Improving Network Connectivity for Arriva

From local buses and coaches to national trains, trams, light rail and water buses, Arriva is one of the leading providers of passenger transport in Europe, employing over 53,000 people and delivering 2 billion passenger journeys a year across 14 European countries.

The company is also one of the largest transport operators in the UK with over 5,000 buses serving passengers across England and Wales.

The Challenge

The majority of Arriva's UK business locations are connected by an expansive network based on MPLS technology, comprised of thousands of devices. This resulted in insufficient internet bandwidth for the wide range of applications being deployed across Arriva sites.

Paul Sangha, Head of Infrastructure Delivery, who is responsible for defining infrastructure standards, managing deployment and working with third party suppliers, says: *"The problems became clear when I visited our Brixton bus depot. It took up to five minutes for employee computers to boot up and ten minutes to send a document to the printer. Sites were*

still using Windows 7, so teams were resorting to workarounds."

"Connectivity was via an MPLS network with access to the internet routed through our Doxford site in the North East of England. Our network suffered from internet bandwidth limitations and Doxford was feeling the strain. Our ongoing evolution from onsite to third-party hosted applications exacerbated the problem."

Paul and his team wanted to take a fresh approach to network design. They knew that SD-WAN would reduce connectivity costs, and at the same time enable encrypted cross-site connectivity for accessing applications and information contained in Arriva's data centres.

The team developed a business case highlighting the impact of inefficient network performance on Arriva's business and presented various options for resolving this via a complete network overhaul.

Why Cisco SD-WAN powered by Meraki?

Paul was already familiar with Cisco and said he wanted to work with a well-known partner with a significant-sized business rather than implement products that might disappear in a relatively young market. The team worked with multiple providers, looking at what the market had to offer in terms of SD-WAN solutions as well as taking advice from industry sources.

Paul explains the decision-making process as follows: *"We knew SD-WAN was the way forward, and Meraki offered the best solution for our needs. We were also able to work closely with Meraki to explore exactly what we needed."*

Breaking Down the Barriers to Change

Understandably, people can sometimes be reluctant to major technology change and the decision led to resistance within the IT team, with some employees concerned about disrupting a fragile network and preferring to retain the existing network environment.

To help bring all the IT teams on board, the team had several calls with Cisco and spoke with another Meraki customer that had deployed at scale. Paul says that, *"this was a game changer in terms of giving colleagues confidence that the solution would scale to our needs."*

In order to manage a smooth transition, the team audited six sites to verify their networking needs, and at the request of the business, conducted a pilot at Arriva's Brixton depot, which was a resounding success. This led to business leadership support and from there, the IT team started rolling out the technology.

"The transition was a big ask – but I knew it would be worth it."

The Deployment

So far, Arriva has deployed around a thousand Meraki devices with two SD-WAN connections per site. It is also upgrading three large administration centres and two new data centres. The scale of the programme and the geographic distribution of the sites has been challenging but the Meraki equipment has been easy to deploy.

Having worked on similar large-scale rollouts in other outsourcing companies, for Paul the key to
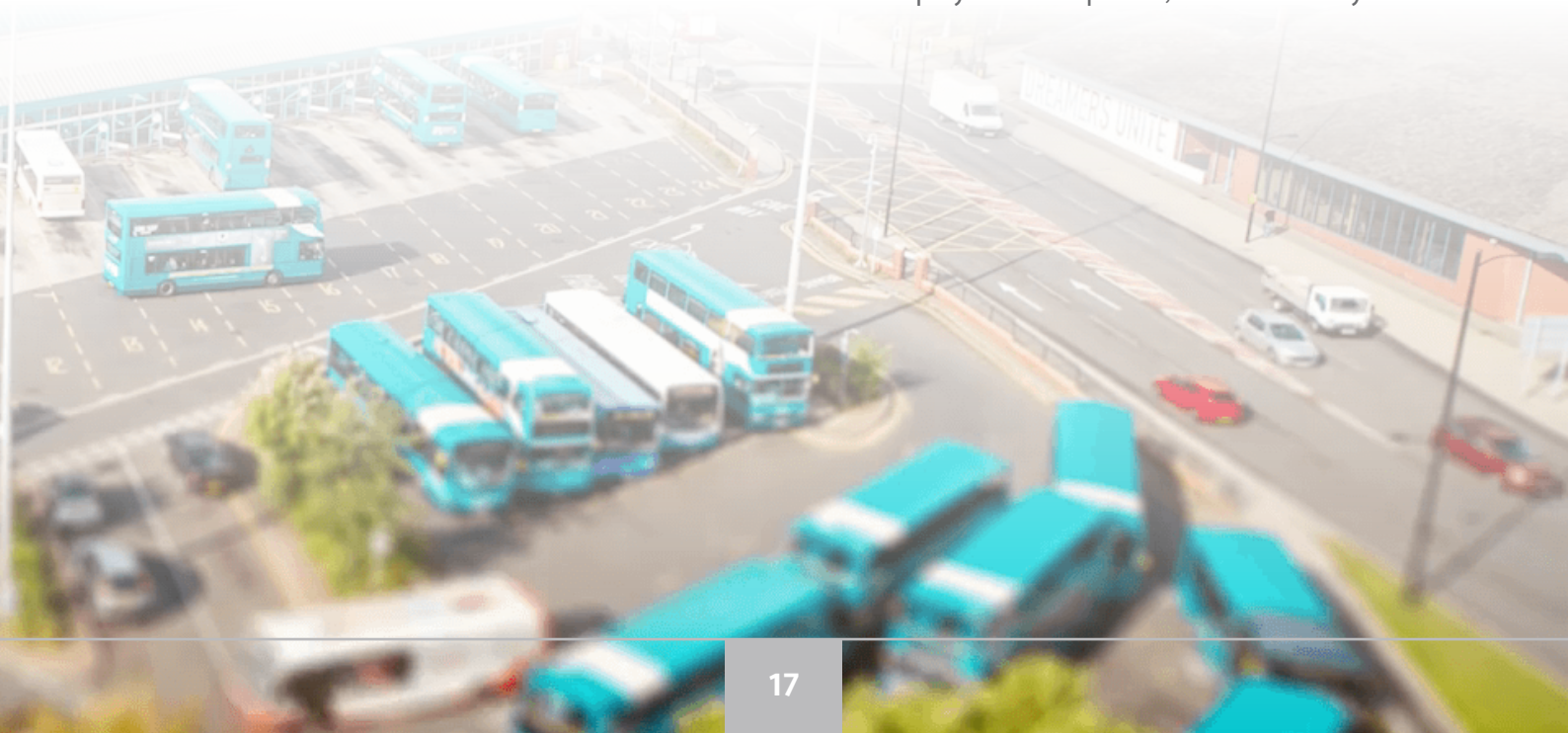
> "We knew SD-WAN was the way forward, and Meraki offered the best solution for our needs. We were also able to work closely with Meraki to explore exactly what we needed."
>
> **Paul Sangha, Head of Infrastructure Delivery**

