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SD-WAN: Tips for Enterprises to Unlock More Value

Learning from real-life early adopters

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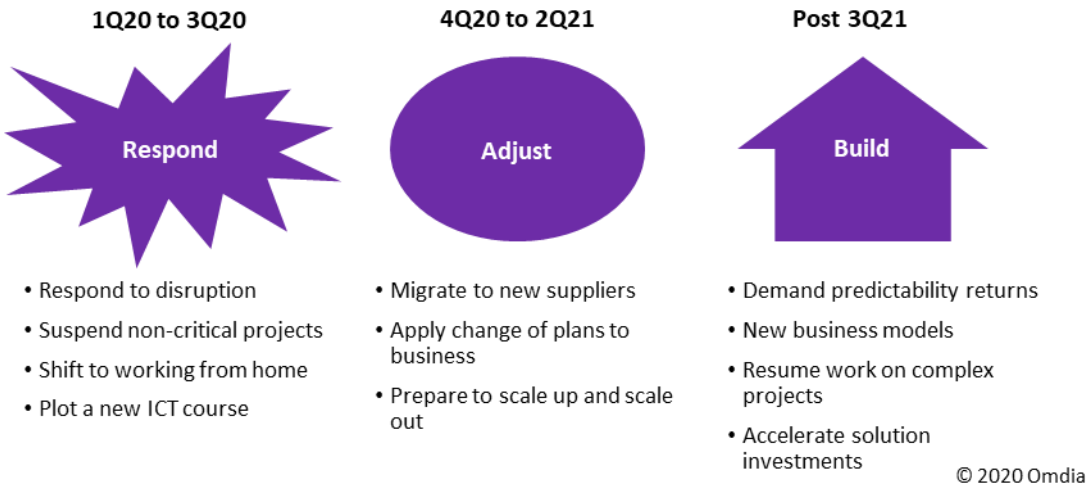
Contents

COVID-19 drives ICT transformation

"Unprecedented times": In 2020, COVID-19 shook the world, derailed organisations' technology plans, and disrupted businesses globally. Omdia has noted how some businesses are faring better than others during this disruption. This is partly because of the varying fortunes of industries—while pockets of manufacturing and logistics boom, much of travel and accommodation languishes. However, enterprises with up-to-date information and communications technology (ICT) have shown how an agile infrastructure lets them quickly adapt to change, giving them a competitive edge. Tech laggards are in the difficult position of trying to pivot their processes, rushing to implement point solutions without long-term considerations. Omdia believes that the pandemic will leave lasting impressions, changing the way enterprises do business and view technology investments. Figure 1 shows Omdia's present assumptions of the COVID-19 cycle and how enterprises are dealing with these changes.

Figure 1: Omdia's projections for the three business stages of a COVID-19 "exit strategy"



Source: Omdia

- **Governments mandate working from home:** Organisations with employees that worked at offices were heavily affected. In the short term, organisations shifted their network connectivity and traffic loads, and employees accessed applications via public internet VPNs while relying on unified communication and collaboration tools to connect with coworkers and customers. In the long term, enterprises will need to optimise the traffic between remote end users, gateways, and the cloud. Issues include choke points, security to protect assets exposed to the public internet, and self-service tools that empower remote workers.

- **Enterprises' responses to ICT investments sometimes seem counterintuitive:** Enterprises are cutting budgets to preserve cash in response to business slowdowns. At the same time, they are also allocating ICT investments in strategic areas. Some enterprises have an urgent need to catch up to their peers; others are using the business slowdowns to improve operations and build a competitive edge.

- **Details of the long-term recovery journey remain uncertain:** Enterprises need flexible, adaptable infrastructures, and services that deliver high-quality performance yet remain cost-effective. Enterprises with flexible architectures can scale their operations in response to changes, growing or contracting their budgets in line with their businesses.

- **Network requirements will transform:** Today, fewer businesses feel confident about signing a static five- or even three-year contract. Businesses must be nimble. They will use a mix of new network technologies to help them transform: software-defined wide-area network (SD-WAN) for better management and control, hybrid networking for more efficient service delivery, network functions virtualisation (NFVs) as a universal toolkit, and flexible bandwidth to match usage to costs.

