

How an IT network modernisation project digitally transformed the student experience at Dumfries and Galloway College

Pre-2020, tech adoption in further education was fragmented and cautious. Learning centred around lecture halls and libraries, and tech had a secondary role. Two years on, the world is a very different place, with tech at the forefront of modern education. Dumfries and Galloway College (DGC) was already ahead of the curve. At the first sign of change they engaged Switchshop to start a journey that would revolutionise their rural campuses with best-in-class technology.



Dumfries and Galloway College (DGC) shares a site with the University of the West of Scotland (UWS), the University of Glasgow, the Open University and Scotland's Rural College. It also boasts Scotland's first fully integrated FE/HE library and resource centre.

With the onslaught of the pandemic, existing, well-planned roadmaps for student and college success were steamrolled and confronted with online-focused learning. DGC had to compete with established online institutes and better-funded peers in a race to fast-track digital transformation.

As most colleges scrambled to introduce online and remote teaching, legacy networks were stuck in 2019.



Zoom, Teams and Meets were embraced as stopgaps but were merely conduits to deliver an online experience. Crucially, the way that subjects and training were taught had not evolved.

The Problem

This problem was top of mind for Jill Galloway, the Vice Principal of Dumfries and Galloway College: *'While we shifted our entire curriculum online and digitised most back-office processes, we knew this was digitisation rather than a digital transformation. As one of the main employers and providers of learning and training across the South of Scotland with programmes ranging from senior phase school partnerships to higher education, how could our two rural campuses and our partnership with UWS offer a truly collaborative learning experience? The challenge was to find a tech partner who understood not only the challenges our campuses faced daily but how we could become digitally resilient in a post-covid world.'*

Could Switchshop and Aruba help two rural campuses become fully remote?

The digital team at Dumfries and Galloway College, headed by ICT Manager Calum Rodgers, believed so:

'We knew we needed a fully resilient, automated and flexible system that would not only meet the current requirements but would also prepare the College for rapid and unpredicted growth.'

The College had already stayed one step ahead by revamping its common spaces and rolling out an agile and flexible learning environment where groups of students could collaborate in a more simple and secure way.

Desks were constrictive – they wanted to rip them out and create open spaces

DGC's digital transformation needed a network and system that allowed anyone with access to the campuses to be able to hit the ground running.

With two rural locations and shared teaching and learning modules with University of West Scotland (UWS), the College was determined to become a fully collaborative space that could be fully remote, inclusive and secure. That way the student experience could evolve, and their rural hub could become a superior learning environment.

"Ripping out desks wasn't our only challenge, we also needed to break down metaphorical barriers. A flexible and agile shared space doesn't just encourage collaboration, it breaks down barriers to education and caters for students at all educational levels."

Jill Galloway, Vice Principal

But breaking these barriers needed a different kind of wrecking ball

The importance for students to be able to bring in and work from their devices had to be considered. With BYOD, the classroom is instantly extended, and the collaborative learning process can happen because of real-time engagement.

BYOD also reduces costs. While DGC continues to provide chromebooks for study, it expects that fewer of these will be needed as more students switch to personal devices.

However, facilitating BYOD was not without its own pain points, with security being top of mind.

For higher education IT departments to remain resilient, DGC knew that they needed to secure the expanding number of endpoints on and off campus.

Privacy and compliance needed to be watertight - and deal with the challenges of guest user access.

Though Darren, the ICT Infrastructure Officer, knew what was required, he and Calum were worried that instead of getting an all-encompassing tech design that could future-proof their digital needs, they could be handed a 'solution of bits.'

'We choose Switchshop because they brought surprising 'analogue' technology to the table first – their ears. They listened intently to all our fears around BYOD and our requirements, and their proven college sector experience helped us keep one step ahead to become a leader in collaborative learning.'

Darren Morton (ICT Infrastructure Officer)

Solution

Switchshop and Aruba showed a clear way ahead

HPE Aruba and Platinum Partner Switchshop collaborated closely with the DGC ICT leadership team to modernise the legacy network and transform students' educational experience. With the College already evolving in creating shared spaces they needed a network which adapts quickly to changing needs and caters for the future.

Switchshop has not only implemented ClearPass across the network, but also replaced the College's legacy network with Aruba switching and expanded their Aruba Wi-Fi across the campus.

ClearPass was able to navigate BYOD and the IoT threat landscape to secure the growing number of connected devices students bring to campus.



The core and edge switches replacement and expansion of Wi-Fi delivers unified templated rollouts at the edge, and simplified connectivity across both College buildings.

However, to police and configure every device a student brings in would have been an unrealistic undertaking for Calum's ICT department, so it was clear that they needed visibility and automation from the outset.

Replacing the existing legacy network with Aruba core and edge switches, the College has significantly reduced IT overhead in comparison with the previous legacy solution.

The solution was crafted by the expert tech team at Switchshop and powered by Aruba innovative network technology. DGC is now recognised as an edge-to-cloud Aruba house.

Visibility, Automation and Predetermined Access Control

With pre-approval granted, students could only be given access to the applications they were aligned to, and staff and students could only access a learning environment or classroom they were assigned to. This means that DGC avoids scenarios where students and staff could accidentally connect to devices in nearby classrooms or to the unsecured devices of classmates.

Secure, Automated Visitor Access saves and secures

Because of the College's shared services with UWS, Aruba ClearPass was invaluable. It can preload how much time and bandwidth a guest can use – excellent for facilitating visiting lecturers. Visitors can join the College network without the need for IT to manage permissions and connect or disconnect them, so time and budgets are saved.

The explosion of IoT devices requires superior endpoint protection

With the IoT threat landscape, all devices need to have the latest patches and firmware updates.

Aruba ClearPass addresses this issue by checking whether devices have the most recent anti-virus and anti-spyware patches and hotfixes before they connect to the network.

Whenever it finds devices that aren't up to standard, it informs the College's ICT department and gives them immediate steps to take.

'Thanks to Aruba ClearPass our network was extended to enable high capacity and equitable access while providing secure access to PII and other confidential data, bringing a campus-like experience that went beyond our rural setting.'

Calum Rodgers, ICT Manager

When it comes to sustainability, DGC was already one step ahead

Even before their digital transformation, DGC had already developed one of Scotland's most sustainable learning environments.

In 2021 alone, the College won four sustainability awards, including the Green Gown Award in the Benefiting Society category.

The College has been recognised as a Campus of the Future and has also been voted Outstanding Project at the Scottish Green Energy Awards.

Last year the College launched the Green Energy Hub, an annex to the College entirely resourced and powered by renewable energy sources, including two different types of solar panels, a wind turbine, ground source heat pump, TESLA battery storage system and rainwater harvesting.

How does the digital transformation enhance DGC's green credentials?

The College's transformation and focus on sustainability extends to the underlying infrastructure and its impact on the student experience.

By setting the gold standard as a Campus of the Future, enabling students to learn from anywhere, and better integrating with UWS and South of Scotland Enterprise, DGC is now at the forefront of technology, sustainability and learning outcomes.



'Dumfries and Galloway College has sought to create a fully secure, sharing, learning and sustainable environment that has been helped immeasurably by the technology transformation from Switchshop using Aruba Clear Pass.'

In fact, our digital transformation has gone beyond any tech design and has turned into an education transformation.

Our college, our students, our staff, our planet and even our place amongst our peers will benefit from this very important step ahead.'

Jill Galloway, Vice Principal



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