ISG Provider Lens™

Networks – Software Defined Solutions and Services

Quadrant Report

A research report comparing provider strengths, challenges and competitive differentiators

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orange™ Business Services

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About this Report

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The research and analysis presented in this report includes research from the ISG Provider Lens™ program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers and analysis of publicly available market information from multiple sources. The data collected for this report represents information that ISG believes to be current as of March 2021, for providers who actively participated as well as for providers who did not. ISG recognizes that many mergers and acquisitions have taken place since that time, but those changes are not reflected in this report.

All revenue references are in U.S. dollars ($US) unless noted.

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ISG Provider Lens™

ISG Provider Lens™

ISG Provider Lens™ delivers leading-edge and actionable research studies, reports and consulting services focused on technology and service providers' strengths and weaknesses and how they are positioned relative to their peers in the market. These reports provide influential insights accessed by our large pool of advisors who are actively advising outsourcing deals as well as large numbers of ISG enterprise clients who are potential outsourcers.

For more information about our studies, please email ISGLens@isg-one.com, call +49 (0) 561-50697537, or visit ISG Provider Lens™ under ISG Provider Lens™.

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EXECUTIVE SUMMARY

Networks and software-defined solutions and services encompass many technological topics, business coverage areas, organizational functions, and business processes and methods. In addition, these are closely tied to the overall digital business transformation and cloudification trends of enterprises globally. This ISG Provider Lens™ study examines different kinds of network offerings related to software-defined networking in the U.S. These include SD-WAN (managed, co-managed and non-managed) and associated core and mobility service offerings related to these segments, transformation services, as well as the increasingly crucial edge technologies and enterprise 5G solutions. This study considers the changing market requirements and provides a consistent market overview of the segments. It also gives concrete decision-making support to help user organizations evaluate and assess the offerings and performance of providers.

Enterprises are evaluating various means to increase their agility, flexibility, competitiveness, delivery structures, and remote working and continuity practices, in particular due to the impacts incurred during the COVID-19 pandemic globally in 2020. A large part of this challenge is not only associated with technology use, but also with the transformation of established processes and traditional management practices. Enterprises are also analyzing how companies can achieve a sufficient degree of flexibility, speed and collaboration internally and across and outside of enterprise boundaries while being able to master their challenges to deliver benefits to themselves and their (ever more mobile) customers and users, including at the edge of the business and edge of the traditional network.

Enterprise agility goes far beyond traditional network abilities and provisioning capabilities, mainly in a constantly changing competitive environment. This adjustment and the speed at which it is realized are relevant and critical for the whole enterprise organization and value stream. CEOs and chief technology officers (CTOs) must understand that software defined networking works together with cloudification, intelligent edge and mobility strategies, along with digital business transformation areas such as artificial intelligence (AI), Internet of Things (IoT), automation and collaboration. These collectively have a high influence on agility, flexibility, productivity and profitability.

In the U.S., some of the primary factors driving these rapid changes in enterprises are as follows:

Increasing flexibility and agility: Enterprises are increasingly focusing on improving the integration, automation, orchestration and management of network resources and processes. This has evolved to encompass software-defined networking in a wider sense. This trend is being driven by enterprises' desire to seamlessly add applications and network resources to meet business and user goals more efficiently and securely without creating silos or depending on vendors. During the COVID-19 pandemic, this has been of high importance, especially in areas concerning the supply chain and logistics, as well as customer reach and mobile workforce or remote working. This is often expressed by the business itself as "increasing flexibility and agility."

Support for cloud and multi-cloud migrations: Enterprises are increasingly focused on migrating their IT and network operations into the cloud. SD networks have been proven to assist with this by reducing complexity and enabling a reduced risk migration to single or multi-cloud environments for enterprises.

Increasing security across networks and cloud based networks: Network security has become a major point of concern across business units and enterprises, in line with the changes within modern networks and the expectations of full security from core to edge in all networks. Security as a service (SecaaS) or enhanced DIY security is a rapidly growing area, reflecting the vital importance of network security in a cloud based network. In the near future, integrated secure enterprise networks (ISEN) also described as secure access, secure edge (SASE), are being deployed based strongly, but not exclusively, on advanced security aspects across all areas of modern integrated networks.

Increasing customer satisfaction while boosting sales: The ability to respond quickly and seamlessly to customer enquiries and rapidly provide (often automatically) new services via SD networks helps elevate the client experience, boost sales and retain customers. This has become crucial to many enterprises, especially during the COVID-19 pandemic, as they switch from traditional customer reach to advanced digital channels.

