



SD-WAN/SASE Managed Services Survey 2022

Top trends, feature needs, and integration trends in the software-defined wide-area network (SD-WAN) and secure access service edge (SASE) managed services market.

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Key Findings and Highlights

- **Our survey of 118 U.S.-based enterprise networking and IT managers confirmed continued awareness and growing interest in SD-WAN and SASE managed services.** Of those surveyed, 72% of respondents said they were aware of both SASE and SD-WAN managed services offerings.
- **SASE/SD-WAN enable the Internet as a key networking tool for hybrid work and work-from-anywhere (WFA).** A full 75% of respondents (89) believe that SD-WAN and SASE managed services will help build momentum behind using the Internet for business connectivity, including Dedicated Internet Access (DIA).
- **Hybrid work is here to stay.** A total of 83% of respondents said “Yes” that digitalization and hybrid work environment has increased their need for SD-WAN managed services.
- **SASE technology is growing as a key part of cybersecurity strategy.** When asked if SASE technology will grow as part of an organization’s strategy to implement a more agile, pervasive cybersecurity strategy, 85% of a total of 117 respondents said “Yes.” Only 7% said “No,” and 8% said they didn’t know.
- **There is demand for many SD-WAN/SASE features and services.** The top need reported was for managed security services, selected by 79% of respondents, followed by co-management and self-service portals at 51% (more than one choice allowed). The next most popular features included multicloud connectivity (47%), AIOps (38%), and multiple connectivity options including wireless (36%). Application QoS (36%), unified communications support (25%), and integrated transport (17%) were also popular.
- **Managed services will edge out DIY in SASE/SD-WAN deployments.** Our research indicates that most end-users are looking for fully featured SASE and SD-WAN managed services that have co-management options, many security features, and some degree of automation. But the two top differentiators, according to survey responses, were the availability of SLAs (56%) and the price (54% - multiple responses allowed). The next most popular differentiators were the inclusion of routing and advanced security features (50%),

breadth of security offerings (35%), and integrated network transport connectivity (32%). See the chart below for the full results.

- **SASE/SD-WAN services partnerships continue to blossom.** Global service providers and SASE/SD-WAN vendors continue to add to their portfolios of services and platforms. Service providers of all stripes see the opportunity to deliver more value to their customers by integrating some combination of security and networking.

Some of the SASE/SD-WAN managed service providers discussed and/or profiled in this report: Apcela, Aryaka Networks, AT&T, British Telecom, Cato Networks, Cloudflare, Colt, Comcast, Deutsche Telekom/T-Systems, Hughes, Lumen Technologies (formerly CenturyLink), Masergy, NTT, Orange, Tata Communications, Telefonica, Telstra, Verizon, Vodafone, Windstream.

Some of the SASE/SD-WAN vendors and suppliers mentioned in this report include Cisco, Fortinet, HPE (Aruba/SilverPeak), Juniper Networks, Nokia (Nuage), Palo Alto Networks, VMware.

(Note: This is not an exhaustive list of companies in this market, but one that represents the leading providers of SASE/SD-WAN managed services in the view of Futuriom analysts.)

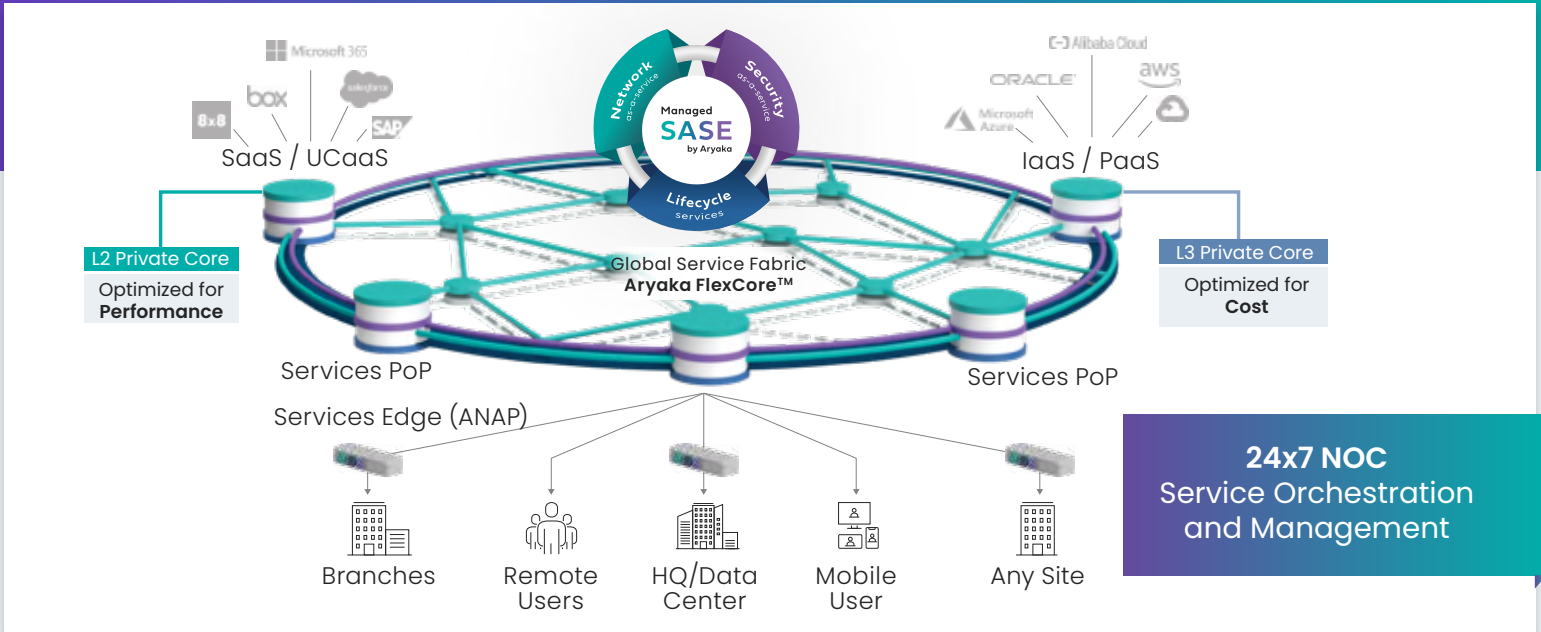
The World's Best SD-WAN Goes SASE

Aryaka's all-in-one managed services deliver the best user, security, and network experience for enterprises worldwide



Why Aryaka?

- ✓ Multi-Cloud Networking Made Fast and Easy
- ✓ Direct Connectivity to Leading IaaS, PaaS, and SaaS Providers
- ✓ Global High-Performance WAN & Multi-Cloud Fabric
- ✓ Optimal Choice of WAN Connectivity: Private L2 Core, Private L3 Core, Internet, and MPLS
- ✓ Managed SASE, Both Edge and Cloud, With Best-of-Breed Partners Including Check Point, Palo Alto, Zscaler, and Symantec



Network Vendors

Unlike SD-WAN Focused vendors, Aryaka provides a global network and ability to deliver a managed service



Security Vendors

Unlike security focused vendors, Aryaka differentiates with the true convergence of Security and SD-WAN to deliver an agile and high performance experience

Telcos/Carriers/MSPs

Unlike traditional Service Providers, Aryaka delivers a highly superior customer experience with integrated offerings without defending legacy MPLS revenues

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- ✓ Resilient Layer 2 & 3 dedicated backbone with end-to-end SLAs – no ISP peering
- ✓ Scale-out Services PoPs for cloud-delivered capabilities



The Cloud-First WAN for dummies



Gartner Peer Insights 'Voice of the Customer' WAN Edge Infrastructure, 2022



6th Annual Aryaka State of the WAN – Insights for SD-WAN and SASE Success

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1. Introduction

Software-defined wide-area networking (SD-WAN) and Secure Access Service Edge (SASE) technology have emerged as two of the fastest-growing markets in enterprise networking and cybersecurity. The two technology platforms are now converging to manage a wide variety of networking and security services. This report, based on a survey and interviews with enterprise technology users, explains why end users are drawn to both SD-WAN and SASE technology, as well as why managed services are likely to grow as a choice for delivery of these technologies to organizations worldwide.

It's clear from our interview and survey work that both groups of technologies are gaining traction. Futuriom expects the SD-WAN tools and software market will remain at a steady CAGR of 34%, reaching \$2.6 billion in 2021, \$3.5 billion by 2022, \$4.6 billion by 2023, according to our recent research. The SASE market, which is a broader extension of SD-WAN, includes many different cloud security tools and services (to be detailed later in this report), which extends and adds to the size of the SD-WAN market. These tools provide the foundation for robust growth in managed services.

It's important to understand that the success of SD-WAN set the stage for SASE by delivering a cloud-based platform for managing and delivering new networking and security services. The reason that organizations were drawn to SD-WAN is because it helps simplify managing WAN networks in a cloud-first world. This is largely done in software by centralizing application and network policies, and simplifying network and application connectivity by using software automation that works with any network transport underlay services. This enables faster deployment of network services and better management. Futuriom believes both trends -- SD-WAN and SASE -- set the stage for growth in managed services that can combine the ease of use of SD-WAN and SASE platforms to deliver cloud-based networking and security services to end users. Service providers (including both traditional service providers and managed service providers [MSPs]) are also interested in this model because it gives them the potential to integrate SD-WAN tools, network connectivity, and value-added services such as security. Our survey works indicates that end users are interested in this value proposition.

Key Trends in SD-WAN

SD-WAN is becoming one of the most popular ways to connect branches, offices, and even remote offices for organizations. By separating the hardware from cloud-based software control, it offers numerous benefits to end users by streamlining how networks are deployed – including reducing costs by using Internet technology to augment or replace more expensive legacy technologies such as multiprotocol label switching (MPLS). In addition, SD-WAN can be used to divert cloud applications from more expensive datacenter routes by directly connecting them to cloud points of presence (POPs).