Introduction and industry trends: The fragmentation of the enterprise network

Omdia view

Over the past decade, enterprise ICT has weathered wave after wave of changes. The following lists some of the disruptions:

- Cloud became central to organisations
- Digital transformation changed how companies conduct business
- Virtualisation took over physical hardware
- Connectivity became flexible and software defined
- Variable workloads encouraged on-demand, pay-as-you-go offers

These changes have shaken up organisations from top to bottom—from the application space down to basic infrastructure. Each trend is interdependent on others. A move to the cloud affects the network, and changing the network affects application performance. Today, companies are breaking infrastructures apart: central applications to microservices; central data centres to distributed cloud locations; and from a single WAN to a mix of private WAN, public internet, dedicated and broadband, and wireline and wireless. Network and IT infrastructures are in flux, and corporate leaders need flexibility.

IT leaders' challenge is to find the right balance. Broadband internet, for example, might cost less, but those savings sacrifice the consistent performance and high-availability guarantees of stringent service-level agreements (SLAs). Companies must assess the risk and cost to the business that might occur from extended outages and contended traffic that loses transactions and degrades user experiences.

The scales of value and risk differ for company headquarters, data centres, large branches, small branches, and remote offices and workers. The mix of resources and where to deploy them also changes over time.

Network transformation enables flexibility. Hybrid networks, SD-WAN, virtualised networking, bandwidth-on-demand, and cloud connectivity are parts of the toolkit that helps businesses adapt their communications infrastructures to changes. They make business leaders more agile in responding to planned and unexpected changes as well as in supporting operations that match business needs.

Unsurprisingly, enterprises rate large network operators as the best network transformation partners that produce the most value and highest satisfaction. Large, full-service network providers tick the most boxes and are in the best position to build value. These operators have in-house expertise, offer a range of products and services, support broad geographical coverage, control the underlay infrastructure, and have the overlay service management to ensure SLAs are met. Full-service network providers can mix the right combination of options, drawing from a range of offers. Figure 2 compares different types of partners and what they bring to the table.

Figure 2: Why enterprises prefer large network providers as network transformation partners

Services, product coverage, and control	SD-WAN Vendors	System integrators	Specialist service providers	Full-service Providers
Professional services expertise and experience: SD-WAN deployments	✓	✓	✓	✓
Professional services expertise and experience: ALL network transformation technologies	✗	✓	~	✓
Professional services: Able to support full range of products and services (e.g., application, analytics, cloud)	✗	✓	✓	✓
Professional services: Wide geographical coverage (24/7 support capabilities)	~	~	~	✓
Product coverage: ALL network transformation technologies	✗	✓	~	✓
Product coverage: Updated with latest technology across ALL network transformation technologies	✗	✓	✓	✓
Ownership: ALL network underlay (fixed line, mobile, and broadband)	✗	✗	~	✓
Ownership: Overlay service management	✗	✗	✓	✓
Future-proof solutions: Turnkey migration to next-gen SD-WAN	✓	✓	✓	✓
Future-proof solutions: Turnkey migration spanning multiple networks (e.g., 5G and fibre)	✗	✗	~	✓

Legend

✓ Have such capabilities
✗ Does not have such capabilities
~ 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

SD-WAN deployment: Learning from adopters

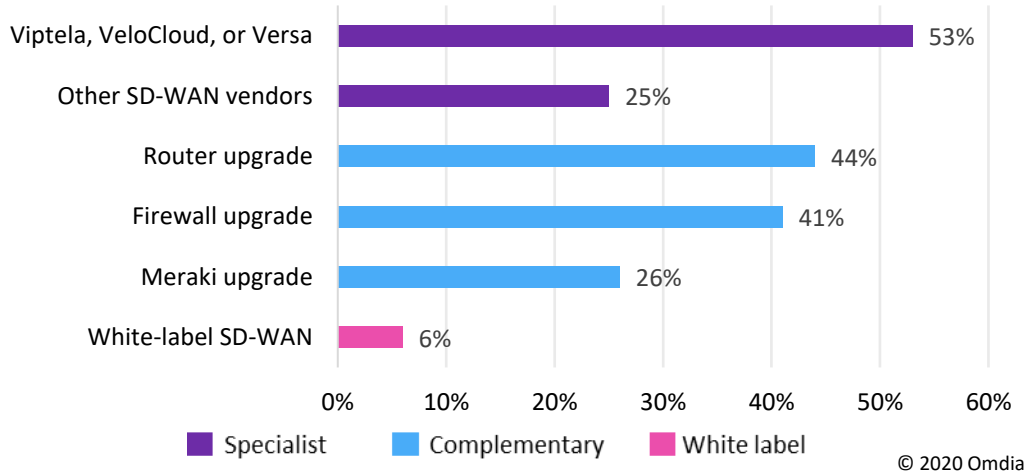
SD-WAN has quickly evolved from new technology to enterprises' preferred way forward. Omdia's survey of enterprises in the first quarter of 2020 (1Q20) uncovered that 53% of larger enterprises are testing or have deployed SD-WAN. Dozens of vendors have risen to meet the opportunity, merging SD-WAN features with routers, wireless local area network (WLAN), WAN optimisation, and network security. Technology vendors tout a confusing variety of conflicting visions: all-new appliances versus equipment upgrades, software versus hardware, and different emphasis on device and management features.

