CAE
TECHNOLOGY ON POINT

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WREXHAM COUNTY BOROUGH

GIVING TEACHERS & STUDENTS A GOLD STAR NETWORK

"The CAE Labs automation app is working well saving us a lot of time building the networks, and once on site, the Meraki builds are very effective!"
- Lead Technical AnalystWrexham County Borough Council

Providing rich digital learning environments is an educational priority for Wrexham County Borough Council (WCBC), and relies on safe, secure, and reliable networks to empower teachers and support effective learning across 70 schools.

As part of a £50 million funding programme by the Welsh government to help transform education technology and support modern curriculum teaching across Wales, WCBC invested in c.1,300 devices to upgrade their schools' network infrastructure and enable Wi-Fi 6. While other councils replaced equipment on a like for like basis, WCBC took the opportunity to look to the future, with a complete redesign to give their teachers and students a gold star standard.

And with Covid leaving them 12 months behind schedule, they were ready to learn how to speed up deployments to play catchup.

The Challenge

When WCBC needed to upgrade the borough's 70 primary and secondary school networks, their aim was to ensure that teachers and students had easy access to relevant data over a reliable wireless service they could be confident in, to provide teaching and learning seamlessly. The existing network was complex and convoluted, having grown over the years with no standardisation, and IT teams had little visibility or control.

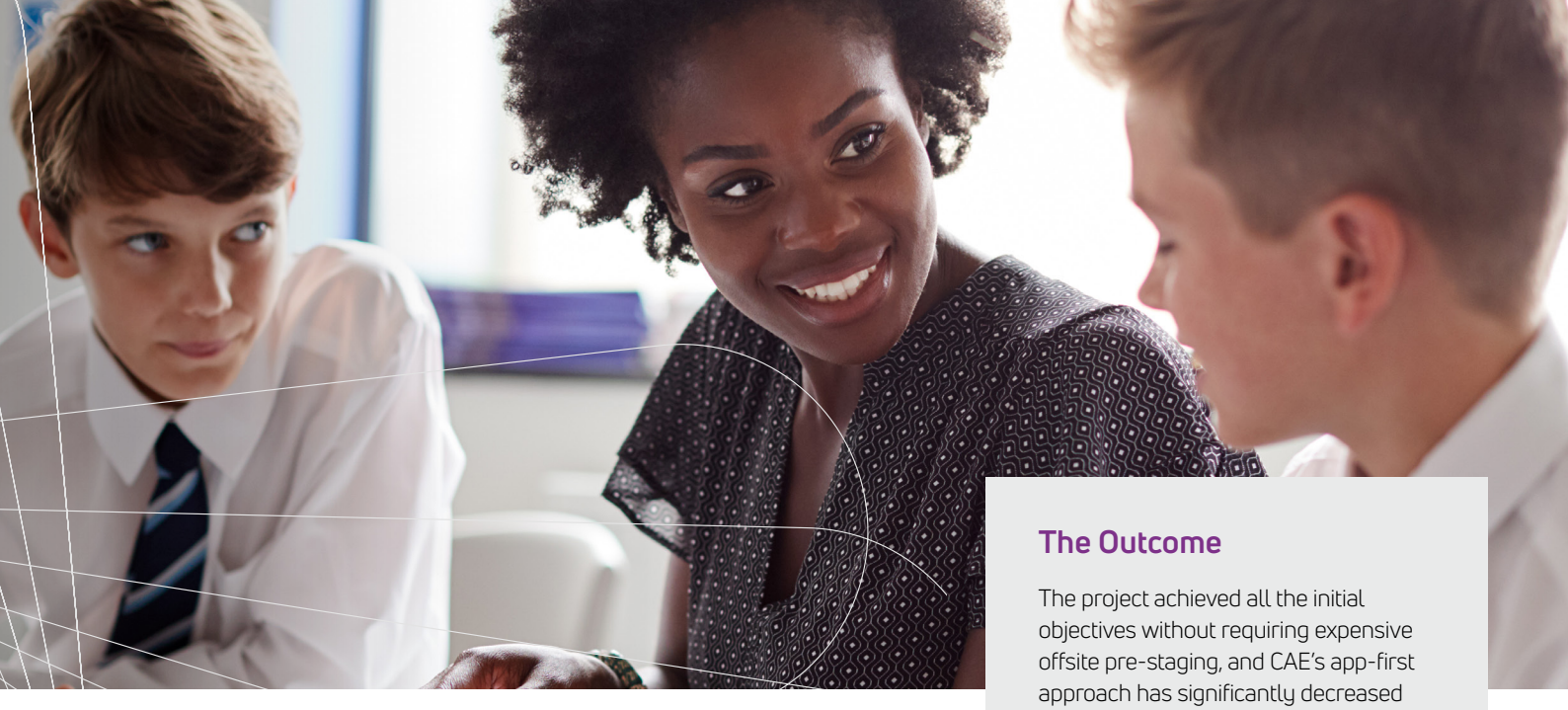
The Welsh government allocated £50 million to support schools across 22 local authorities in adopting and embedding digital learning in the classroom. As one of the 11 local authorities assisted by CAE, WCBC wanted to maximise this opportunity by starting afresh with c.1,300 new networking devices and a complete redesign, which would support improved, security enhanced wireless with a consistent, standardised configuration and gold star design at all sites.

