SD-WAN Deployment: Learning from earlier SD-WAN adopters

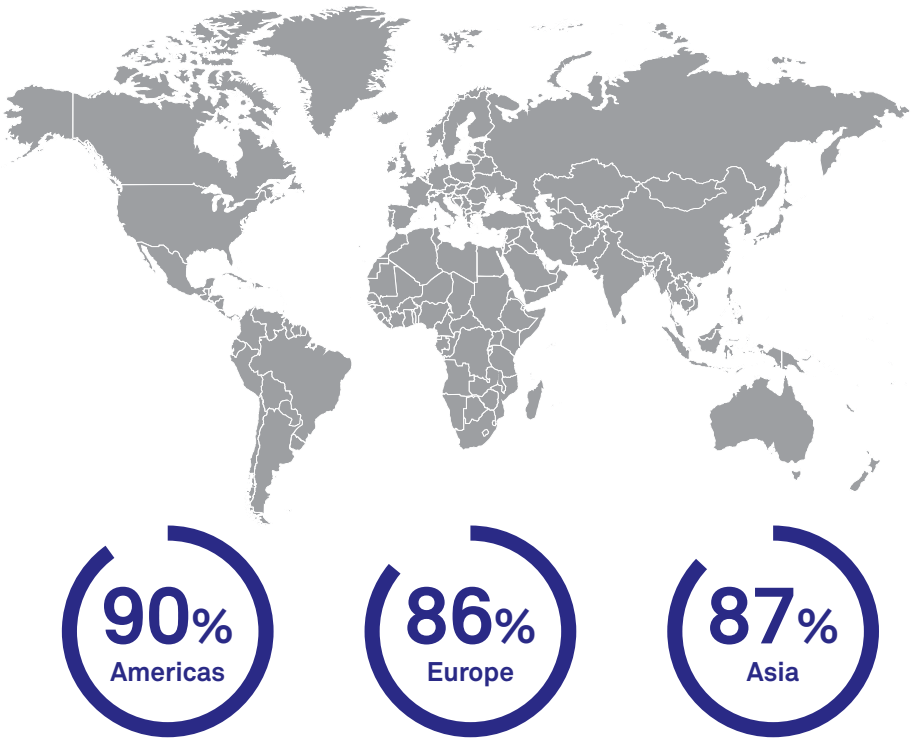
Part 2: Rapid, continuing adoption of SD-WAN highlights the technology's benefits resonating with enterprises across the world

SD-WAN has matured greatly in less than a decade, and the security and network performance it offers makes it more appealing than ever. The journey doesn't have to be complex—here's what earlier adopters have learned so far.

SD-WAN adoption and deployment

Software-defined wide-area network (SD-WAN) has greatly matured since the concept rose to popularity in 2016. Omdia's survey of enterprises in 3Q21 revealed that 61% of enterprises globally have SD-WAN deployments and a further 26% intend to deploy SD-WAN in the next 24 months. By 2023, 90%, 86%, and 87% of enterprises in the Americas, Europe, and Asia, respectively, intend to have some level of SD-WAN deployment (**Figure 1**). Earlier surveys showed that enterprises based in North Asia, in particular, wanted better visibility over applications in the network, and SD-WAN addresses this requirement. SD-WAN's continuing rapid adoption shows how the technology's benefits resonate with enterprises.

