



GLOBAL NETWORK MODERNIZATION WITH SD-WAN

HOW LEADING GLOBAL CONSULTING AND ENGINEERING FIRM, ARUP, PARTNERED WITH TENEIO AND ARUBA EDGECONNECT TO TRANSFORM ITS NETWORK, ENABLE CLOUD-FIRST OPERATIONS, AND REDUCE COMPLEXITY AND COSTS ACROSS ITS GLOBAL INFRASTRUCTURE.

AT A GLANCE

- **CHALLENGE:** Arup's MPLS and DIA-based network had become complex, costly, and inflexible - driving the need for a more scalable, simplified, and cloud-ready solution.
- **SOLUTION:** Arup chose Aruba EdgeConnect SD-WAN for its cost-effectiveness, cloud-native design, and ease of use, partnering with Teneo for their deep technical expertise, flexible co-management model, and customer-focused approach.
- **RESULTS:** 306% more bandwidth, 50% lower cloud egress costs, 1500% efficiency gain, reduced energy use, and full ROI in 14 months - enabling a secure, scalable, future-ready network.



ABOUT THE COMPANY

Arup is a global consulting and engineering firm that plans, designs, and delivers solutions across diverse sectors, including transport, energy, water, healthcare, sport, and education. With over 100 offices worldwide and approximately 19,000 employees, the company is dedicated to strengthening communities, building resilience, and driving climate action through its work with clients.

Lee Cave, Global Head of Infrastructure and Technical Operations, has worked at Arup for over 26 years, overseeing core technologies and services critical to daily operations. Leading a global team of 65, he ensures a 24/7 follow-the-sun service across Networks, Compute, Storage, Public and Private Cloud, Collaboration, and Endpoint Management across Arup's workplaces. His responsibilities also include driving innovation and implementing next-generation technologies to enhance efficiency and support the company's sustainability goals.

PREVIOUS NETWORK MODEL & CHALLENGES

Historically, Arup relied on private WAN (Wide Area Network) links using MPLS (Multiprotocol Label Switching) and Cisco-based routing and switching devices, with separate firewall and WAN acceleration solutions for security and performance. The company then transitioned to a fully managed multipath Ethernet service to improve network efficiency and support cloud migration, combining MPLS and Direct Internet Access (DIA). This shift increased bandwidth and enabled local site breakouts, but several challenges remained:

- **Operational Complexity:** Managing policy-based routing requirements and firewall policies across 100+ sites, including virtual cloud edges, remained a significant burden to the IT team.
- **Rigid Traffic Routing:** Active-passive configurations wasted bandwidth, and the absence of dynamic routing limited efficiency.
- **Limited Visibility:** Measuring bandwidth consumption accurately and identifying potential saturation was challenging, requiring costly tools or custom-built software.
- **Global Connectivity Challenges:** Maintaining reliable infrastructure in typically challenging network locations such as Dubai, Bogota, China, Mauritius, and parts of Africa was complex due to varying service providers and infrastructure inconsistencies.
- **Slow Site Deployments:** MPLS provisioning could take months, frustrating the business with expectations of faster network rollouts.

As the company's Digital Technology Strategy progressed, as expected, cloud adoption increased, and DIA reliance grew. As such, Arup recognized the need for a more agile, cost-effective, and scalable solution. The high costs, operational complexity, and limited flexibility of the existing setup made Software-Defined Wide Area Network (SD-WAN) the next logical step. By adopting SD-WAN, Arup aimed to eliminate MPLS dependencies, simplify network management, and seamlessly integrate security and performance enhancements.

Additionally, Arup's long-term cloud-first, data-driven transformation strategy required a network that seamlessly supports public cloud services like Microsoft Azure and Amazon Web Services (AWS) while ensuring high security and performance. SD-WAN was also key to enabling self-service capabilities for engineers and enhancing agility across the organization.

"SD-WAN had reached a level of maturity that gave us confidence in its stability. It not only addressed our immediate network challenges but also aligned with our long-term goal of integrating network flexibility with enhanced security, supporting our focus on Zero Trust Network Access and transition to a broader SASE model."

— Lee Cave, Global Head of Infrastructure and Technical Operations, Arup

WHY ARUP CHOSE TENEO AND ARUBA EDGECONNECT SD-WAN

During its SD-WAN evaluation, Arup assessed several solutions as part of an RFP (Request for Proposal) exercise before selecting Aruba EdgeConnect SD-WAN, which stood out for four key reasons:

- **Alignment with Business Needs:** Aruba delivered precisely what Arup needed - a single solution at a competitive price point, tailored to their specific requirements.
- **Ease of Use:** The intuitive Aruba interface made it easy for Arup's engineers, many of whom were hardened Cisco engineers, to quickly adopt and operate the platform without steep learning curves.
- **Cloud-first Architecture:** Easy and flexible integration with public clouds combined with Boost (WAN Optimization) capabilities eliminated the need for costly Azure ExpressRoute or AWS Direct Connect.
- **Boost Feature for WAN Acceleration Replacement:** Aruba's Boost capability provided an efficient alternative to aging WAN acceleration devices, eliminating the need for costly replacements while improving traffic management and file read/write performance.