Here are some key trends in SD-WAN as identified by Futurium research:

- Our research shows the perceived customer benefits of SD-WAN continue to be improved security, better management/agility, bandwidth optimization/cost savings, and faster cloud application performance. These benefits were emphasized in our 2021 SD-WAN Growth Report.
- SD-WAN and cloud security services are converging. As SD-WAN vendors continue to add security services to fit a broader cloud-based cybersecurity market known as SASE, the markets will gradually merge over time as SD-WAN capabilities expand.
- The WFH and hybrid work trends will continue to give the SD-WAN market a boost. SD-WAN integrates virtual private networking (VPN) functionality for both remote workers and enterprise branches, which is a key feature demand.

Key Trends in SASE

SASE technologies represent an outgrowth of the SD-WAN market with the integration of a wide variety of cybersecurity functions, many of them cloud-based. As networking managers realized they could more easily deploy network services with a software-defined, cloud-oriented model, security specialists also wanted to use the same deployment model, often in conjunction with deploying SD-WAN. There is a natural need to integrate the two approaches – delivering both SD-WAN and SASE security services simultaneously. This is how SASE was born, and many SD-WAN technology vendors jumped on board the trend.

SASE does not apply to one specific cybersecurity or networking technology. Rather, it describes a basket of technologies that can be used to integrate solutions to attack multiple security challenges at once. That approach is appealing to organizations looking to build a unified security strategy. Some of the key security functions and capabilities that are already associated with SASE and secure edge deployments include secure web gateways (SWG), cloud access service brokers (CASBs), firewall-as-a-service (FWaaS), and zero trust network access (ZTNA). In addition, SASE vendors are increasingly integrating data loss prevention (DLP) and malware detection capabilities. All these technologies are merging under a common policy management and security umbrella that supports secure connectivity between endpoints and resources from any physical location. The results from our survey for this report detail how all these technologies are in relatively high demand.

At its core, SASE is a framework that attempts to further the goals of zero trust, which is a philosophy and an architectural goal of verifying access to applications and networking, while SASE is a framework for implementing zero trust concepts. Our Cloud Secure Edge and SASE Trends Report, published in October of 2021, detailed the trends in the SASE ecosystem, including strategies from a broad array of SASE vendors. The key trends include:

- The SASE market is gaining momentum, representing an important convergence of networking, cloud, and applications security functions.
- Integration and consolidation of security functions on the SASE platform will remain a strong trend. End users we have surveyed and interviewed are asking for better integration of cloud and network security tools to adapt to end-user mobility, increased cloud applications access, and diverse security threats.
- End users and technology vendors have aligned interests to drive SASE. Core end-user needs, such as the integration of security tools and cloud networking elements, align with technology vendor efforts to consolidate and drive more value across integrated cybersecurity product portfolios.

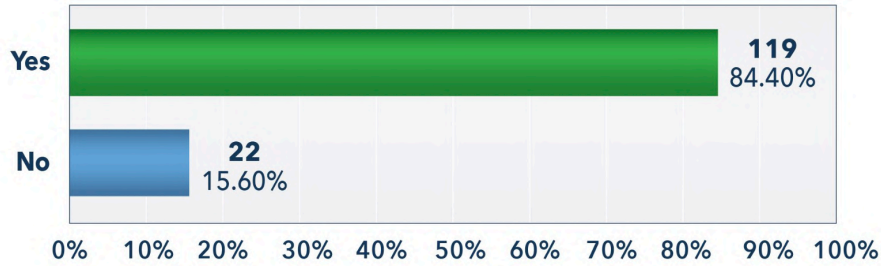
- SASE addresses the need for more flexible security architectures in the cloud-based world. Although different vendors are approaching this with a wide variety of architectures and solutions, nearly all of them are moving to flexible, services-based platforms that can be delivered to edge devices or delivered via the cloud, or both.
- Strong M&A is expected to continue in the market. With many large acquisitions taking place in SASE areas such as cloud access service broker (CASB) and ZTNA, expect this trend to continue as larger players roll up best-of-breed security functions into their SASE portfolios. In addition, this will drive more partnerships among vendors and MSPs.
- SASE is a huge addressable market for both technology providers and MSPs. With the opportunity to provide integration of many security functions, provide more secure cloud and remote access, and replace traditional virtual private networks (VPNs), the addressable market is tens of billions of dollars. SASE also has the potential to address and integrate dozens of other cybersecurity markets.

There are several ways that SD-WAN and SASE can be deployed. Enterprises can engage with SD-WAN infrastructure and software vendors to adopt their technologies themselves using a do-it-yourself (DIY) approach, or they can purchase SD-WAN services from an MSP, which can take many different shapes (traditional telco, Internet-based provider, or multiple systems operator [MSO], such as a cable company). The survey for this report focuses on how SD-WAN is being integrated with SASE services and delivered as-a-service by MSPs.

Survey Background

This report focuses on how SD-WAN and SASE services will be delivered by MSPs to provide better ease of use and integration by end users and consumers. To dive deeper into how SD-WAN and SASE will be increasingly delivered as a managed service, Futuriom conducted a survey of 118 enterprise end users in the United States to assess their goals and needs for adopting SD-WAN and SASE managed services technology. The respondents were all filtered to make sure respondents were director-level or above titles in IT or network management. From an initial sample size of more than 150 respondents, we threw out respondents that did not select director-level and above job roles.

Do you have a role at director-level and above in an organization with more than 100 employees?

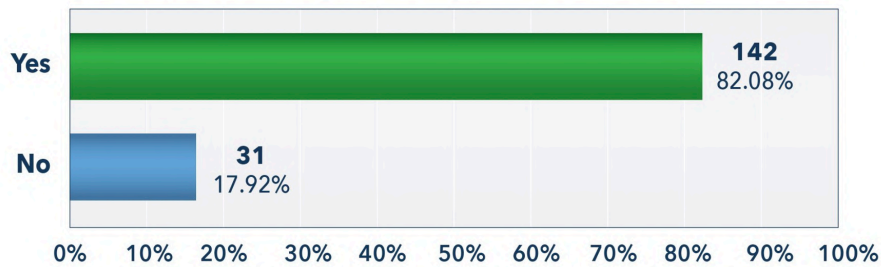


ANSWER CHOICES	RESPONSES	
Yes	84.40%	119
No	15.60%	22
TOTAL		141

FUTURIUM - Futurium SD-WAN Managed Services Survey 2022 Total responses = **141**

Additionally, we only accepted results from respondents who answered a filter question asking if they acknowledged responsibility for network services, as shown below.

Do you manage or buy network services?



ANSWER CHOICES	RESPONSES	
Yes	82.08%	142
No	17.92%	31
TOTAL		173

FUTURIUM - Futurium SD-WAN Managed Services Survey 2022 Total responses = **173**

After removing the results from both filters, each question received a total of between 114-118 respondents (a few of the questions had incomplete answers from the filtered respondents).

The questions for the survey were designed after speaking to a broad range of service providers, enterprise end users, and technology vendors. This year's survey reflected continued interest in both SD-WAN and SASE managed services. In addition, the survey results showed that end users are especially interested as they could integrate SD-WAN and SASE platforms to cover a broader role of networking and security needs. We'll drill down into the specifics of this through our survey results.

The survey aimed for the following broad goals:

- Assess the demand for SD-WAN and SASE managed services
- Identify key needs and users for SD-WAN managed services
- Identify key needs and users for SASE managed services
- Identify the key features and functionality sought by end users for both SASE and SD-WAN managed services

This report summarizes the results of the survey and the primary research we have conducted over the past few months. Let's dive into the details of specific trends as reflected in our survey.

2. 2022 SD-WAN/SASE Managed Services Survey Results

Futurion believes there are several strong currents underlying the rising interest in SD-WAN and SASE managed services. Organizations are attracted to the idea of using SD-WAN as a cloud-based orchestration and management platform for all network services, including SASE.

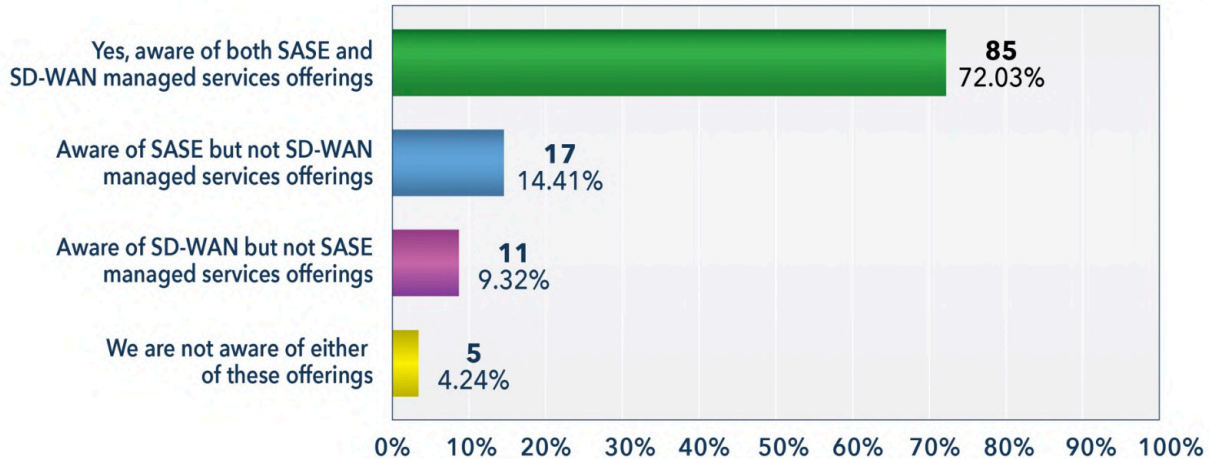
Organizations want to expand their cybersecurity tools and integrate them with networking services such as SD-WAN and other cloud-connected networks. Furthermore, organizations want to consume these networking and security services from an agile, software-based platform that includes control through some sort of Web-based management portal.