Favoured flavours of SD-WAN platforms

Dozens of vendors are laying claim to SD-WAN. Among larger enterprises, Omdia finds that more than half of them have deployed one of the "Three V's," namely Cisco Viptela, VMware VeloCloud, and Versa Networks. Enterprises report these deployments more than twice as frequently as all other specialist SD-WAN vendors including Nokia, Riverbed, Silver Peak, and Citrix. More recently, the market shifted to add router and firewall vendors that introduced SD-WAN enablement as upgrades to their existing gear. Figure 3 shows the types of SD-WAN platforms that enterprises currently use.

However, one vendor cannot suit all needs, and many larger enterprises now have several SD-WAN solutions. Enterprises may choose one vendor to build a network-wide SD-WAN and add other SD-enabled platforms in more limited roles.

Figure 3: Enterprises' currently used SD-WAN platforms

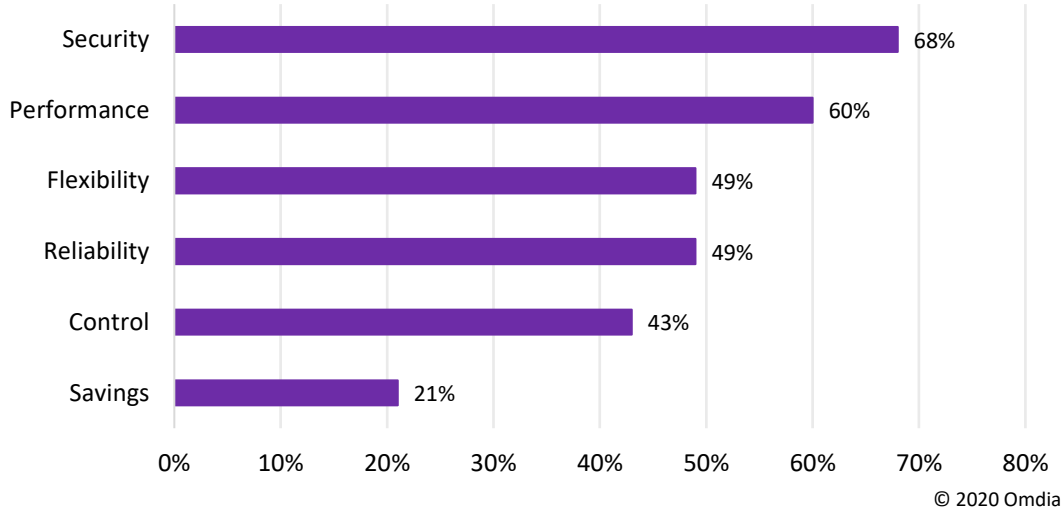


Notes: N = 271
Source: Omdia

Security and cost savings: Enterprises rank their SD-WAN benefits

Enterprises have completely flipped their SD-WAN priorities over the past several years. At first, enterprises—influenced by vendor messaging—ranked cost savings as the top benefit, tempered by concerns of whether SD-WAN was secure. In 2020, enterprises perceive security as the largest benefit, and cost savings dropped to the bottom. Figure 4 shows the enterprise-assigned importance of SD-WAN deployments' range of benefits.