Figure 1: Enterprise SD-WAN penetration by 2023



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Source: Omdia

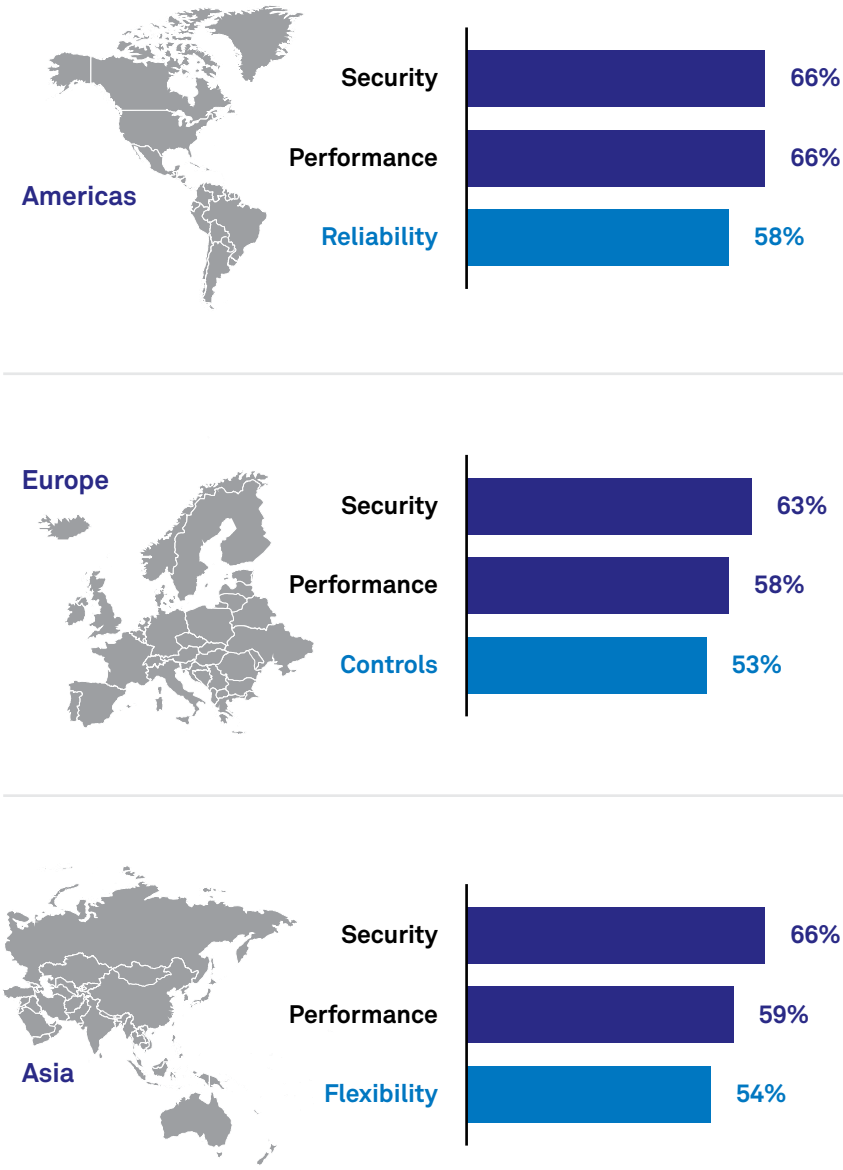
The adoption journey is complex. There are dozens of vendors to choose from and different flavours of SD-WAN that inherit elements from routers, wireless local area network (WLAN) gear, WAN optimisation, network probes, and security firewalls. All SD-WAN vendors have ways of managing the application layer, but each goes about this differently. In addition, technology vendors have very different perspectives on technology migration. Some push all-new appliances, others encourage existing equipment upgrades, still others press software options. Enterprises evaluating platforms must consider many factors that are not directly comparable. This may result in choice paralysis or worse, bad choices that are regretted later. Enterprises starting on their SD-WAN journey can learn what the potential challenges are from experienced SD-WAN adopters.

Valued SD-WAN benefits: Security and performance

Enterprises are motivated by cost savings and return on investment (RoI). Vendors tout SD-WAN cost savings to attract new businesses. While enterprise SD-WAN adopters agree that cost savings helped start conversations, once SD-WAN is deployed, cost savings become the least-valued benefit. Instead, enterprise SD-WAN adopters around the world rate security features such as centralised applications policy management and built-in firewalls as the most highly valued benefits. Also important is improved applications performance, with lower latency and guaranteed transactions (see **Figure 2**). The most valued SD-WAN benefits globally are security, followed by performance. However, the third most valued benefit varies by region:

- **Americas:** Adopters prioritise reliability in terms of WAN availability and faster troubleshooting.
- **Europe:** Adopters appreciate the ability to centrally manage and configure the network, and the option to manage applications at a more granular level.
- **Asia:** Adopters value the flexibility for faster site activation and the ease of network reconfiguration at selected sites as and when required.