Of course, there are many more details which will be covered in the survey results. Let's start with the growing awareness of SD-WAN and SASE.

SD-WAN and SASE Awareness Continue to Grow

Our survey confirmed continued awareness and growing interest in SD-WAN and SASE managed services. Of those surveyed, 72% of respondents said they were aware of both SASE and SD-WAN managed services offerings. In an interesting finding, SASE appears to be building slightly broader awareness than SD-WAN, as 14% of respondents said they were aware of SASE but not SD-WAN, compared with 9% for the reverse. But these numbers, overall, indicate broad and growing awareness of the technologies.

Are you aware of, or have you researched, secure access service edge (SASE) or software-defined wide-area networking (SD-WAN) managed services offerings?



ANSWER CHOICES	RESPONSES
Yes, aware of both SASE and SD-WAN managed services offerings	72.03% 85
Aware of SASE but not SD-WAN managed services offerings	14.41% 17
Aware of SD-WAN but not SASE managed services offerings	9.32% 11
We are not aware of either of these offerings	4.24% 5
TOTAL	118

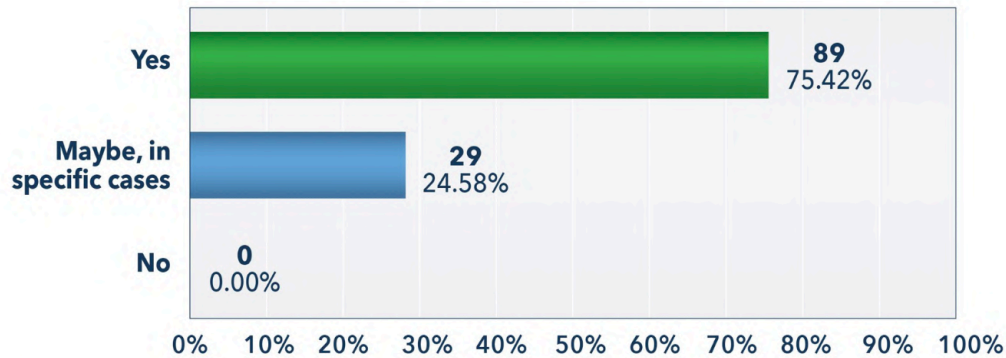
FUTURIOM - Futurium SD-WAN Managed Services Survey 2022

Total responses = **118**

One of the keys to the success of both SD-WAN and SASE is the continued evolution of Internet infrastructure and its growing popularity for delivering enterprise applications and services. This has spurred a broad expansion of Internet capabilities, including more sophisticated Internet transit as well as Dedicated Internet Access (DIA) services, in which organizations are given performance guarantees using Internet transit.

Futurium believes the use of the Internet, including Internet transit and DIA services, will continue to grow. SD-WAN and SASE managed services are complementary to this trend, as they enable more robust and secure enterprise communications over the Internet. As the chart below shows, 75% of respondents (89) believe that SD-WAN and SASE managed services will help build momentum behind approaches using the Internet for business connectivity, including DIA.

Do you believe that SD-WAN and secure access service edge (SASE) managed services will help build momentum behind approaches using the Internet for business connectivity, including Dedicated Internet Access (DIA)?



ANSWER CHOICES	RESPONSES	
Yes	75.42%	89
Maybe, in specific cases	24.58%	29
No	0.00%	0
TOTAL		118

FUTURIOM - Futuriom SD-WAN Managed Services Survey 2022

Total responses = **118**

Interestingly, this is a significant increase from last year, when we asked the same question (although it was limited to only SD-WAN services). In last year's survey, 48% of respondents indicated they believed that DIA was a viable alternative to private leased lines and MPLS, and 51 % said DIA was a viable alternative in specific cases. Just one respondent said DIA was not a viable alternative. The boost to 75% in this year's survey shows momentum behind the trend.

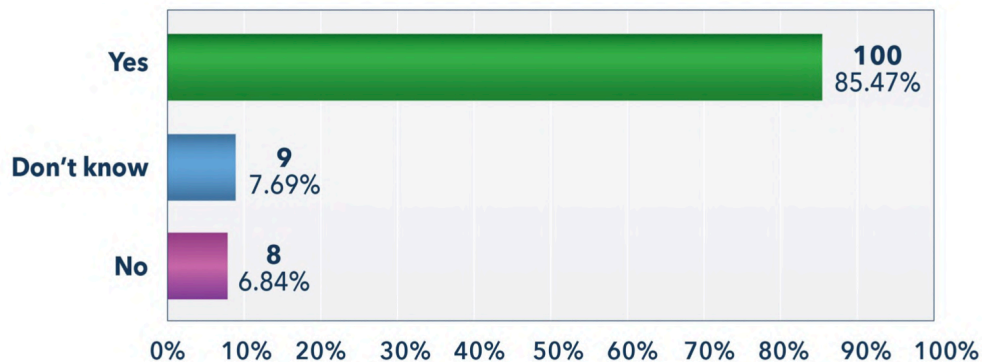
We should be clear that engineers will argue over the proper definition of DIA and Internet services and whether they compete directly with leased lines. Please note, Futuriom believes that leased lines cannot always be replaced with SD-WAN or SASE. End users are aware of this and often purchase a balance of integrated underlay and overlay services. This has also been one of the drivers of SD-WAN services, which enables optimization of the networking transport available.

SASE Benefits for Hybrid Work and Security Integration

Another area driving the growing awareness of SASE technology is its broad application in network security. SASE platforms can include a wide array of security features and services, making them attractive to networking and IT departments looking to consolidate their security tools and improve their security posture.

When we asked survey respondents if they believe the use of SASE technology will grow as part of their organization's strategy to implement a more agile, pervasive cybersecurity strategy, 85% responded "Yes." Only 7% said "No," and 8% said they didn't know, with a total of 117 responses.

Do you believe the use of secure access service edge (SASE) technology will grow as part of your organization's strategy to implement a more agile, pervasive cybersecurity strategy?



ANSWER CHOICES	RESPONSES	
Yes	85.47%	100
Don't know	7.69%	9
No	6.84%	8
TOTAL		117

FUTURIOM - Futurium SD-WAN Managed Services Survey 2022

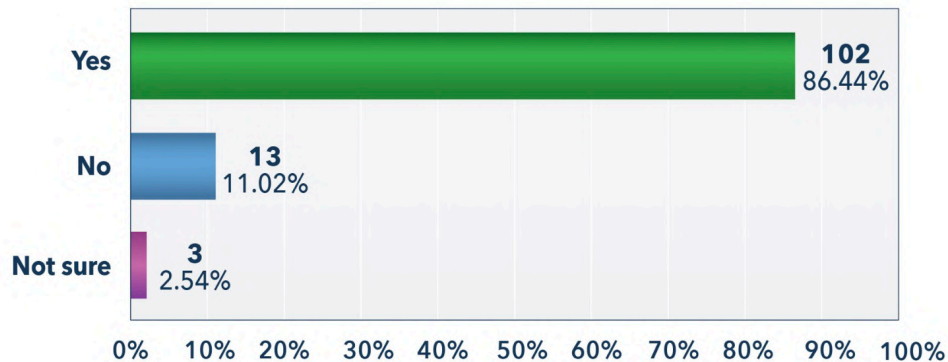
Total responses = **117**

Already two years from its onset, the COVID-19 pandemic still has had a large impact on health, work, and society. In the work and cybersecurity space, the shift toward remote and hybrid work environments has dominated many IT and network transformations.

Hybrid work has become the norm, and organizations have needed to find ways to support an agile, secure networking infrastructure. With its software-based cloud delivery architecture, SASE fits this model perfectly.

Most SASE platforms can integrate with or include software-based network security functions such as SSL inspection, next-generation firewall (NGFW), Web filtering, FWaaS, ZTNA, and CASB, which are now checklist items for securing remote workers. When looking at the survey results, the impact of the COVID-19 pandemic is clear. When we asked, “Has digitalization and hybrid work environment increased your need for SASE managed services?” 86% of respondents said “Yes,” with only 11% responding “No.” Roughly 3% weren’t sure.

Has digitalization and hybrid work environment increased your need for secure access service edge (SASE) managed services?



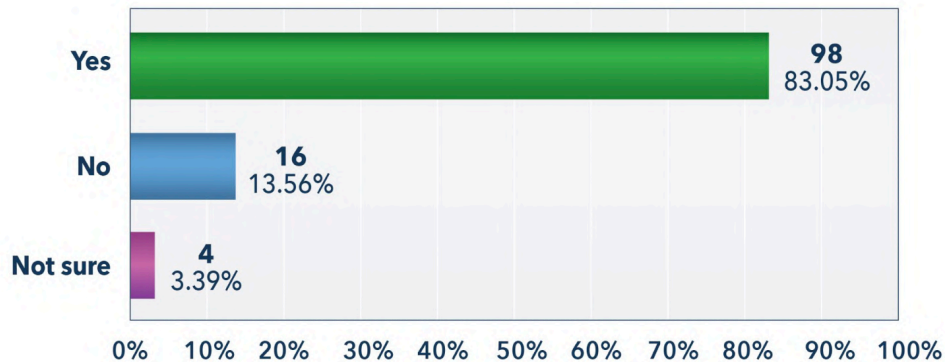
ANSWER CHOICES	RESPONSES	
Yes	86.44%	102
No	11.02%	13
Not sure	2.54%	3
TOTAL		118

FUTURIOM - Futurion SD-WAN Managed Services Survey 2022

Total responses = **118**

The response rate for SD-WAN managed services was similar, with 83% reporting “Yes” that digitalization and hybrid work environment has increased their need for SD-WAN managed services. A slightly higher number – 14% -- said no, while 3% said they didn’t know.