Figure 4: Enterprises' most valued SD-WAN benefits

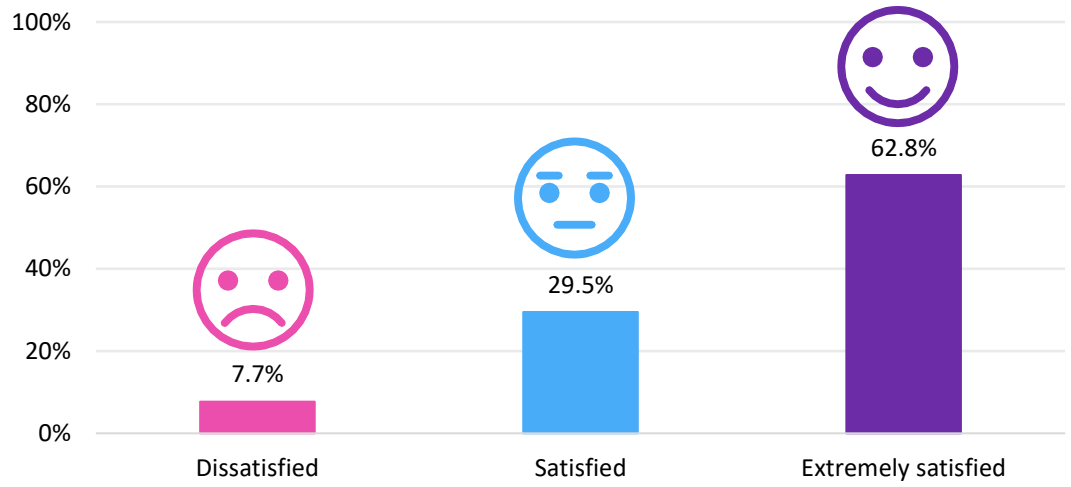


Notes: N = 271
Source: Omdia

SD-WAN adopters glean returns and are satisfied

Enterprises that have deployed SD-WAN have reported high levels of success and satisfaction with the relatively new technology. An impressive 97% of enterprises that have SD-WAN note that the solution provided net positive results. Among the enterprises deploying SD-WAN, 85% share that they are satisfied with their SD-WAN solution, and the adopters' average satisfaction rating was at 7 on a scale of 1 to 10. Figure 5 shows the enterprises' relative satisfaction levels with SD-WAN.

Figure 5: Enterprises' SD-WAN satisfaction levels



Notes: N = 261
Source: Omdia

A small group of adopters (15%) is unhappy with its current SD-WAN experience. Dissatisfaction mostly stems from choosing the wrong vendors or the wrong partners as well as from not adopting the technology properly. Not a single enterprise Omdia surveyed considered giving up on SD-WAN to revert to older technology.

Partners play a vital role in the SD-WAN journey

Relatively speaking, SD-WAN is still a new technology. There are dozens of platforms to choose from. Expertise is in short supply, a challenge for enterprises considering SD-WAN adoption. Table 1 shows the common questions about SD-WAN that enterprises ask but might not be able to answer themselves. An experienced service provider partner can supply knowledge from its range of prior SD-WAN deployments. This can play a vital role in helping an enterprise make the right choices with its SD-WAN deployment, leading to more value and higher satisfaction.