Figure 2: Enterprises' three most SD-WAN benefits valued (by region)



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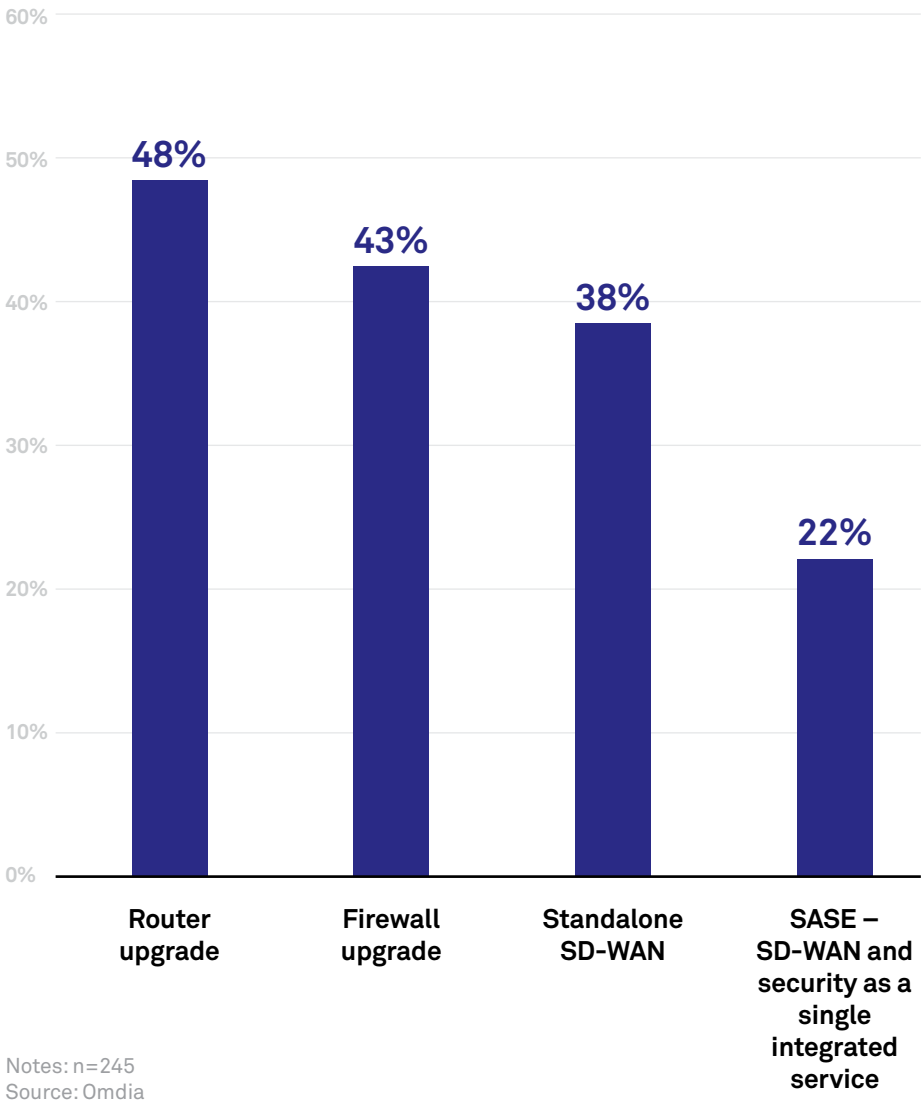
Source: Omdia

Many SD-WAN platforms are in deployment

As enterprise SD-WAN swept the industry, network equipment vendors were under immense pressure to add SD-WAN capabilities into their portfolio to remain relevant. Router, security, WAN optimisation, and wireless vendors have added SD-WAN to existing solutions.

SD-WAN standalone vendors such as Cisco Viptela, VMware SD-WAN, Versa, HPE Silver Peak, and Nokia Nuage are also options for enterprise SD-WAN adopters. Service providers add value by assembling SD-WAN solutions and by integrating SD-WAN with managed security as a bundle. In short, there is a sea of SD-WAN options for enterprises to assess on their SD-WAN journey. **Figure 3** shows the types of SD-WAN platforms that enterprises currently use.