Has digitalization and hybrid work environment increased your need for SD-WAN managed services?



ANSWER CHOICES	RESPONSES	
Yes	83.05%	98
No	13.56%	16
Not sure	3.39%	4
TOTAL		118

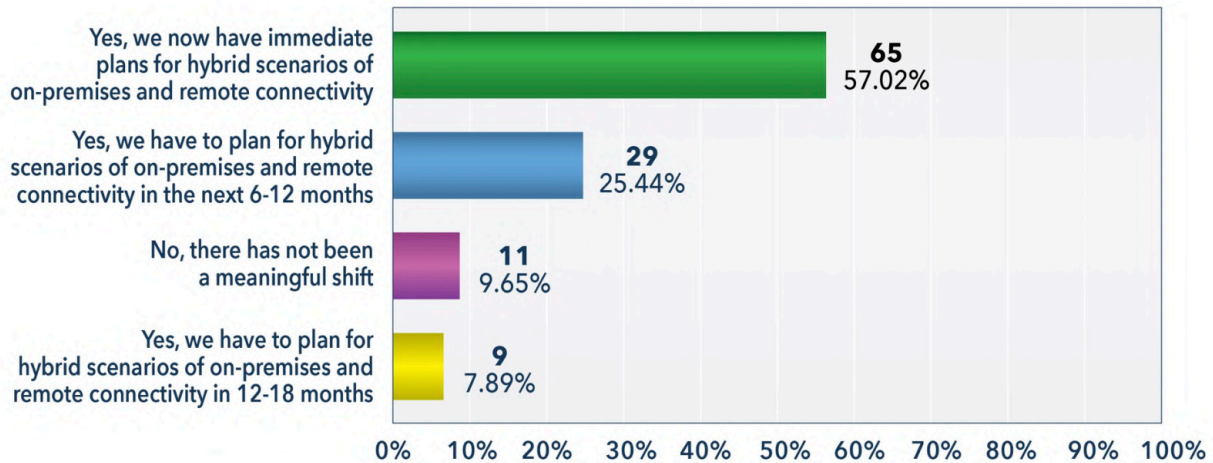
FUTURIOM - Futurium SD-WAN Managed Services Survey 2022

Total responses = **118**

How do SASE and SD-WAN benefit hybrid work? SD-WAN has risen in popularity due to its flexibility and management efficiency – a software-defined approach enables network managers to deploy and manage branches remotely, often eliminating site visits for manual configuration of devices. Both technologies also offer better tools to deploy applications and policy management tools using software, allowing a more streamlined approach to manage enterprise connectivity – for example, mass deployments can be handled with software updates using templates or policy updates.

In another question addressing the new business environment, we asked about views on managing networks and security across on-premises and remote connectivity. When asked if views had changed, 57% of respondents said they now have immediate plans for hybrid scenarios of on-premises and remote connectivity, and 25% said they have such plans for the next 6-12 months – meaning that combination of 82% of respondents had plans for hybrid scenarios of connectivity within the next 12 months. Only 10% said there has been no meaningful shift, and 8% said their plans extend to 12-18 months.

Has the recent business environment changed how you view managing networks and security across on-premises versus remote users and the combination thereof?



ANSWER CHOICES	RESPONSES
Yes, we now have immediate plans for hybrid scenarios of on-premises and remote connectivity	57.02% 65
Yes, we have to plan for hybrid scenarios of on-premises and remote connectivity in the next 6-12 months	25.44% 29
No, there has not been a meaningful shift	9.65% 11
Yes, we have to plan for hybrid scenarios of on-premises and remote connectivity in 12-18 months	7.89% 9
TOTAL	114

FUTURIOM - Futurium SD-WAN Managed Services Survey 2022

Total responses = **114**

This provides a major opportunity for MSPs, who can create value-added packages combining SD-WAN and the cybersecurity features included with SASE targeting agile, hybrid environments. A wide range of service providers, technology vendors, and cloud security providers are adding new SASE and SD-WAN features, whether that's through partner solutions or fully integrated services. The list of features we have been tracking, and asked about in the survey, included:

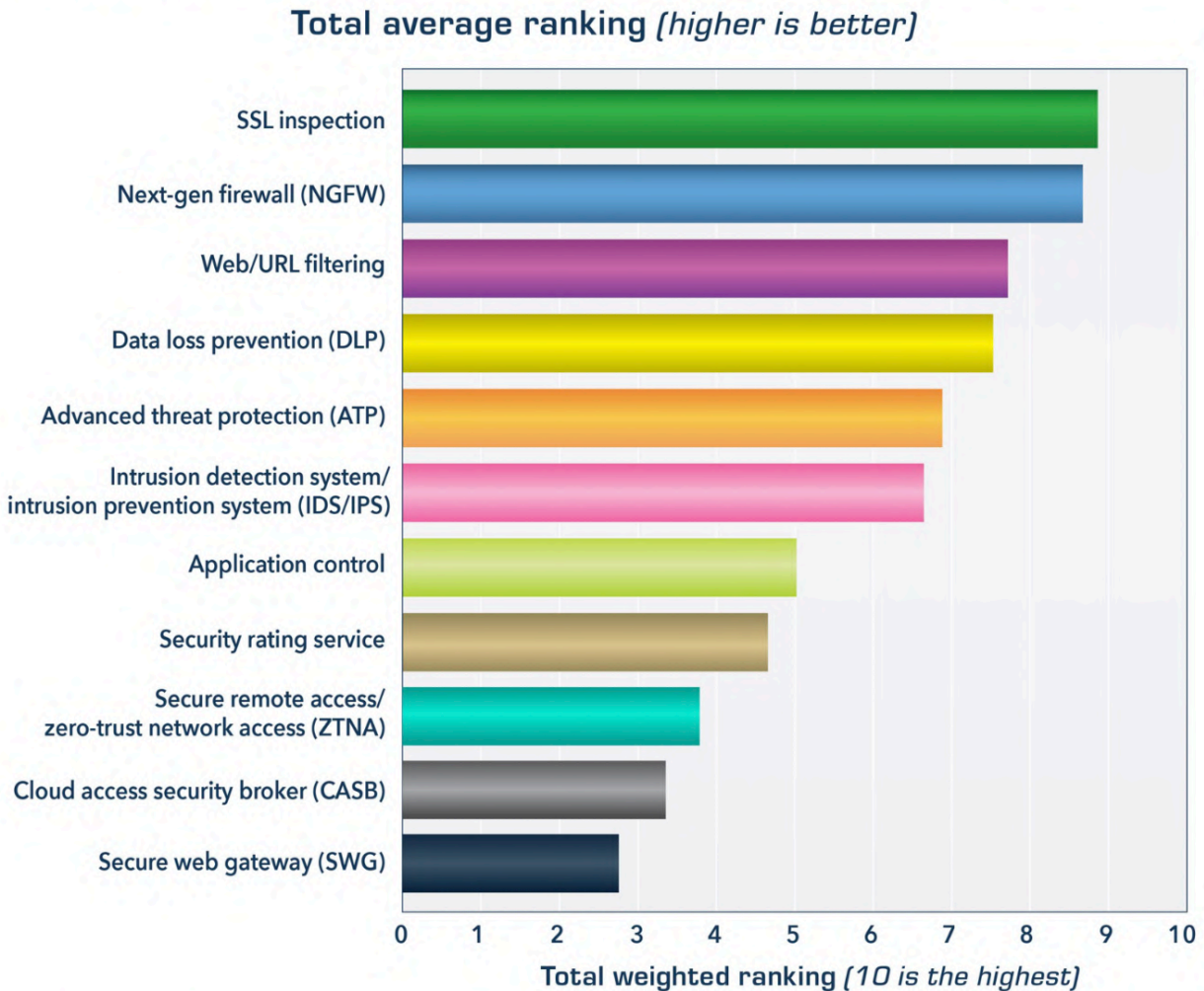
- Advanced threat protection (ATP), Application control, CASB, DLP, Intrusion detection system/intrusion prevention system (IDS/IPS), NGFW, SSL inspection, Secure web gateway (SWG), Security rating service, Web/URL filtering, ZTNA

Many of these features are included in SASE managed services and/or SD-WAN managed services. If not, customers will be asking for them soon. Managed service providers as well as SASE and SD-WAN vendors are busy developing their technology partnerships and acquisition strategies to deliver as many of these features as possible.

The reason that so many of these features are needed is driven by the new architecture melding the cloud and the Internet. Today, it's likely that most applications at some point touch the Internet or connect with other cloud applications over the Internet. It's necessary to have features such as SWGs, ZTNA, firewalls, and Web/URL filtering to make sure that end users and applications are talking to the right applications, rather than to bad actors or malicious software.

When we asked respondents to rank their top security features in order of preference, SSL inspection, NGFW, Web filtering, and DLP were the most highly ranked features they would like to see in a SASE managed service. These features all received an average ranking of more than 7 (10 represented the highest ranking). Next in line were ATP and IDS/IPS, with rankings between 6 and 7. You can see the full rankings on the next page.

