT THE CISCO IP TEL SOLUTION IS THAT THERE ARE TWENTY LEVELS OF PRIORITISATION"**  
**PAUL RIDGWAY, BUSINESS MANAGER, CAMBERWELL GRAMMAR SCHOOL.**

Camberwell Grammar School has seen a 30 percent decrease in the quarterly phone bills, which enables them to divert the funds they would have once spent on phone calls to buying more much needed equipment for students and staff.

"With the IP Tel solution, we're able to pre-pay for block access at a fixed rate, instead of paying for calls individually," said Paul Ridgway. "We're also making savings on internal calls and on calls to our external campuses such as the out door activities education camp, which is an hour and 30 minutes drive from the school."

Another critical issue was the prioritisation of IP services. For example, at Camberwell Grammar School it's critical that voice packets are prioritised over video packets and video is prioritised over data.

So as we introduce new services, we can easily prioritise these services while ensuring that quality of service is always maintained.

Camberwell's high-speed network infrastructure has given students and teachers a newfound degree of flexibility in using video as an educational aid. With a 1Gb backbone to the network and one video feed taking only 1Mb of bandwidth, teachers are able to set assignments on particular videos without setting up a viewing session with all students in attendance. In free periods, before or after school and during lunchtime, a student needs only connect his notebook to the network, select the video from the school's DVD server and have it streamed directly, regardless of how many other students may be doing the same thing.

The school has set up a production suite including semi-professional MiniDV cameras and an editing suite, so students can produce their own videos and stream them from the DVD Server. School concerts, plays and presentation days are now filmed and the stream is available on the schools LAN.

Live streams also enable guest speakers, presenting in the school auditorium to be broadcast around the school ensuring all students can enjoy the speaker's presentation.

Camberwell Grammar school is even looking in to the possibility to leverage IPTV to link to another school and hold live debating sessions – both locally and internationally.

In order to streamline communications, the school also installed Microsoft Exchange Server 2000 running on a Compaq ProLiant server. By integrating this with Cisco Unity Unified Communications, staff and students have a single interface – Microsoft Outlook – for their e-mail, faxes and voice mail, making it easy to use.

By drawing on the skill sets of Cisco Systems and their Certified Partner's in call centres, online development, infrastructure and operating systems, Camberwell Grammar is now well positioned to exploit fully the benefits converged networking to enhance he

learning opportunities for students and reduce the administrative costs for their state-of-the-art network.

The new network has already encouraged a range of initiatives for students and staff that are underway. These include providing remote access via the Internet to the school network; using IP cameras to provide security surveillance across the converged network; and the advent of full video conferencing.

#### CONTACT US:

**IF YOU HAVE ANY QUESTIONS, OR WOULD LIKE TO DISCUSS HOW THE CISCO EDUCATION OFFERINGS CAN HELP YOUR SCHOOL, PLEASE FEEL FREE TO CONTACT US DIRECTLY ON:**

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