Figure 3: Enterprises' currently used SD-WAN platforms by type



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Source: Omdia

There are some regional differences in platform selection. Enterprises based in the Americas, for example, are more likely to deploy white-label options from service providers or new, standalone SD-WAN platforms. Enterprises based in Europe and Asia more often choose to SD-enable their existing routers through upgrades.

Keeping the management of mixed SD-WAN platforms simple

Many large enterprises already have several SD-WAN platforms inside their organisation, with each taking a different role. Enterprises may choose to build a network-wide SD-WAN to manage the WAN and use another platform to handle security or WLAN at selected sites. Enterprises doing cross-border business with China may specifically set up separate SD-WAN platforms, controller, and underlay that are better suited for the Great Firewall.

Deploying SD-WAN in China: What MNCs should consider in a service partner

Gateway to support crossing borders

Service partner must have a gateway as an entry and exit point between China and the rest of the world.

Reliable underlay in China

Service partner should have points of presence (PoP) across China to support intra-country traffic.

Local team

This gateway should be managed by teams on the ground to support any requirements.

Experienced partners

Partner with providers who have experience in deploying and managing SD-WAN between China and the rest of the world.

Enterprises find that deploying SD-WAN across all sites simplifies management. When a global retailer of sporting goods headquartered in Germany embarked on their SD-WAN deployment for all its retail outlets around the world, they initiated the project with a trusted partner based in Hong Kong. They found that global standardisation simplified policy management and was more effective for troubleshooting since learnings can be easily applied to other sites.

Enterprise SD-WAN adopters and service providers caution against overlapping SD-WAN platforms for the same functions. There is no off-the-shelf integrated management platform to put different SD-WAN solutions under a single pane of glass. It will be challenging to manage multiple SD-WAN solutions in the same role, each with its own functionality.

Enterprises are still inexperienced with SD-WAN deployment

SD-WAN is a relatively new technology. Few enterprises have an in-house IT team with solid platform deployment and operations experience. IT departments undergoing technology migration and transformation should not be distracted by teething issues that come with SD-WAN migration. An experienced SD-WAN partner plays a vital role in making a deployment easier.

Enterprises have dozens of platforms to choose from. The first challenge will be selecting the SD-WAN platform best suited for their needs. **Table 1** shows the commonly asked questions about SD-WAN that enterprises might not be able to answer themselves. An experienced service provider can guide enterprises away from the common pitfalls that happen during deployment and provide answers on how to get more value from their SD-WAN deployment.

Table 1: Enterprises' considerations while on their SD-WAN adoption journey

IT infrastructure	Business operations	Sourcing	Management
How well can my current equipment support SD-WAN? Is any incompatible equipment ready for refresh? Is physical or virtual better suited for my needs? How will the SD-WAN deployment impact connectivity needs?	What do I expect SD-WAN to do for my business? What do I expect SD-WAN to do for my business? Which sites need to be SD-WAN enabled? How do I prioritise the sites to be enabled? What resources do applications need to reach on the network?	Which vendors/ partners best match my needs? Which vendors/ partners best match my needs? How will SD-WAN connect to other network assets?	What tasks will be handled in-house, and which should be outsourced? What administrative policies do I need to implement? How do I ensure the SD-WAN infrastructure is secure?
Bottomline: How do I get more value and satisfaction from my SD-WAN deployment, for my business?			