Please rank the following secure access service edge (SASE) security features/functions in order of preference and need in a managed service:



FUTURIUM - Futurium SD-WAN Managed Services Survey 2022

Total responses = **118**

We will remark that even though some of these features ranked higher than others, nearly all of these features are becoming prominent in most SASE services. We were surprised by the lower CASB and ZTNA rankings, possibly because respondents see these as separate technologies already integrated through different channels or from a cloud-based offering they have already plugged into their network. Futurium believes that CASB and ZTNA functionality will be crucial to SASE and SD-WAN managed services. With all of these features, it likely won't be an either/or proposition, but rather an all-inclusive one. The questions is which functions are directly

integrated into a SASE/SD-WAN package vs. purchased or integrated from the cloud.

It's likely we'll see increased integration of all these functions over time.

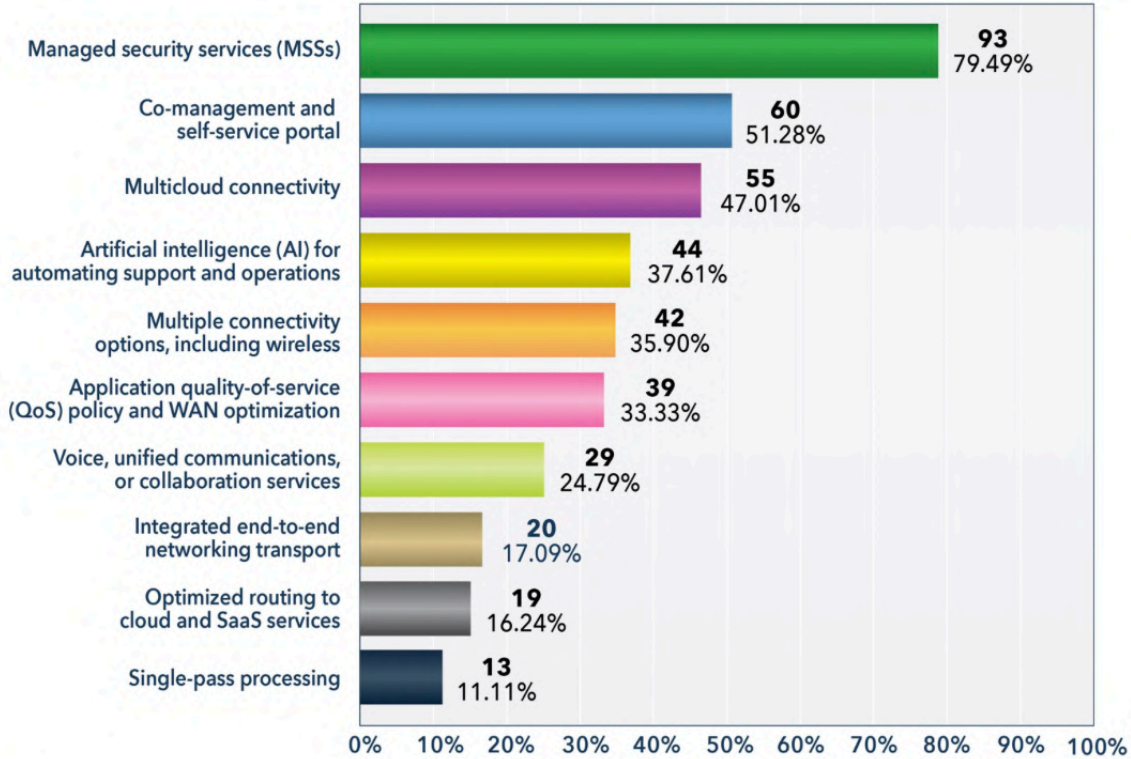
Service providers and cloud operators see this as a major opportunity to help solve the headaches of security. With hundreds of security tools on the market, many enterprise end users, especially small and medium businesses, don't have the time or resources to evaluate and integrate tools, so it makes sense that service providers can play this role by providing as many security tools and features as possible. SASE technology and services are positioned to do that.

Key Features of SD-WAN/SASE Managed Services

As the demand for new cloud-oriented security tools rises, driven in part by the remote-work boom, there is a new opportunity for service providers to offer value-added security services coupled with SD-WAN and SASE managed services. Even though cybersecurity needs dominate the demand for SASE services, other features such as management capabilities and multicloud connectivity will drive the adoption of SD-WAN and SASE managed services. In our 2021 Secure Edge and SASE Report, we established that SD-WAN technology has become a platform for orchestrating and managing a variety of security services linked to the network. In addition, our 2021 Multicloud Networking Report established that end users are finding challenges connecting traditional networks to secure networks in the cloud. Additional features, such as wireless network integration and artificial intelligence operations (AIOps), also come into the picture.

We asked end users about this broader set of features and benefits. The top need was managed security services, selected by 79% of respondents, followed by co-management and self-service portals, at 51% (respondents were allowed to choose more than one). The next most popular features included multicloud connectivity to cloud PoPs (47%), AIOps (38%), and multiple connectivity options including wireless (36%). Applications QoS (36%), unified communications support (25%), and integrated transport (17%) were also popular.

Please choose the most important features you would like to see in a secure access service edge (SASE) and/or SD-WAN managed service offering.
 [Please choose the top five.]

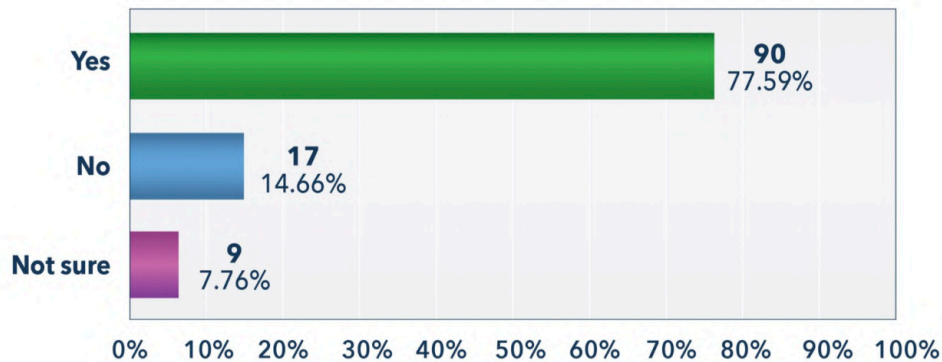


ANSWER CHOICES	RESPONSES
Managed security services (MSSs), such as firewalling, zero-trust network access (ZTNA), cloud-access securitybroker (CASB), intrusion detection, secure web gateway (SWG), and web filtering	79.49% 93
Co-management and self-service portal for ordering, services management, trouble ticketing, upgrades, reporting, and service assurance	51.28% 60
Multicloud connectivity through cloud PoPs or direct connect, or cloud edge services from AWS, Azure, Google, Oracle, Equinix, Megaport, etc.	47.01% 55
Artificial intelligence (AI) for automating support and operations	37.61% 44
Multiple connectivity options, including wireless	35.90% 42
Application quality-of-service (QoS) policy and WAN optimization	33.33% 39
Voice, unified communications, or collaboration services	24.79% 29
Integrated end-to-end networking transport	17.09% 20
Optimized routing to cloud and SaaS services	16.24% 19
Single-pass processing	11.11% 13
TOTAL	117

Customers interviewed by Futurium say that customer portals and co-management are attractive aspects of SD-WAN and SASE managed services, because these features give them more control over the network as well as better visibility into network operations. This is an area where SD-WAN/SASE managed services will be quickly differentiated. The capability to offer dynamic customer portals and management interfaces complete with analytics will be key to winning with new SD-WAN/SASE managed services.

When we asked enterprise end users if they considered co-management and a fully featured subscriber portal as key features of a managed service, 78% responded “Yes,” with only 15% responding “No.” Only 8% said they weren’t sure.

In considering an SD-WAN or managed secure access service edge (SASE) service, would you consider co-management and a fully featured subscriber portal offering to be key features of the services?



ANSWER CHOICES	RESPONSES	
Yes	77.59%	90
No	14.66%	17
Not sure	7.76%	9
TOTAL		116

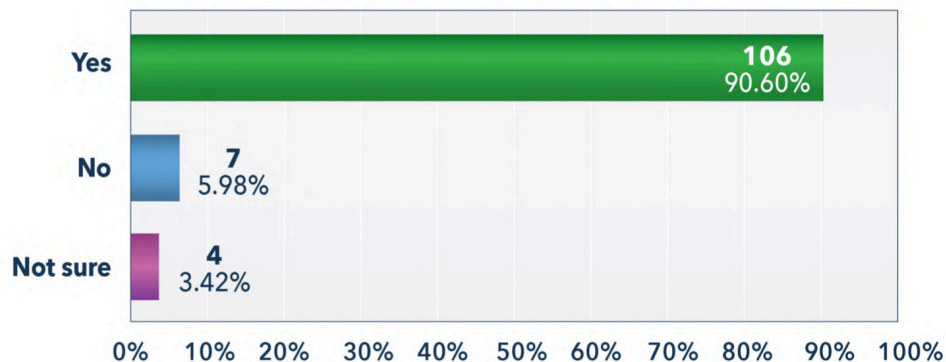
FUTURIUM - Futurium SD-WAN Managed Services Survey 2022

Total responses = **116**

Wireless integration, whether it be through enterprise WiFi networks, private LTE/5G wireless networks, or publicly available LTE/5G services, are in strong demand as part of SD-WAN/SASE managed services. When we asked if end users were likely to include solutions with software-

defined branch (SD-branch) features such as management for both wired and wireless connections, 91% of respondents said “Yes,” with a total of 117 responses.

In considering an SD-WAN managed service, are you more likely to select a solution that includes SD-branch features such as management for wired and wireless?