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

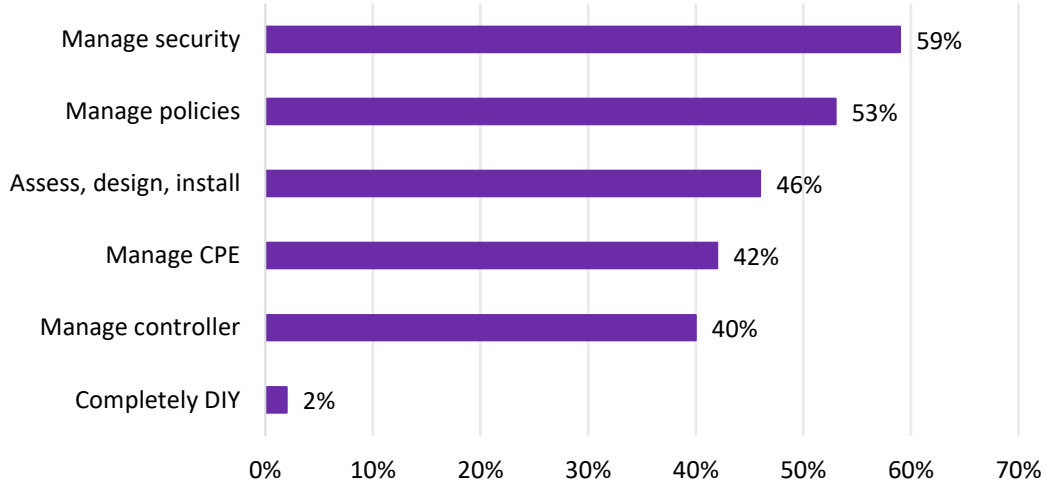
IT infrastructure	Business operations	Sourcing	Management
Can my current equipment support SD-WAN? If not, is the equipment ready for refresh? What other parts of the network should the company transform?	What do I expect SD-WAN to do for my business? Which sites need to be SD-WAN enabled first? What resources do applications reach on the network?	Which vendors/partners should I work with? What WAN connections are needed? How will SD-WAN connect to other network assets?	What tasks are handled in-house, and which are outsourced? What policies do I need to implement? How do I ensure the SD-WAN infrastructure is secure?

Source: Omdia

To understand the attributes of a good SD-WAN partner, one must look at professional service aptitude, access to and support from best-in-class vendors, and what other expertise and in-house capability (such as WAN operations) they can contribute. Large network service providers offer a range of vendors to choose from and unite SD-WAN with a comprehensive WAN and internet underlay, which serves enterprises that adopt SD-WAN well.

SD-WAN migration is often part of a larger ICT infrastructure transformation involving network, cloud, and applications. This is why 98% of SD-WAN adopters use external partners to help them on this journey. Although most enterprises do not fully outsource SD-WAN, Figure 6 shows that nearly everyone needs selective assistance. More than half of the surveyed enterprises use co-managed models.

Figure 6: Enterprises seek managed services partners to help deploy and manage SD-WAN aspects

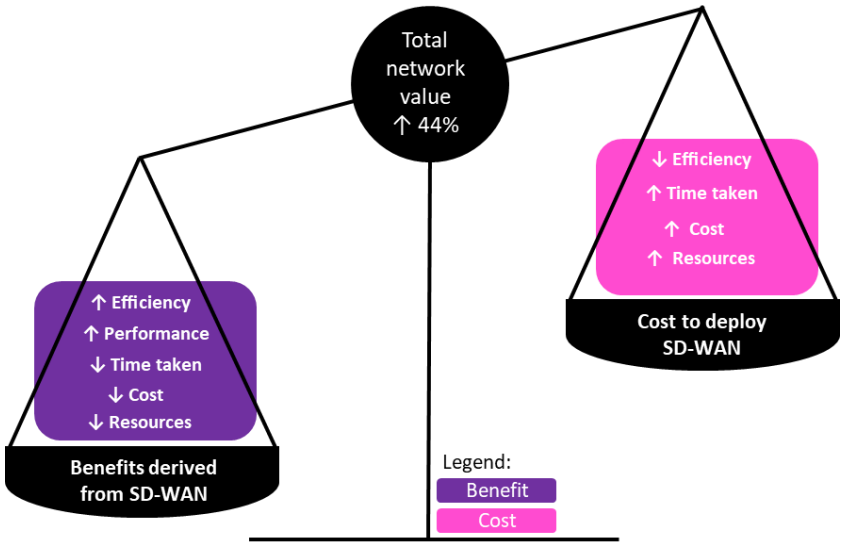


Notes: N = 271
Source: Omdia

SD-WAN brings value to the network

The decision of whether to adopt SD-WAN comes down to the value that it brings to the business. When enterprise adopters consider the total added value of their SD-WAN implementations to date—that is, weighing benefits such as efficiency; time saved; improved performance; and cost savings offset by extra time, cost, and the resources needed to deploy—they record an increase in value of 44% on average. Figure 7 shows the positives and negatives that enterprises were asked to weigh when considering the total added value of their SD-WAN solutions. As they expand their deployments, enterprises that adopt SD-WAN project a 44–56% increase in the total added value of their SD-WAN deployments in the next two years.