Source: Omdia

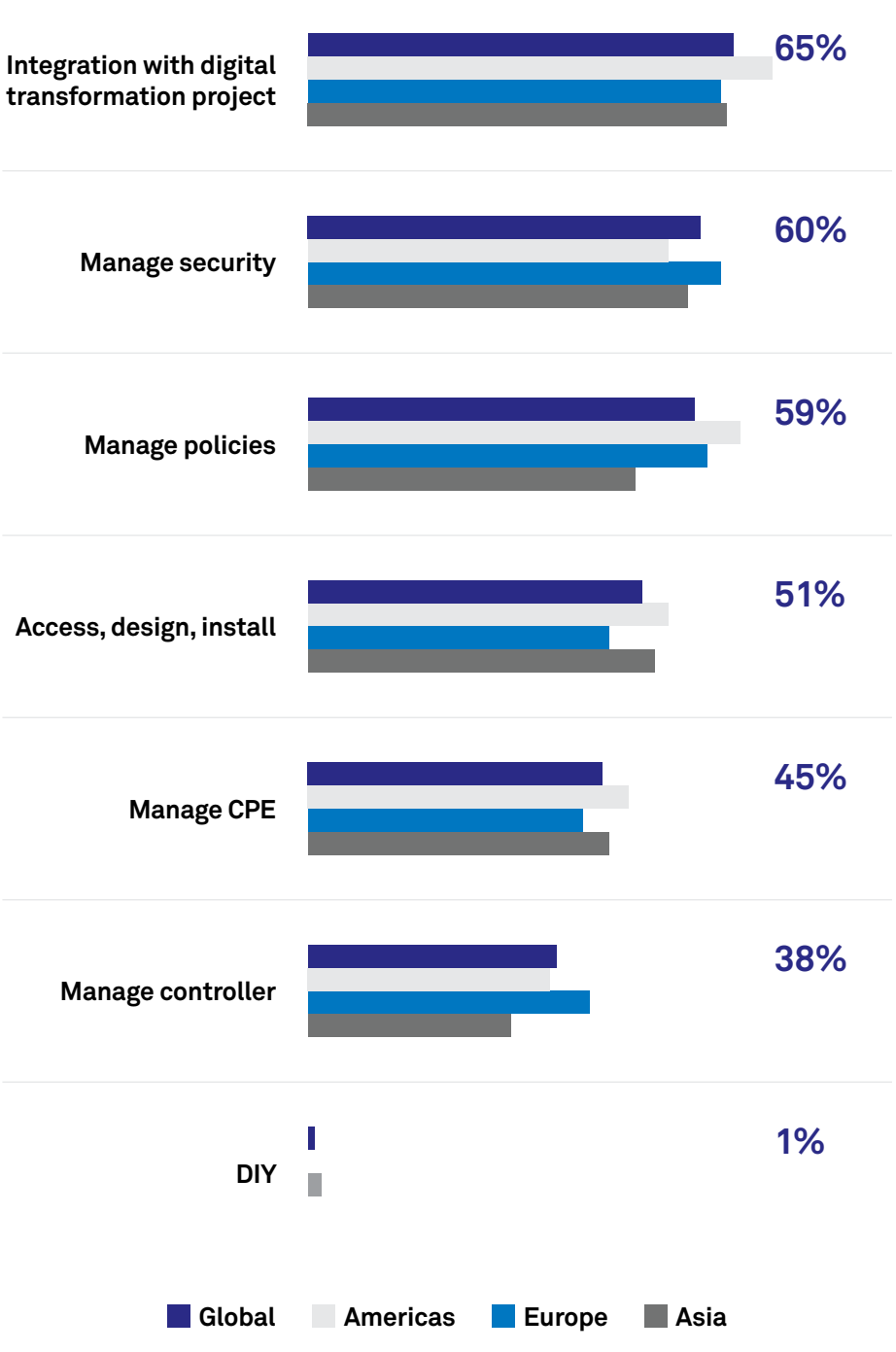
SD-WAN adopters seek help from service partners

99% of enterprises outsource aspects of SD-WAN deployment and management to service partners (**Figure 4**). 65% of enterprise adopters add SD-WAN services to a larger digital transformation project, tapping into the expertise of partners. Enterprises may not fully outsource every aspect of SD-WAN deployment and operations, but nearly all adopters bring in partners to assist at key points.

Enterprises based in the Americas and Asia are more likely to make SD-WAN services part of a larger digital transformation project.

Enterprises based in Europe, by contrast, are more likely to prioritise bringing in partners for managed security services.

Figure 4: Enterprises seek managed services partners to help deploy and manage aspects of SD-WAN



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Source: Omdia

Full-service providers are often enterprises' preferred partners

Enterprises have a universe of potential partners to choose from. They may call on SD-WAN vendors, system integrators, specialist service providers, or full-service providers for their SD-WAN deployment. Each has a different set of strengths and capabilities.