ANSWER CHOICES	RESPONSES	
Yes	90.60%	106
No	5.98%	7
Not sure	3.42%	4
TOTAL		117

FUTURIOM - Futuriom SD-WAN Managed Services Survey 2022

Total responses = **117**

Service Models and Differentiation

SD-WAN and SASE managed services come in many different flavors. There is also a wide range of providers offering different approaches.

Let’s take a look at some of the key approaches:

SD-WAN and SASE do-it-yourself (DIY): This is the model in which an organization implements the SD-WAN or SASE technology themselves, without the use of managed services. The organization negotiates a contract and services with an SD-WAN or SASE vendor and buys connectivity or network transport separately from a service provider. Many of the major SASE technology platform vendors, including Cisco, HPE, Juniper Networks, Nokia, Palo Alto Networks, Versa Networks, and VMware, provide SASE and SD-WAN technology to both

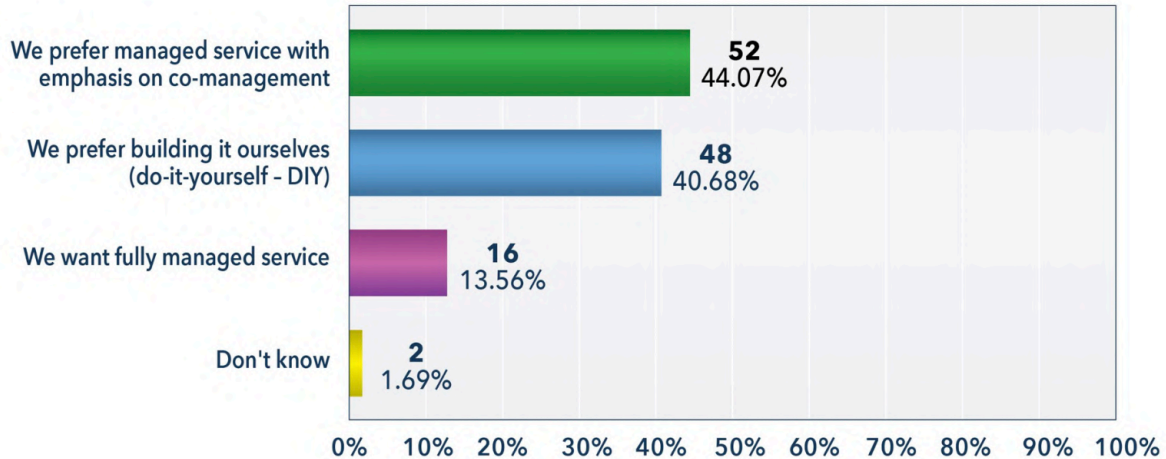
enterprises and service providers. In the DIY model, they supply the technology to the enterprise. Traditionally, the balance toward DIY vs. managed services has been about a 50/50 split, but we believe that SASE will drive more managed services business going forward.

SD-WAN and SASE via Independent MSP/cloud provider: Independent service providers such as Aryaka Networks and Cato Networks emerged as specialists in SD-WAN and have added a variety of SASE services. Both have also extended their global network reach, with Cato adding additional global PoPs and a wide range of security functionality. Aryaka Networks has recently bolstered its network offerings, adding Layer 3 underlay networking services than can be offered with SASE services, in addition to a sophisticated application profiling and management feature, AppAssure. Cloud security providers such as Cloudflare and Zscaler also offer their own cloud infrastructure for some SASE functionality such as FWaaS, SWG, and CASB, which can be integrated with other SASE and SD-WAN network services as a “best-of-breed” offering.

SD-WAN and SASE offered by traditional service provider: Large incumbent service providers such as AT&T, British Telecom, Deutsche Telekom, Tata Communications, Telefónica, Verizon, and Vodafone have been leaders in offering SASE and SD-WAN managed services. In this model, SD-WAN/SASE can be integrated with networking underlay services to give full control over SLAs. For full details on major service provider offerings and services, please see the next section: “Strategic SD-WAN/SASE Partnerships and Announcements.”

When we asked survey respondents whether they preferred a DIY vs. a managed services model, the managed services model came out with an edge. Of those surveyed, 44% said they preferred a managed service with co-management options, and 14% said they would like a fully managed service. If you add up the two of those, 58% of respondents preferred some sort of managed service, while 41% said they preferred DIY. Only 2% said they didn’t know.

If you were to evaluate SD-WAN or cloud security technology (or have adopted it already), does your organization have a preference for building the network and service yourself or using a managed service?



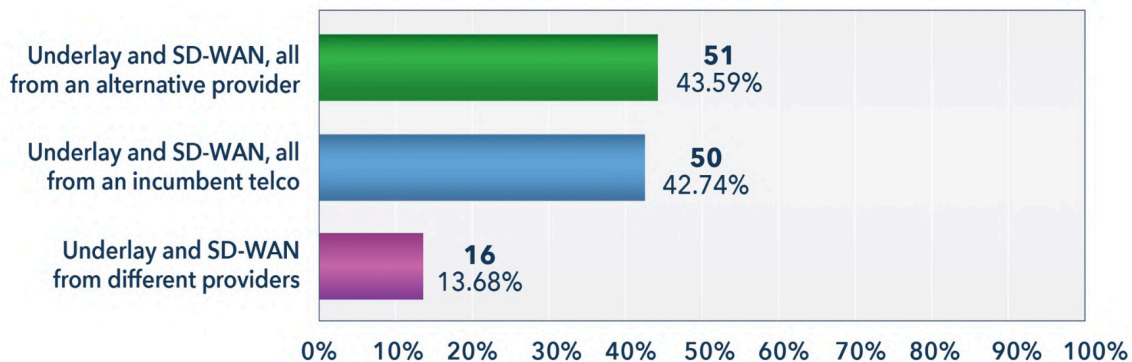
ANSWER CHOICES	RESPONSES	
We prefer managed service with emphasis on co-management	44.07%	52
We prefer building it ourselves (do-it-yourself - DIY)	40.68%	48
We want fully managed service	13.56%	16
Don't know	1.69%	2
TOTAL		118

FUTURIOM - Futurion SD-WAN Managed Services Survey 2022

Total responses = **118**

In terms of the type of provider desired for SD-WAN services, results were split quite evenly between alternative providers (44%) and incumbent service providers (43%). A minority, 14%, were looking to split the transport and SD-WAN/SASE functionality between different providers (numbers add to 101% because of rounding of decimals – see full results below). This makes sense, as the overall trend in SD-WAN and SASE is toward better network integration.

In considering an SD-WAN managed service, which type of provider would you prefer:



ANSWER CHOICES	RESPONSES	
Underlay and SD-WAN, all from an alternative provider	43.59%	51
Underlay and SD-WAN, all from an incumbent telco	42.74%	50
Underlay and SD-WAN from different providers	13.68%	16
TOTAL		117

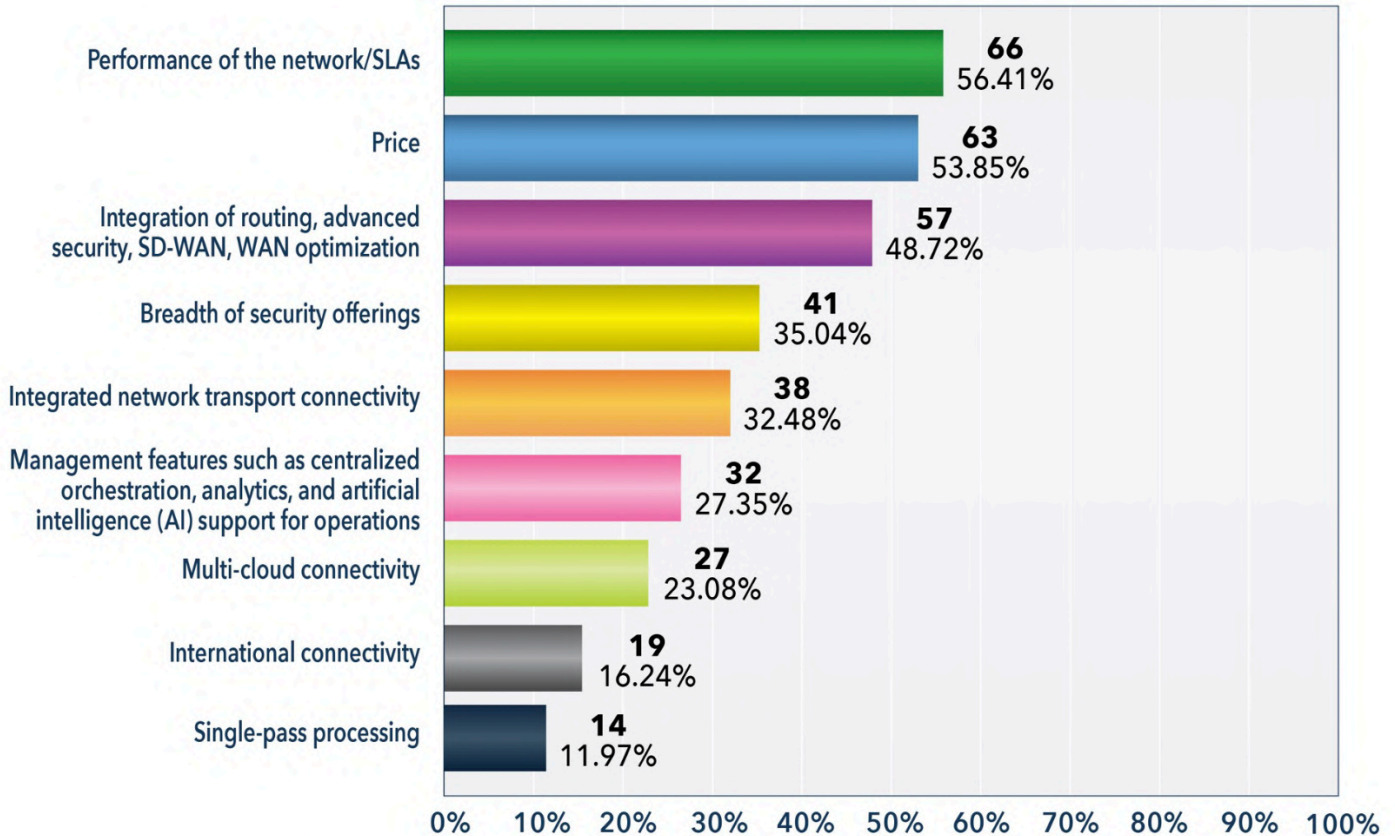
FUTURIOM - Futuriom SD-WAN Managed Services Survey 2022

Total responses = **117**

The key for all managed services will be how they are differentiated in the market. Our research indicates that most of the end users are looking for fully featured SASE and SD-WAN managed services that have co-management options, many security features, and some degree of automation. But the two top differentiators, according to survey responses, were the availability of SLAs (56%) and the price (54% - multiple responses allowed). The next most popular differentiators included routing and advanced security features (50%), breadth of security offerings (35%), and integrated network transport connectivity (32%). See the chart below for the full results.

