Joseph Chamberlain
Sixth Form College

Industry
Further Education

Objective
Deploy a new wired and wireless networking infrastructure to increase performance, capacity and scalability. Support the existing virtualised server environment and sustain growth.

Approach
Opened discussions with several prospective vendors and visited their technical centres to verify the proposed designs.

IT outcomes
- Provides a reliable, high-capacity wired and wireless network infrastructure, increasing performance ten-fold.
- Delivers the bandwidth, scale and connectivity to support network-intensive applications, satisfying the college's current and future needs.
- Offers an open standards-based secure architecture, creating an agile and easily managed infrastructure.

“ADA Networks understood our needs well and proposed a robust network design compatible with our virtualised server environment and meeting our increasing demand for wireless access. ADA Networks provided a professional approach, good pre-sales engagement and sound consultancy and implementation services. Discussing both commercial and technical aspects of the options was great.”
- Purdip Bahra, IT Manager, Joseph Chamberlain Sixth Form College

Business outcomes
- Improves the teaching and learning environment, reinforcing the college’s prestigious reputation and academic credentials.
- Support new applications and other technologies, satisfying student and staff expectations.
- Lowers total cost of ownership significantly, offering a sound return on investment.

Leading Sixth Form College opts for ADA Networks

Joseph Chamberlain Sixth Form College, a leading further education institution, deploys a wired HP Networking and wireless Meru Networks solution from ADA Networks to replace its outdated Cisco and Xirrus networks. The new network boosts performance ten-fold, delivers the capacity and scale for the foreseeable future, simplifies network management and lowers total cost of ownership whilst enhancing the teaching and learning environment.

“ADA Networks had a genuine passion about the success of the project. One rarely sees this sort of added value with suppliers these days. The added value also extended to complete flexibility whilst ensuring other non-related network components functioned correctly after network installation.”
- Purdip Bahra
Challenge

Embracing IT

Like all good academic institutions, Joseph Chamberlain Sixth Form College (JCC) has embraced IT for many years as it endeavours to create a high-quality learning environment and maintain a reputation for academic excellence. JCC continued to apply these principals while seeking a new LAN and WLAN infrastructure solution.

Located in Birmingham, independently governed JCC offers numerous courses and vocational programmes for students aged 16-19. It delivers full-time and part-time courses leading to Advanced Level, GCSE, and BTEC National Diploma qualifications. Vocational programmes include art and design, early years, nursery nursing, performance arts and teaching assistant. Over 1,600 full-time and approximately 870 part-time students study there.

JCC is one of 20 UK colleges and universities that have received the Queen’s Anniversary Prize for Further Education. After receiving the award, JCC opened a new £40 million campus in 2008. For the last academic year JCC boasts an A-Level pass rate of 97 per cent, making it one of the best-performing sixth colleges in the UK.

Report highlights strengths

A recent Ofsted report attributed the college with the following strengths: “It provides an inclusive and harmonious environment for students in which they feel very secure and make very good use of the excellent learning spaces. The curriculum is responsive and well matched to the needs of the local community. Teaching and learning are consistently good in health, social and child care, visual arts and media, and humanities and social sciences. The behaviour of students is exemplary and senior leaders demonstrate a strong commitment to improving the quality of teaching, learning, assessment and outcomes for students.”

“This report reinforced our success with an important remit; to deliver student services that satisfy the needs of the local community,” says Purdip Bahra.

Performance, capacity and scalability issues

“Our new campus employed a Cisco wired network with 1Gbps backbone and 100Mbps to the desktop along with a Xirrus wireless network to serve our 90 classrooms, 6 IT rooms, open learning centre and administration offices,” explains Bahra. “As we grew and with students and staff becoming increasingly IT dependent, we knew we required a network refresh. We had to avoid any performance and capacity issues whilst introducing sufficient scalability to support further growth and deliver an effective curriculum.”

Like all further education institutions, JCC is connected to the Joint Academic NETwork (JANET), a private, government-funded organisation that provides computer network and related collaborative services to UK research and academic institutions. A Metropolitan Area Network (MAN) connects JCC to JANET. During recent years JCC has adopted a server virtualisation strategy to support expansion, deployed numerous wireless access devices such as laptops and tablets and introduced several new applications to enhance the students learning experience.

“With many developments taking place, our new wired and wireless network infrastructure had to readily accommodate any planned changes without detrimentally affecting speed and capacity whilst supporting JANET.
connectivity,” continues Bahra. “However, while were making plans to refresh the network, some users were already commenting about a sluggish login process at the start of the day, wireless connectivity issues and slow application performance. Moreover, we were becoming increasingly concerned about the ownership and support costs of the existing network and our IT team frequently expressed worries about network manageability.”

JCC initially approached several vendors and eventually decided to accept proposals from their incumbent Cisco partner, and JANET-approved supplier ADA Networks. “Whilst working on design options with ADA Networks, we discussed current challenges and established various options, taking into account cost and functionality. During the consultancy process, ADA demonstrated each of the technologies they were proposing to verify the functionality.”

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**Solution**

**Powerful core and scalable edge switching**

The HP Networking solution comprises two 5900AF series core switches and thirty 2920 series stackable edge switches. The new dual-10GbE backbone delivers 1GbE to all edge ports whilst ensuring sufficient capacity is available for future expansion.

The HP 59000AF series switch is a family of high-density, ultra-low-latency switches that forms part of the HP FlexNetwork architecture’s FlexFabric solution and is ideally suited for the data centre core in medium-sized establishments such as JCC. The cost-effective HP 2920 switch offers the college a scalable solution for the new high-performance network.

**Education-grade wireless network**

The Meru wireless network solution comprises a pair of MC3200 series wireless controllers deployed in high-availability mode and 100 Meru AP822i dual-radio 802.11ac access points. The MC3200 wireless controllers can be scaled to support a further 100 access points if future expansion demands this. Meru Network Manager is also installed and provides JCC with network-wide monitoring, end-to-end visibility, and powerful control of the wireless deployment.

**At-a-Glance**
Technology Overview

Hardware
- 2 x HP 5900AF Switches
- 30 x HP 2920 Switches
- 2 x Meru MC3200 Controllers
- 1 x Meru SA2000 Virtual Appliance
- 100 x Meru AP822i Access Points

Software
- Meru Network Manager

Design Features
- HP IRF 40Gb backbone between core switches
- Dual-10Gb backbone to each edge switch stack
- Dual-10Gb backbone to server room TOR switches
- 1Gb edge ports throughout
- Pervasive wireless coverage
- Dual wireless controllers for redundancy

Professional Services
- Pre-sales design and technical demonstration
- Off-site pre-configuration and testing
- On-site commissioning and testing
- New cable runs for access points
- Access point installation
- Project management
- Post installation support

“Our network was up and running again within half-an-hour, minimising downtime. This was the best transition we’ve ever conducted. ADA Networks’ project management was excellent. It ensured a smooth switchover to the new solution, minimised disruption to other technologies such as the phone system and adopted a pragmatic PRINCE2 approach to cover all potential issues. We expected many more problems but ADA Networks made the transition seamless. We’ve seen a fair few IT companies since opening the new campus in 2008 but ADA Networks are the best by a mile, truly five-star players.” Purdip Bahra, IT Manager, Joseph Chamberlain Sixth Form College