Enterprises recognise that for SD-WAN deployment, network ownership is an advantage. Sixty per cent of enterprises across the world rate big international and/or incumbent carriers, which offer a full spectrum of network and managed services, as a preferred partner for their network transformation projects. Enterprises in Singapore (74%), followed by Germany (69%), have the highest preference for big international and/or incumbent carrier partners. Large enterprises benefit from full-service providers' extensive partnerships and geographical coverage, bringing more value and higher satisfaction.

Some countries impose national restrictions around the delivery of managed and professional services. Multinational enterprises with branches in mainland China, for example, need service providers that can help with the intricacies of operating cross-border networks, professional and managed services. This includes optimal performance with China's Great Firewall. Full-service providers will have local partnerships and expertise that comply with national requirements.

Full-service providers bring in-house expertise, offer a broad range of products and services, have wide geographical coverage, and can combine the underlay network infrastructure with overlay managed SD-WAN and other services to ensure service-level agreements (SLAs) are met. Full-service providers have the tools to customise a network mix that best fits an enterprise's needs. **Figure 5** highlights that capabilities of each type of partner and why enterprises prefer full-service providers as network transformation partners.

Figure 5: Why enterprises prefer full-service providers as network transformation partners

Services	Full-service providers	Specialist service providers	System integrators	SD-WAN Vendors
Professional services expertise and experience				
SD-WAN deployments	Y	Y	Y	Y
Other network transformation technologies	Y	M	Y	N
Full range of products and services	Y	Y	Y	N
Wide geographical coverage (24/7) support capabilities	Y	M	M	M
Product Coverage				
Other network transformation technologies	Y	M	Y	N
Updated with latest network transformation technologies	Y	Y	Y	N
Ownership				
Network underlay (fixed line, mobile, and broadband)	Y	M	N	N
Overlay service management	Y	Y	N	N
Future-proof solutions				
Turnkey migration to next-gen SD-WAN	Y	Y	Y	Y
Turnkey migration spanning multiple networks (e.g., 5G and fibre)	Y	M	N	N

Legends:

Yes: Have such capabilities
No: Does not have such capabilities
Maybe: May or may not have such capabilities

Full-service providers:

Operate fixed, mobile and broadband infrastructure, supported by in-house professional services.

Specialist service providers:

Operate some network (fixed, mobile or broadband) infrastructure, supported by limited professional service capability.