If you were to consider a secure access service edge (SASE) or SD-WAN managed service, what would you consider the key differentiators?

(Please choose the top three.)



ANSWER CHOICES	RESPONSES
Performance of the network/SLAs	56.41% 66
Price	53.85% 63
Integration of routing, advanced security, SD-WAN, WAN optimization	48.72% 57
Breadth of security offerings	35.04% 41
Integrated network transport connectivity	32.48% 38
Management features such as centralized orchestration, analytics, and artificial intelligence (AI) support for operations	27.35% 32
Multi-cloud connectivity	23.08% 27
International connectivity	16.24% 19
Single-pass processing	11.97% 14
TOTAL RESPONDENTS	117

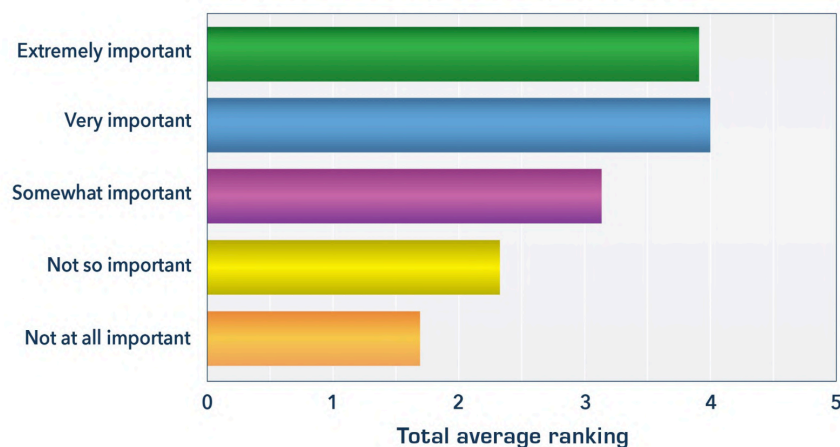
We were a little surprised by the low selection of “integrated network transport connectivity,” and “single-pass processing” but we have some theories on this. Integrated network transport connectivity would be required by SLAs, so it’s likely that customers are focused on the result (high performance), rather than the details of how it’s done. In other words, better integration of the transport network is necessary to deliver high-quality SLAs. As for single-pass processing, this is another feature that would deliver better performance, but it’s possible that some of the U.S.-based audience didn’t recognize the term.

Regardless of which specific technology is used to deliver results, it’s clear from the survey responses that a key differentiator will be the breadth and performance of the network. Over time, it’s going to be important that SD-WAN/SASE services are delivered in concert with high-quality global network coverage. This is important for many global Fortune 500 companies, which use SD-WAN and SASE in conjunction with the Internet as an alternative to more expensive leased lines and MPLS.

Similarly, when asked to rank the importance of global network connectivity for an SD-WAN managed service, the majority of respondents said it was either extremely important or very important. When the rankings were weighted, the scores looked like this (weighted ranking of 1 to 5, with 5 being extremely important):

How important is global network connectivity in an SD-WAN managed service?

Total average ranking (*higher is better*)



FUTURIUM - Futurium SD-WAN Managed Services Survey 2022

Total responses = 118

3. Key SD-WAN/SASE Strategic Partnerships and Announcements

There are many suppliers of SD-WAN/SASE technology solutions and services, which are consumed by both enterprises and service providers. A SD-WAN/SASE managed service can be built as a fully integrated solution, but in most cases, the service is a cooperative effort between a service provider and a vendor or several vendors.

Some of the leading SD-WAN and SASE vendors have platforms targeting enterprises for DIY as well as service providers for managed services. The technology providers that have the largest presence in providing a platform to service providers include Cisco, Fortinet, HPE (Aruba/Silver Peak), Juniper Networks, Nokia (Nuage), Versa Networks, and VMware, as demonstrated by the partnerships we have tracked in the grid below.

Traditional service providers such as AT&T, British Telecom, Deutsche Telekom, Telefónica, Telstra, Verizon, and Vodafone typically build SASE/SD-WAN services using the platforms from the vendors, though there is always integration work involved – for they may need to connect to separate Billing and Support Systems (BSS) or Operation Support Systems (OSS) from vendors such as Amdocs, Ericsson, Netcracker, and Nokia (the BSS and OSS leaders). Additional companies focus on automation to help streamline this process. For example, Iternal specializes in building purpose-built API and automation tools to help service providers automate the integration of SD-WAN/SASE platforms.

In addition, satellite providers such as Hughes and SES are building out their SD-WAN and SASE offerings and partnering with global service providers to provide satellite connectivity options.

Independent cloud-based providers such as Aryaka Networks, Cato Networks, and Cloudflare are building their own networks to compete with incumbent service providers. In the case of Cato and Cloudflare, they offer primarily over-the-top overlay solutions leveraging the Internet, with network underlay purchased separately. Aryaka is one of the few independent providers packaging overlay and underlay services with the expansion of its new FlexCore offerings announced last December.

Service providers of all stripes see the opportunity to deliver more value to their customers by integrating some combination of security and networking. Over time, Futuriom expects more of a trend toward the integration of value-added offerings, especially security portfolios. This includes managed service providers adopting new technology from both SD-WAN and SASE technology providers, as well as those providing combined SD-WAN/SASE solutions packages.

Recent Partnership and Launch Announcements

Over the past year, activity in the SD-WAN/SASE managed services market picked up, with many partnerships and new launches. Futuriom took a detailed look at the news announced over the past year. It's clear that partnerships and solution combinations are accelerating as new SASE/SD-WAN services come to market.

- Aryaka Networks in December of 2021 launched a major upgrade of its SASE and SD-WAN services using both L2 (Ethernet) and L3 (routed IP) infrastructure services. Called Aryaka FlexCore, this network enables users to build connections among their sites using their private core of choice, based on performance or cost considerations, as well as criticality of sites and applications. This includes the integration of SASE technologies Aryaka acquired with the purchase of Secucloud. It also added sophisticated app profiling and co-management with AppAssure.
- AT&T added Cisco to its SASE portfolio, launching a converged network and security management solution that offers centralized visibility and access control as well as the ability to optimize the network on a site-by-site basis. It is now available through AT&T Business.
- AT&T also added Palo Alto Networks' Prisma Access and Prisma SD-WAN (formerly CloudGenix) as a SASE platform that's fully managed by AT&T Cybersecurity.
- Recent AT&T research found that 75% of respondents either planned to or had partially deployed networking edge use cases. AT&T believes a key thrust of this is SASE managed services deployed at the network edge.

- Cato Networks in February added CASB functionality to its SASE services. As part of Cato SASE Cloud, Cato CASB is immediately available. Cato CASB has been built into the Cato Single Pass Cloud Engine (SPACE), which is foundational to the Cato SASE services. Cato SPACE provides a SASE architectural framework and enables global route optimization, WAN and cloud access acceleration, and security-as-a-service with next-generation firewall, secure web gateway, next-gen anti-malware, and intrusion prevention system (IPS) capabilities. CASB functionality is an important component of broader SASE solutions, and this is not an unexpected addition to the Cato portfolio.
- Charter Communications' Spectrum division has expanded its SD-WAN services into SASE, announcing a new solution called Enterprise Network Edge (ENE) that is enabled by partner Fortinet.
- Fortinet and Orange Business Services in early March announced a new strategic partnership to deploy Fortinet's full security and networking stack across Orange's global infrastructure.
- GTT Communications Inc., a leading global cloud networking provider to multinational clients, in March announced its new Secure Connect SASE offering, which is integrated with GTT Managed SD-WAN. GTT Secure Connect is provided with underlying technology from Palo Alto Networks, including CASB, SWG, ZTNA, and FWaaS capabilities.
- Juniper Networks in February launched Juniper Secure Edge, a FWaaS offering. Juniper Secure Edge, part of the company's growing SASE portfolio, delivers firewall services from the cloud.
- Rackspace Technology announced an expanded strategic partnership with Cloudflare, designed to offer expert services for Cloudflare Zero Trust. The partnership offers SASE managed services to enterprises, including Cloudflare Zero Trust through Rackspace Elastic Engineering for Security.
- Windstream recently teamed with Cato to offer Cato's SASE technology as part of Windstream's enterprise managed services.