Figure 7: Enterprises that weigh SD-WAN deployment's pros and cons predict high net added value



Source: Omdia

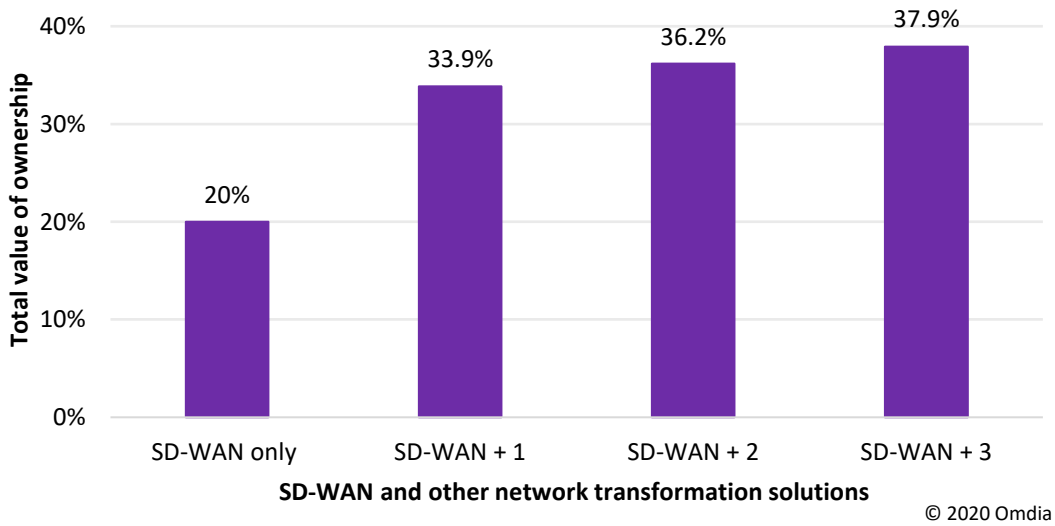
How enterprises unlock the most value from SD-WAN deployments

SD-WAN should be worked into other network transformation solutions

All aspects of network transformation—SD-WAN, hybrid networking, private WAN connection to the cloud, bandwidth-on-demand, and NFV—bring value to the business. Combining solutions brings more value than the sum of its parts.

Omdia asked enterprises for the total added value they had received from SD-WAN and compared it against the total number of network transformation solutions they had deployed. As Figure 8 shows, enterprises that deploy more network transformation solutions together recognise higher total value from each. Ultimately, SD-WAN complements (and is complemented by) an organisation's other network solutions.

Figure 8: Enterprises' total value of ownership with SD-WAN increases as they adopt other network transformation solutions



Notes: Total value of ownership refers to the net improvements SD-WAN and other new networking technologies have made to enterprises' network operations
Other network transformation solutions refer to hybrid networking, cloud connect, flexible bandwidth, and NFV
N= 271
Source: Omdia

Table 2 gives examples of network transformation solutions' synergy with SD-WAN. One example is the combination of SD-WAN with hybrid networking. Hybrid networking can reduce WAN cost while increasing performance. SD-WAN adds centralised monitoring and policy control for performance and security, ensuring high-quality user experience. Together, these benefits bring lower costs, more flexibility, and better application performance than what either platform delivers by itself.

Table 2: How other network transformation services unlock enterprise SD-WAN value

	Hybrid networking	Cloud connect	Flexible bandwidth	NFV
Direct benefits	Cost savings and performance via tapping public internet and private IP networks (e.g. DIA, MPLS)	Securely links the enterprise WAN to public cloud services via MPLS, ethernet, or dedicated circuit	Ensures performance to meet changing enterprise needs with control over spending	Delivers functions to sites virtually and is able to scale on demand
Value unlocked with SD-WAN	Centralised controller makes complex hybrid networks simpler to manage	Optimises cloud connect's traffic delivery through end-to-end applications management	Policies can monitor services' performance and trigger flexible bandwidth increases	Easily deployed via NFV to places that cannot host appliances