Choosing Teneo as a partner was equally strategic, with Teneo standing out for three key reasons:

- **Specialized Expertise in Aruba EdgeConnect SD-WAN:** Teneo's deep technical knowledge and long-term experience with Aruba EdgeConnect SD-WAN set them apart from generalist providers. This ensured Arup worked with a dedicated technology expert rather than a broad, unfocused partner, allowing for a smoother and more efficient deployment.
- **Flexible Co-Management Model:** Unlike previous fully managed telco services, where Arup's engineers had no direct access to edge devices or logs, Teneo's co-managed approach provides the best of both worlds. Teneo's team proactively monitors and manages the network, while Arup retains full visibility and control over its infrastructure. This allows Arup's engineers to access devices when needed and diagnose issues independently or in collaboration with Teneo.
- **'Boutique-style' Customer-Focused Approach:** Teneo's smaller, highly specialized team delivered a personalized and high-touch service that larger providers could not match. Rather than being treated as just another account, Arup received dedicated support, with Teneo acting as an extension of their IT team. The ability to build strong working relationships with technical experts ensured consistency, responsiveness, and a deeper understanding of Arup's network environment.

“Teneo’s project execution was outstanding. Their pragmatic, organized approach kept everything on track, ensuring smooth execution and strong team alignment. They became an extension of our team, offering the flexibility we needed in a co-managed service. Unlike previous providers, where service was dictated by spend and rigid tiers, Teneo valued our business and gave direct access to experts who truly knew our environment.”

— Lee Cave, Global Head of Infrastructure and Technical Operations, Arup

SEAMLESS IMPLEMENTATION & DEPLOYMENT

The implementation of Aruba EdgeConnect SD-WAN was carefully structured, with Teneo's project and architecture teams working closely with Arup's engineering, architecture, and operations teams. A well-organized project management approach ensured every stage remained on track. From high-level design to detailed implementation, the solution passed Arup's stringent internal design authority process, reflecting Teneo's technical expertise.

Deployment followed a comprehensive plan covering hardware tracking, pre-checks, hypercare transition, risk management, and stakeholder engagement. With operations spanning multiple regions, Arup faced logistical challenges in delivering equipment with strict import/export regulations to complex locations. Teneo expertly managed these hurdles, ensuring timely deliveries without burdening Arup's teams.

BUSINESS OUTCOMES

Arup's transition to Aruba EdgeConnect SD-WAN with Teneo has significantly improved performance, cost efficiency, and sustainability. By integrating firewall policies within Aruba's platform and eliminating separate WAN acceleration devices, Arup has streamlined infrastructure while reducing energy consumption and hardware footprint, which are hugely important to Arup's sustainability goals and mission statement.

Optimized routing and network link bonding have improved latency and bandwidth, while MPLS is being phased out in favor of dual DIA underlay, lowering costs. SD-WAN now provides seamless connectivity to Azure and AWS across 20+ regions per cloud, eliminating the need for multiple ExpressRoutes and Virtual Private Network (VPN) connections, further reducing costs and improving performance. Centralized management, automated configuration, and smoother firmware upgrades have also reduced operational overhead.

As Arup advances its Secure Access Service Edge (SASE)-based strategy, implementing Zero Trust Network Access (ZTNA) will further simplify security and policy management. Centralized control and unified security policies will make the network more agile and resilient, ensuring it remains adaptable to future demands.

In the long term, these efficiencies will support continued cost savings, especially with a growing reliance on public cloud and SaaS (Software as a Service) solutions. The shift to a software-defined, policy-driven network will reduce complexity, making future upgrades and expansions faster and easier. With a scalable, resilient architecture, Arup is well-positioned to evolve with business needs while maintaining high performance and security.

"Our network transformation isn't just about immediate gains - it's about long-term efficiency, security, and sustainability. By simplifying and future-proofing our infrastructure, we're ensuring it can evolve with the business for years to come," - Lee Cave, Global Head of Infrastructure and Technical Operations, Arup.

KEY RESULTS

- **306% increase in bandwidth across the organization.**
- **Up to 50% reduction in cloud egress costs using Aruba's virtual edge and the feature provided a significant performance improvement for remote sites.**
- **1500% increase in configuration efficiency, reducing time spent on firewall and routing changes.**
- **50% reduction in device and power consumption, aligning with Arup's sustainability goals.**
- **Seamless failover & improved resilience with active-active architecture.**
- **Significantly faster service response times from Teneo and reduced operational delays.**
- **14-month ROI, demonstrating rapid efficiency gains and cost-effectiveness.**

"Without Teneo, we may have eventually achieved these results, but not with the same speed and ease. Their technical expertise and proactive approach were key to the project's success, and combined with Aruba's robust SD-WAN technology, they proved to be the ideal partner for our network transformation."

— Lee Cave, Global Head of Infrastructure and Technical Operations, Arup



PURPOSE BEYOND PROFIT

In working with Teneo, you are helping to improve the lives of a million children around the world. [Learn more.](#)

About Teneo

Most Network and Security teams are overworked so making progress is a challenge. We securely connect users to their applications by combining leading technology with expert guidance. You stay in control, simplify your operations and keep ahead of the game.

Find out more at www.teneo.net.

UK
Teneo Ltd
20/21 Theale Lakes
Business Park
Moulden Way, Sulhamstead
RG7 4GB

T: +44 118 983 8600
F: +44 118 983 8633

France Teneo France S.A.S.
43 47, Avenue de la Grande
Armée 75116 Paris France

T: +33 1 55 51 30 38

USA
Teneo Inc.
44679 Endicott Drive
Suite #355
Ashburn, VA 20147

T: +1 703 212 3220
F: +1 703 996 1118

Australia
Teneo Australia Pty Ltd
Level 11, 64 York Street
Sydney
NSW 2000

T: +61 2 8038 5021
F: +61 2 9012 0683