- In the fall of 2021, Telefónica expanded its relationship with Fortinet to deliver SD-WAN and SASE services to Telefónica Tech customers.
- MetTel and VMware in February announced that MetTel will offer customers a managed SASE solution powered by VMware SASE. The solution will enable IT organizations to efficiently deliver cloud-based security, networking, and edge-compute services to applications running at the edge.
- Palo Alto Networks recently updated its Prisma SASE solution with a cloud-based management portal that delivers hierarchical multitenancy capability and uses granular role-based access control (RBAC). This provides service providers with the flexibility to manage multiple customers with different needs.
- VMware has announced that British Telecom (BT) is offering VMware SASE to its customers as a global managed service. The offering builds on BT and VMware's SD-WAN managed service, which was already in place. The new service is available from a global network of more than 150 points of presence deployed by VMware and SASE service provider partners.
- Tata Communications expanded its IZO SDWAN and Managed SASE services with more technology vendors now including Cisco (including Meraki), Versa Networks and Fortinet, Zscaler, and Palo Alto Prisma Access. It also developed a unique, thin-branch, premises-based solution based on technology from its NetFoundry subsidiary for use cases such as small retail stores and work-from-home users
- Telefónica has expanded its managed security offerings through its security service edge (SSE) platform powered by Zscaler. Zscaler provides cloud-based security services via its 150 PoPs, while Telefónica Tech manages the product and provides support to end customers.
- Telefónica also expanded its relationship with longtime security partner Fortinet to deliver SD-WAN and SASE functionality to its Telefónica Tech customers.
- According to Telefónica Tech, the pandemic has made hybrid and "cloud-centric" work models the new normal. Telefónica Tech's new flexWAN by Fortinet offering combines the security vendor's SD-WAN and SASE security capabilities into a single managed service.

- Verizon last year unveiled fully managed SASE services based on Versa Networks' SD-WAN and Zscaler's cloud-based zero-trust network access and secure web gateway.
- Verizon recently added VMware to its roster of SD-WAN suppliers.
- A recent survey of managed service providers by channel publication CRN found that most MSPs cited cybersecurity as the driving force of managed services. The list of specific security services included security operations center (SOC), security information and event management (SIEM), SASE, managed detection and response, extended detection and response, managed threat response, zero trust security, next-generation anti-virus protection, network access control, and incident remediation.
- Windstream Enterprise last October added VMware's SASE platform to its managed service portfolio. The partnership combines VMware's Velocloud SD-WAN and SASE products with the Arkansas-based managed service provider's Cloud Core backbone network, which stretches more than 170,000 miles and connects nearly every major metro in the U.S.

A Look at the Leading SD-WAN/SASE Managed Services Partnerships

SD-WAN Managed Services Leader	Notable Technology Partners	Strategic Approach
Aryaka	Amazon Web Services (AWS), Microsoft (Azure, Office365), Check Point Software, Cisco (Webex), Oracle Cloud, Google Cloud, Salesforce, 8x8, Zoom, RingCentral, Palo Alto Networks, Radware, Symantec, Zscaler	Aryaka, a leading provider of managed SD-WAN, has expanded into the managed SASE arena. The company recognizes that enterprises require both connectivity and cloud-edge security coupled with best-in-class lifecycle services management. Connectivity offers include a premium global L2-over-fiber service with performance guarantees and a white-glove service experience. This is now coupled with an L3 fully managed enhanced Internet service that delivers predictable performance at a much lower price point. A new AppAssure capability delivers better observability and control vs traditional overlay solutions and includes rich co-management. The company's new SASE offering leverages the service sophistication of Aryaka's global services PoP footprint, including application optimization and automated multicloud connectivity.
AT&T	Cisco, Fortinet, HPE (Aruba/Silver Peak), Palo Alto Networks, VMware	AT&T offers many different flavors of managed services targeting application-aware dynamic routing and integration of legacy networks including MPLS, LTE, and Internet. The various flavors are offered both via AT&T's traditional network including SD-WAN services based on its FlexWare platform as well as services using Cisco, HPE, VMware's VeloCloud. It has also launched a wide variety of new SASE managed services through its AT&T Cybersecurity division, adding products from Cisco and Fortinet in the last year.
British Telecom	Cisco, Fortinet, Nuage Networks, Infovista	BT offers several tiers of managed services that include services such as Layer 3 MPLS, IP VPN, DIA, Layer 2 Ethernet VPN, and Ethernet private lines. It also facilitates direct connections to the major cloud service providers using technology platforms from its partners.
Colt	Versa Networks	Colt has been one of the more aggressive moves in the SD-WAN market and recently expanded its program with the launch of a new universal customer premises equipment (uCPE). Colt also provides a sophisticated self-service portal. It recently partnered with Versa to offer the Versa platform to customers.

Comcast	Comcast doesn't specifically disclose all of its SD-WAN vendors, but it has integrated technology from Versa Networks and Fortinet.	Comcast Business launched its ActiveCore SDN platform in 2017, which is a carrier-class, cloud-based, fully orchestrated platform with a multitenant architecture that supports multiple VNFs (e.g. SD-WAN, Managed Router, Advanced Security). Comcast Business also designs and deploys managed Fortinet, Cisco Meraki, and Cisco Viptela SD-WAN solutions, particularly for large enterprises. Comcast Business added Advanced Security solutions to its portfolio with Versa and Palo Alto in 2020. In 2021, Comcast Business completed its acquisition of Masergy.
Deutsche Telekom/ T-Systems	Aryaka Networks, Juniper Networks, HPE (Aruba/Silver Peak), Versa Networks	Deutsche Telekom (DT) for many years has partnered on SD-WAN services with Versa Networks. The service includes integrated routing, application prioritization, security features, analytics, and monitoring for insight into datacenter and cloud traffic. T-Systems, a DT subsidiary, also has a range of SD-WAN services using Aryaka Networks, Juniper, and HPE (Aruba/Silver Peak) SD-WAN platforms.
Hughes	Fortinet, VMware	Hughes provides the HughesON Managed SD-WAN portfolio for enterprise customers, which is an end-to-end turnkey managed services network that can leverage the Hughes global satellite network. Features include dynamic load sharing across multiple connections for better traffic flow, 24/7 WAN management, zero-touch configuration, and Web-based management.
Lumen Technology (formerly CenturyLink)	Cisco, Versa Networks	Lumen offers a variety of SD-WAN managed services with multiple connectivity options that it says reach 100 countries. Offerings include options for dedicated internet, broadband aggregation, and 4G LTE. Lumen offers customers a choice between the Cisco and Versa platforms. Services can run from the cloud or on a uCPE.

Masergy	Fortinet, HPE (Aruba/Silver Peak)	Masergy SASE solutions converge global software-defined networking with advanced security. Masergy integrates the industry's best security features -- qualified by Leader or Visionary status in the Gartner Magic Quadrant -- with AI-enhanced global network and 24/7 MDR into a single unified service. Masergy delivers both cloud-based firewalls and hardware-based firewalls at the network edge, giving it unique scalability and performance advantages for enterprises. Masergy provides 24/7 continuous monitoring with live incident response from cybersecurity experts in global operations centers on three continents.
NTT	Cisco, HPE (Aruba/Silver Peak)	NTT offers a broad SD-WAN Service Portfolio with solutions available in 190 countries. Services include SD-WAN features such as application prioritization, firewalling, advanced security features including malware and IPS, integrated path routing, and hybrid SD-WAN services. The platform is also transport independent and can use Ethernet, Internet, broadband, fixed wireless, and 4G/LTE, as well as connectivity to NTT's 75+ global Local Cloud Centers (LCCs)
Orange	Cisco, Fortinet, Juniper Networks, Nuage Networks (Nokia)	Orange and Orange Business Services work with several partners to deliver a variety of SD-WAN services that the carrier calls Flexible SD-WAN. Features and services include enhanced application performance, simplified management, best-of-breed security, and native cloud connectivity.
Tata Communications	Cisco, Versa Network, Fortinet, Palo Alto Prisma Access, Zscaler	Tata Communications is one of the largest global providers of managed SD-WAN services, enabling enterprise secure network transformation. Its IZO SDWAN offers end-to-end design, delivery and management based on best-fit technology with our converged SD-WAN, network security and SASE solution. It also leverages its IZO Internet WAN predictable internet in over 150 countries to ensure end-to-end performance.
Telefonica	Fortinet, flexiWAN, Nuage Networks	SD-WAN by Telefónica enables the remote management of global enterprise networks. It includes a fully managed and centralized solution. Late in 202, the carrier started testing technology from flexiWAN on white-box customer premises equipment (CPE) for businesses that require throughputs ranging from 50 Mbit/s to 1 Gbit/s of encrypted traffic. Additional partners have included Fortinet and Nuage Networks.

Telstra	Cisco, VMware	Telstra offers managed SD-WAN that it calls "Adaptive SD-WAN" that is transport agnostic and includes enhanced secure connectivity, application-aware routing, fixed wireless services, and central orchestration. Telstra's primary partners are Cisco and VMware.
Verizon	Cisco, HPE (Aruba/Silver Peak), Versa Networks	Verizon provides several flavors of SD-WAN using technology from several vendors. Recently, it has emphasized the co-management trend by launching a Co-Management Service that employs an intent-based networking (IBN) management platform to control policy changes.
Vodafone	Cisco, Juniper Networks, VMware	As a major global CSP with services in Europe, Africa, and the APAC region, Vodafone offers managed SD-WAN services from Juniper Networks, Cisco, and VMware from on-premises devices and hosts 16 SD-WAN gateways. Vodafone has touted automation and plans to use AI to enhance operational capabilities.
Windstream	Fortinet, VMware	Windstream is considered a leading provider of SD-WAN services and recently branched out to provide a wide variety of SASE technologies, including virtual NGFW. Its primary partners are Fortinet and VMware. Under its SD-WAN Concierge services, it also offers managed security and unified communications.