Public, guest, and BYOD networks needed to allow every teacher, student, and visitor to the school to use at least one device simultaneously, and to roam across all areas of the school site and between Wrexham schools, staying connected to core services and the local government cloud.

The digital infrastructure also needed to be ready to evolve in line with schools' needs, and WCBC wanted to look at incorporating a new IP addressing scheme to allow for future additional capacity.

Implementing this new, fast core network across all schools was a good opportunity to help WCBC streamline both technical and business processes around the adoption of new technology.

They were already 12 months behind schedule due to the Covid pandemic, making improved time to delivery and time to value the biggest challenge.



CAE's approach – doing our homework

By concentrating effort upfront on the discovery and design elements of the project, CAE were able to make the delivery element easier and smoother, with minimal assumptions and no nasty surprises.

Working in close collaboration with the project managers, WCBC were open about possible skills gaps and relevant engineering inexperience allowing CAE to factor in these requirements when defining and designing a plan that would confidently deliver their outcomes.

In this instance, CAE took an app-first approach utilising its innovative and proven CAE Labs automation solutions toa automate the project delivery, making adoption as quick and easy as possible. This was streamlined further by integrating the process with their existing IT investment in TOPdesk for Asset Management and Configuration Management Board (CMDB) services, resulting in even more time being saved.

Right first time, rapid, zero touch provision and deployment

CAE uses an automation and orchestration app designed for the rapid provisioning of new sites, saving time and cost while being highly scalable, repeatable, and consistent. The app is capable of zero touch provisioning hundreds of schools in minutes and configuring thousands of networking devices across two Cisco enterprise platforms at the same time (Cisco Catalyst Centre and Cisco Meraki Dashboard), with one non-technical drag and drop action of a basic spreadsheet.

Switches and Wireless Access Points were fully configured in a uniform and standardised way with zero touch, avoiding human errors. Thanks to the simplified, fully automated, and orchestrated process, equipment could be simply patched in on school sites without relying on the technical knowledge of highly skilled engineers - no manual configuration or dashboard visits were required.

After testing the delivery service at five schools in the pilot phase, CAE were able to hand over a consistent, streamlined operating model for WCBC to deploy, which was easy for them to scale and repeat for the remaining 65 schools.

The Outcome

The project achieved all the initial objectives without requiring expensive offsite pre-staging, and CAE's app-first approach has significantly decreased the configuration, build and deployment times for the new infrastructure, allowing more schools to be completed in a shorter timeframe.

Rapid provisioning of a school is possible in under 60 seconds, and instead of a large comprehensive school taking almost a week, it takes just a few hours.

Meraki Dashboard and its automation app now provide single pane of glass access to the entire school network, allowing centralised visibility, control and management of the Cisco and Meraki products going into each school.

As the network is programmatically configured rather than human touch, there is no configuration drift or inconsistencies. Instead, every site is standardised around gold star configuration which makes support and fixes much easier and helps WCBC deliver a better service.

A new IP addressing scheme allows pupils and teachers to associate multiple devices with the network without capacity issues, and staff, students and guests can roam easily between school sites maintaining connectivity.