Source: Omdia

Integration of SD-WAN and security with SASE

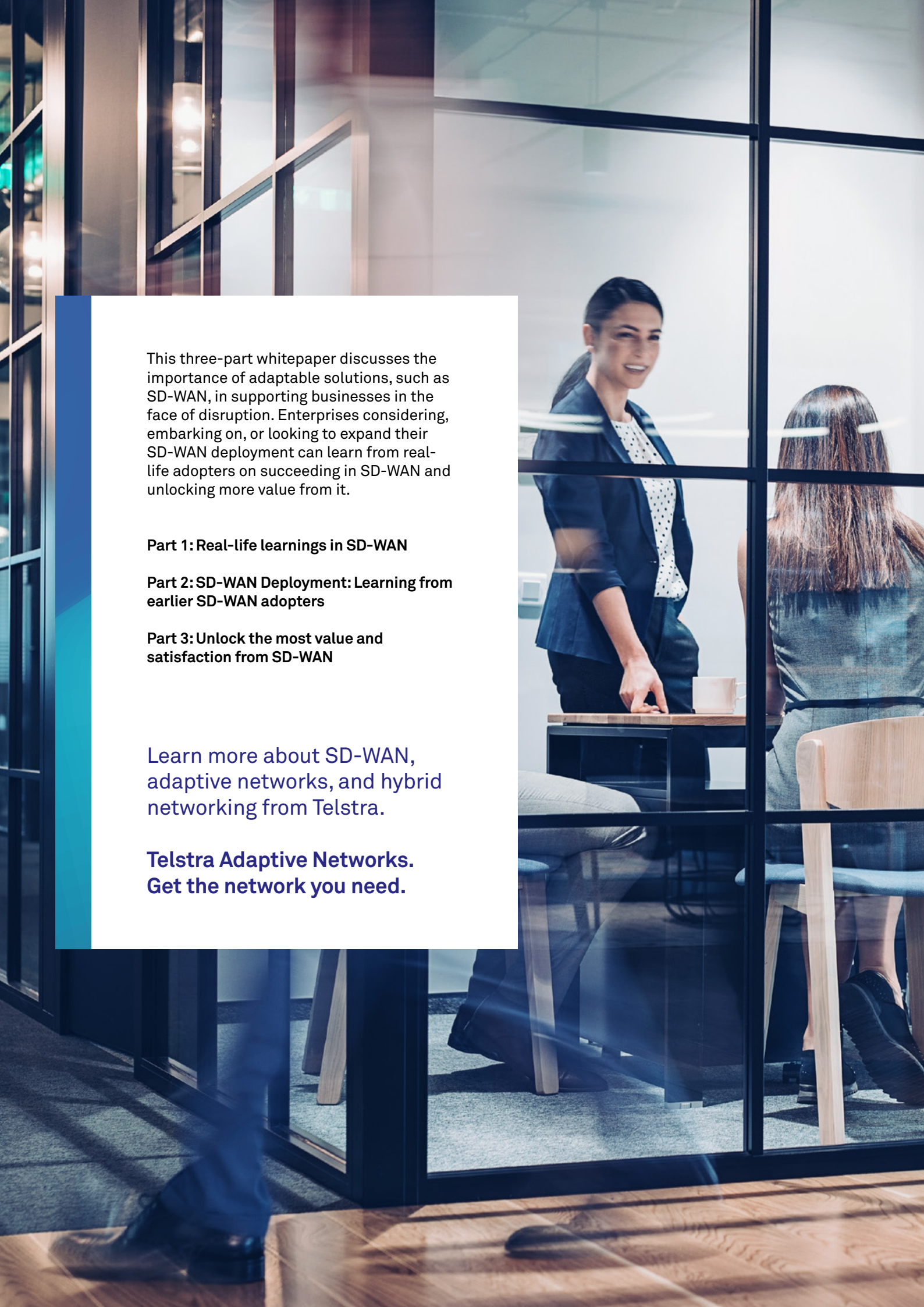
Enterprises are expanding their traditional network perimeter beyond headquarters, data centres, branches, and smaller sites. Today, data and compute resources are distributed across public clouds, network edge, site edge, and work-from-home. Attackers are trying to take advantage of this expanded attack surface, and it needs to be secured. According to Omdia's Global Cybersecurity Services Survey in 2021, 59% of enterprises experienced a significant increase in cybersecurity attacks since the start of the pandemic.

Enterprises are working to secure their changing network architectures with features such as threat detection and prevention, zero-trust networking, secure cloud access, and secure web and applications process.

SASE—secure access service edge—is an umbrella term coined to describe network and security merging with SD-WAN as a key element. Under a zero-trust model, a network assesses requests at its edge to determine the source's digital identity, device, and request context. If the identity, device, or application type does not align, traffic is not authorised to enter the network.

SASE solutions can be provided by vendors such as Fortinet and Cisco, or even managed service providers who can integrate the best-of-breed security platforms available with SD-WAN platform in use, or best-of-breed SD-WAN suited to the enterprise.

This zero-trust approach aligns with the trend of a more distributed workforce. It adds a layer of security by denying any action by default that has not been explicitly permitted.



This three-part whitepaper discusses the importance of adaptable solutions, such as SD-WAN, in supporting businesses in the face of disruption. Enterprises considering, embarking on, or looking to expand their SD-WAN deployment can learn from real-life adopters on succeeding in SD-WAN and unlocking more value from it.

Part 1: Real-life learnings in SD-WAN

Part 2: SD-WAN Deployment: Learning from earlier SD-WAN adopters

Part 3: Unlock the most value and satisfaction from SD-WAN

Learn more about SD-WAN, adaptive networks, and hybrid networking from Telstra.

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Appendix

Methodology

The data used in this white paper is drawn from Omdia's Global Enterprise Network Services Insights 2021 survey. Omdia conducted this global survey in 2Q21 across nine markets. The survey reached 404 enterprise executives across a range of industries, polling about their experiences related to a range of network transformation practices. Surveyed companies ranged in size from 100+ employees to 10,000+ employees. Respondents had executive IT and network/WAN specialist roles and were involved in ICT purchase decisions for their companies.

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