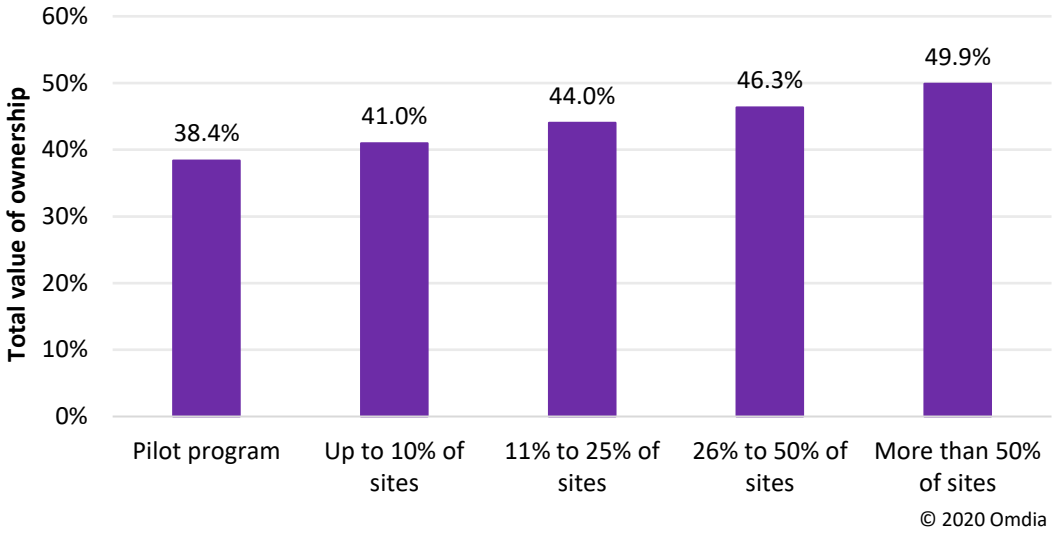
Source: Omdia

SD-WAN should be adopted more extensively in the organisation

When it comes to adopting new technology, organisations are often cautious. A bad decision wastes resources. Furthermore, the lifespans of onsite equipment, service, and support contracts vary. Many larger organisations start by studying and testing SD-WAN through pilots and modest rollouts, then grow their SD-WAN use in phases.

As Figure 9 shows, enterprises that deploy SD-WAN extensively glean more value than those that limit their SD-WAN deployments to fewer sites. To unlock more value from SD-WAN, enterprises need to keep network investments rolling and grow the number of sites under SD-WAN's management umbrella.

Figure 9: Enterprises realise higher value by deploying SD-WAN to more of their sites



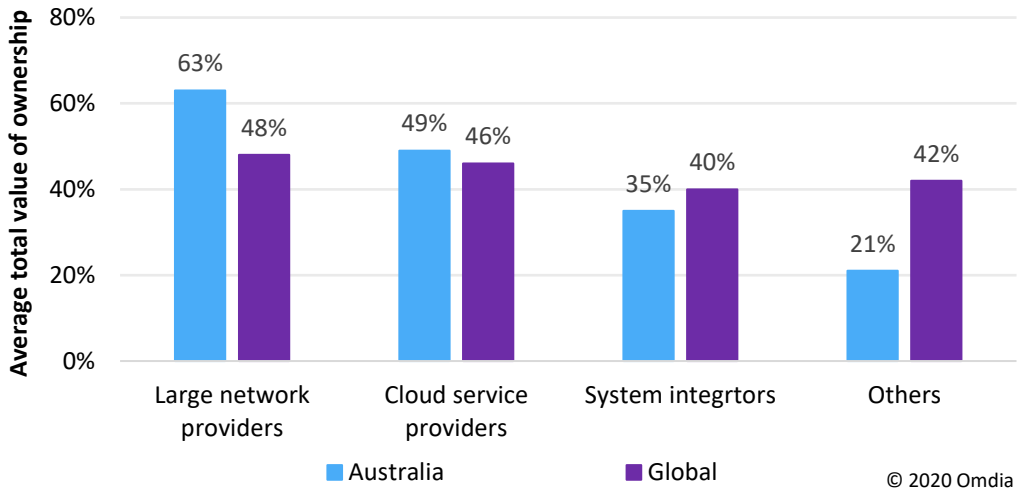
Notes: Total value of ownership refers to the net improvements SD-WAN has made to enterprises' network operations
N= 212
Source: Omdia

The advantages of large network services partners

SD-WAN is a new technology, and enterprises find that they need help along the way. Enterprises have the option of working with network providers, vendors, system integrators, and cloud and managed service providers among others. IT executives that buy SD-WAN by equipment vendor logo will realise that one size does not fit all. Working with a service provider opens choices to a variety of platforms and options. The partner can advise, assess, and assist in a SD-WAN implementation plan that best meets the enterprise's needs.

