WIRELESS NETWORKING SUPPORTS A CONTEMPORARY EDUCATION WITH A STRONG ACADEMIC FOCUS

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– *Prasanna Premachandra*
  ICT Project Manager

UNINTERRUPTED WIRELESS INTERNET ACCESS FOR 1,200 STUDENTS

An Anglican boarding and day school in Melbourne, Australia, Melbourne Girls Grammar School has been educating girls for 100 years. It offers a contemporary education with a strong academic focus, where each girl can maximise her potential, achieve personal excellence, and develop the skills and confidence to take charge of her future in a socially responsible manner.

Through professional and committed staff, financially sound management and the support of the school community, MGGS aims to provide the best learning and teaching environment through continuous improvement.

Technology pervades all levels of education at MGGS. Teachers and students are continually exploring the possible applications of technology in the learning process.

Digital recordings of students' work, such as paintings in the Early Learning Centre and an online, password-protected parents' lounge regularly updated with news, facilitate open communication between MGGS and parents. All junior school classrooms are equipped with interactive whiteboards where students can construct and exhibit material.

From year five onwards, every student participates in the notebook program and is given a laptop that forms the basis of their education. The program gives students the opportunity to navigate, construct, publish, and collaborate with others on a worldwide

DETAILS

CUSTOMER: Melbourne Girls Grammar School

INDUSTRY: Education

LOCATION: Melbourne, Australla

CHALLENGES

- No wireless network access for two-thirds of students.
- Students losing network connections when going from class to class.
- Delayed lessons due to network connection problems.
- Poor wireless network performance impairing pervasive video use.

DEPLOYMENT SUMMARY

- Fortinet Wireless LAN Solution implemented across all classrooms and public spaces.
- Support for 1,200 student laptops.
- A main controller, backup controller, and 60 APs.

BENEFITS

- Students can move almost anywhere in the school without losing their wireless connections.
- Students in dense areas, such as the library and science and technology building, can all simultaneously log onto the network.
- Fewer APs are required, reducing cost.
- A zero handoff maintains high-quality VoIP connections.

basis. With specialist software it provides problem-solving opportunities, creates and displays artwork and animations, facilitates multimedia presentations and musical compositions, and lets students engage in the design process while increasing their digital fluency.

The MGGS ICT department takes an active role in the development of technical programs for the students by providing mentoring and technical support for staff, which helps foster innovation in the delivery of curriculum.

REMOVING THE ROADBLOCKS TO CURRICULUM DELIVERY

With technology playing an important role in MGGS's education program, it is important for the school to deliver this technology to teachers and students consistently.

The notebook program requires every teacher and student to have access to the Internet. In addition, students use Clickview, a program that lets them download large video files. This means Internet access with high throughput is essential.

The existing MGGS network did not deliver consistent wireless access. More than 700 of the 1,200 students had no access to the wireless network, which meant they still needed to carry and use connections to plug in to cable points under the desks.

Also, when students moved between classrooms they would lose their Internet connections and have to log back on, causing disruption to the start of lessons.

"The main problem for Melbourne Girls Grammar School was that all teachers and students did not have access to a proper wireless network," says Prasanna Premachandra, ICT project manager at MGGS. "We needed an uninterruptible wireless solution that would cover all 60 classrooms and all teachers and students."

WIRELESS NETWORK ACCESS FOR ALL

MGGS needed a solution to cater to the high volume of students requiring simultaneous wireless access that would support all devices in a fair manner.

After searching the market for a solution that would meet the school's needs, MGGS employed Wavelink Communications via one of Wavelink's systems integrator partners Alphawest to implement a Fortinet wireless LAN solution in the science and technology building for a three-month trial.

Fortinet's approach represents the industry's most complete solution from air to core, addressing the school's needs for over-the-air coverage, high-user density, and performance. Unlike most legacy systems which use micro-cells with alternating channels, Fortinet's wireless LAN solution uses a unique architecture that enables all access points (APs) to operate off a single, seamless channel, eliminating the need for complex coverage surveys and channel planning.

The solution enables school IT administrators, who may not be wireless experts, to easily compensate for coverage holes by simply adding additional APs. "The key differentiators of Fortinet's wireless LAN solution solution were the performance, ease of installation, and ease of management of wireless access points and controllers," says Premachandra.

After the exhaustive pilot program, Fortinet's wireless LAN solution was selected to provide comprehensive WLAN infrastructure across the school and Internet protocol (IP) voice over wireless LAN (VoWLAN) telephony in the school's Early Learning Centre.

"Fortinet's wireless LAN solution met Melbourne Girls Grammar School's Internet access requirements so well during the pilot phase that it is now implemented across all classrooms and public spaces that are used for education, such as the staff rooms and the school canteen," says Premachandra.

The network supports around 1,200 student laptops and includes a main controller, backup controller, and 60 APs.

CONSISTENT, FAIR, AND UNINTERRUPTED INTERNET ACCESS

The single biggest benefit for MGGS is that Fortinet's wireless LAN solution ensures uninterrupted wireless Internet access on a consistent basis.

"Students no longer need to carry cables to plug in to the network and can move pretty much anywhere in the school without losing their Internet connections," says Premachandra.

Fortinet also delivers true airtime fairness, meaning that each student has equal access to the wireless network, irrespective of whether they are using older PCs. Older PC's that are slower will not drag down the entire network. This approach also ensures that users of older PCs do not drag down performance of the entire wireless network, which commonly occurs in legacy wireless LANs.

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NO MORE CHANNEL PLANNING TO ADD APS

The ease of management for the ICT department is another key benefit. Fortinet's wireless LAN solution looks like a single cell for the mobile device, so the ICT department does not have to worry about channel planning when adding or moving APs. A single-channel solution means mobile devices never see handoffs or multiple APs, and a zero handoff maintains high-quality VoIP connections and increased reliability for education-critical applications.

This approach also removes the problem of co-channel interference common in legacy

micro-cell systems, so that Fortinet APs are able to operate at full power, typically reducing the number of APs required by around 30 percent, reducing equipment costs and infrastructure requirements.

For MGGS this unique approach means Fortinet's Wireless LAN Solution delivers simultaneous wireless access to high numbers of users in areas such as the science and technology building and the library.

TWO FORTINET APs TAKE THE PLACE OF SEVEN

With the APs operating at full power and supporting a larger number of users, the existing micro-cell system's seven APs in the library were replaced with just two of Fortinet's APs. Fewer APs mean reduced costs and maintenance of equipment.

EASY COVERAGE EXPANSION FOR NEW FACILITIES

MGGS is planning to build additional facilities, including a new Early Learning Centre in 2011, which means that coverage needs to be increased to accommodate the new facilities. Fortinet's single-channel solution means that channel replanning will not be required, so coverage holes created by the new buildings can be seamlessly plugged by simply adding more APs. Premachandra concludes, "Fortinet's Wireless LAN Solution was delivered to Melbourne Girls Grammar in a professional, helpful, and problem-free manner, on time and on budget."

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