success lies in understanding the importance of 'process within projects': *"There is a large amount of repetition for each installation, so we meticulously maintain a detailed 61-task run book, which we continue optimising to ensure mistakes aren't repeated. 48 sites in, we're seeing very few amendments."*

The Benefits

Cisco SD-WAN powered by Meraki now underpins all of Arriva's IT. It is completely changing how people work, both through its simplicity and through the plug-and-play nature of devices. It also supports ongoing digitalisation for the company's front-line teams in line with its infrastructure strategy. Internet connectivity and improved access to cloud services are simplifying migration to Office365, SharePoint, box.com and other newer technologies. They also enable centralised management of hundreds of printers, as well as staff migration to Windows 10 with SCCM (System Center Configuration Manager). Video calling and file sharing across sites is now flawless, and Meraki has reduced complexity for all management through a single portal, eliminating the need to remember multiple passwords across a range of legacy technologies.

Paul expands on the benefits of the Meraki deployment, *"With the*

previous network so poor in many locations, the implementation team is receiving a great response as we migrate network, PCs and printers. Knowing that we're changing the working lives of so many colleagues is incredibly rewarding, and I can't wait to see it fully rolled out."

Network visibility is another key benefit, with the Meraki dashboard used more than any other feature. Project managers, architects and engineers can now drill down to component level, remotely monitoring any changes, identifying and fixing any issues anywhere on the network. The result is a simplified working environment that is easier to manage, improves efficiency and reduces costs.

"We have documented everything at every site and have access to a significant amount of historical reporting with the Meraki dashboard. The ability to track Wi-Fi access point location through the portal allows us to know exactly where network devices are located, which is important in some of the huge garages we need to support."

Lessons Learned

For Paul, it was also important to understand the concerns of engineers who have used specific technology for many years. For them, SD-WAN was a significant technology shift, so getting IT teams on board was just as important as obtaining business sponsorship.

Finding the right vendor was also key: engagement was particularly critical as they looked at some of our small travel shops. Meraki provided test equipment to migrate the initial site. Paul encourages

organisations going through a similar project to try out the technology in a real environment. the Arriva Brixton test site provided an invaluable template to work from.

If Paul could give any advice for other organisations considering a similar transformation, it would be meticulous planning. *"An implementation of this scale has many moving parts but by sticking to the process – and with continual service improvement – the installation sequence can be completed efficiently."*

Additionally, talking to other companies that have embarked on a similar journey is valuable. This helped Arriva's team to really understand how SD-WAN would make things better. And speaking in business terms to the business – no jargon, acronyms or sales talk. Paul continues, *"SD-WAN is a tough one to explain, so expect some initial resistance. We make it very simple by telling staff: 'You have an issue – this is how we will take the company forward. And transform people's working lives."*

"Both education and publicity have helped everyone at Arriva understand the changes. The Meraki team have been great in this respect, working in close partnership with us, helping us sell the product across the business, getting people on board and offering guidance and education. As a result, most depots are now really keen to get started."

cisco Meraki