A large network service provider supports a mix of vendor partners and has the depth of resources to help enterprises that encounter unexpected migration challenges. Network providers also bring network operations. Large network providers are well versed across the full range of services and are in the best position to help enterprises interested in migrating to hybrid networks. They can build a migration plan that balances cost and risk, with considerations for security, performance, and resilience. Figure 10 shows the added value that enterprises report from their SD-WAN deployments, categorized by their primary services partner. Worldwide, and in Australia, organisations report both greater value and higher satisfaction when they deploy SD-WAN in partnership with a large network operator.

Figure 10: Enterprises' average total added value from their SD-WAN deployments based on primary managed services partner



Notes: Total value of ownership refers to the net improvements SD-WAN has made to enterprises' network operations
Source: Omdia

Recommendations

Current enterprise deployments show that SD-WAN is a safe bet to add value to a business. COVID-19 gives even more reasons to adopt centralised control and management over remote endpoints as well as to operate the network using concentrated intelligence and correlated analytics.

What is not a safe bet, however, is counting on the SD-WAN overlay to compensate for a best-effort broadband underlay. Cheaper broadband services trade cost for consistent performance and reliability guarantees. This is one reason why enterprises turn to full-service providers for SD-WAN. The range of dedicated internet and network services, wired and wireless broadband, are all important components to assemble a quality enterprise network.

Enterprises that adopt SD-WAN report a 44% increase in the total value of ownership on average. Measurable benefits include improved efficiency, performance, shortened intervals, and cost savings. Enterprises have flipped on SD-WAN: two years ago, enterprises were concerned over SD-WAN security. Now, they are choosing SD-WAN for its security benefits. Along the journey, enterprises can also realise cost savings.

Enterprises, on average, achieve the highest added value and most satisfaction when they partner with large network operators that are full-service providers. Network transformation is best with the expert assistance of a network operator that understands multiprotocol label switching (MPLS) and internet; broadband and dedicated; wireline and wireless; and a host of managed network, security, and professional services. Full-service providers are uniquely positioned to help enterprises balance all factors in their network transformation.

Enterprises unlock more value when they combine SD-WAN deployment with other network transformation solutions. Hybrid networking, network virtualisation, WAN connectivity to cloud, and flexible bandwidth intertwine with SD-WAN to build a more powerful solution.

The industry is now several years into deploying SD-WAN. Other than the risk of choosing a poorly suited platform or partner, enterprise experiences show that the technology is a relatively safe bet. Among polled enterprises that have adopted SD-WAN, 85% are satisfied with their deployment. Dissatisfied adopters are rethinking platforms and partners, but virtually no one reverses the decision to adopt SD-WAN.

Enterprises on their network transformation journey need to start with accurate and up-to-date network documentation, a service history, an inventory of their network assets, knowledge of required network performance and availability, and a list of applications the network must support. Partners providing managed services can help with audits, assessments, and advice to help set a foundation for the enterprise's SD-WAN implementation.

Conclusion

Based on its enterprise surveys and qualitative interviews, Omdia believes enterprise executives recognise that network transformation is now more important than ever. Organisations are in uncertain times and have unpredictable budgets. Executives need their enterprise networks to be more flexible yet cannot compromise set levels of security and performance.

In its discussions and surveys, Omdia exposes some fundamental points. First, SD-WAN, especially when combined with other network transformation practices, consistently delivers value and leaves buyers satisfied. Second, almost all enterprises rely on partners to help them in their network transformation journey. Third, enterprises implementing SD-WAN rate that large network operators provide the most overall value among partners. Large network operators supply a mix of platforms, network and managed services, security, and professional service expertise that is well suited for working with enterprises to deploy SD-WAN solutions that deliver a high net positive value.

Appendix

Methodology

The data used in this white paper is drawn from Omdia's Enterprise Network Services Insights 2020 survey. Omdia conducted this global survey in 1Q20 across 10 markets including Australia. The survey reached 480 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 250+ 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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We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Omdia's consulting team may be able to help your company identify future trends and opportunities.

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