Reducing costs and improving usage efficiency: Enterprises can improve network utilization efficiency while reducing network usage costs even beyond the savings achieved by adopting a traditional managed WAN strategy. This is particularly relevant with the explosion of data usage in mobile devices, often in areas that are not business critical. Traffic can be routed over lower cost connections and at reduced reliability and quality levels automatically via SD pathways without human intervention. This can be achieved by using automation-based methods and potentially multiple underlay and overlay networks.

Simplifying management and planning of networks and integrating completely with other enterprise IT initiatives: By moving its control layer to the cloud, SD-WAN can operate and be managed in real time via a one-touch or single-pane-of-glass fully integrated management and reporting tool, coupled with the use of policy and automation. This facilitates the flow and integration with other applications and IT services, as well as the application of policy-based management services together with service-level agreement/key performance indicator (SLA/KPI)-based rules.

Forming a basis for new or near-term innovative technologies and solutions: Digital business transformation and many new innovations (such as intent-based networks, artificial intelligence (AI)/machine learning (ML)-driven solutions, services and systems, rapid hot spot provisioning and data flow allowance, self-healing networks, intelligent edge and edge computing, etc.) require the flexibility and abilities of SD networks to be utilized fully and drive solutions to their full potential.

These factors have been driving significant changes to networks and their operations over the past four years, and many network transformations, which are already in progress, or planned transformations have been accelerated during 2020 due to the COVID-19 impacts on businesses. Most telecommunication service suppliers and network service suppliers, as well as systems integrators, have an impressive portfolio of SD-WAN and other SDN solutions. These range from partial or function-specific solutions to complete end-to-end SD-WAN solutions, with many solutions differing based on the enterprise size, scope of offering, industry type, or desired reach and interaction between enterprises and customers or end users. Others have introduced other advanced SDN-based technological innovations such as intent-based networks that use AI/ML interactions and control, or edge intelligence and computing solutions, with SD-LAN or SD-Wireless or Wireless and Mobile LAN (SD-WLAN or SD-WMLAN), sometimes coupled with enterprise 4G/5G mobility solutions inherently in use. This is further driven by the transition of many enterprises

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to cloud and multi-cloud environments, which are well supported by SDN from enterprise core to edge. In addition, further change is apparent with the early stages of pilots and implementation around fully integrated secure enterprise network (ISEN) environments (SASE), which during 2021, based on actual feedback from the providers analyzed, are starting to consider overall networking deployments in the 5 to 8 percent range for some of the providers, with strong growth forecasted over the next 12 to 24 months.

Within this report, ISG divides the market into the following six quadrants and analyzes the specific regional market and identifies those providers that are among the current market leaders and the strongest competitors of these leaders.

Managed (SD) WAN Services

Many enterprises consider managed WAN services as an approach to outsource IT functions and purchase them along with consulting and professional services to assess, design, implement and operate their enterprise networks. Managed SD-WAN provides the benefits of SDN technology over traditional hardware-based networking. It is an overlay architecture that provides a networking foundation, which is much easier to manage than legacy WANs. It essentially moves the control layer to the cloud and, in the process, centralizes and simplifies network management. This overlay design abstracts software from hardware, enabling network virtualization and making the network more elastic. Suppliers have been increasingly active as managed service providers, supplying complete managed SD-WAN solutions, including hybrid MPLS/IP or MPLS/SDN or SDN through cloud to edge, to enterprises and offering them as white-label services that telco providers or integrators offer to clients as part of broader strategic implementations.

In the U.S., AT&T, GTT, IBM, Lumen, NTT, Masergy, Orange Business Services, T-Mobile, Verizon, Wipro are considered as Leaders within this category, and Microland is the Rising Star.

Transformation Services (Consulting and Implementation)

Becoming highly competitive using SD networking and associated strategies, technologies, methods and processes requires aligning on a vision for the future state, creating a business case for change and agreeing on a roadmap to reach the target, as well as defining, planning and leveraging leading technologies to dramatically transform enterprise network operations and customer experiences while streamlining processes to ensure lasting change. In-depth knowledge of both the enterprise and its industry, as well as the technologies and solution capabilities, is mandatory.

Transformation services help companies formulate their strategy and implement it to enhance their performance through SD networking. Advisors analyze the company's business structure and intents, network technologies and infrastructure, processes, methods, people and organization, to both strengthen the organization's short-term performance and plan the transformation of the network to deliver and maintain sustainable long-term improvement.

Transformation service providers, from initial advisory to full or partial solution implementation and operations, have become mature in this field, leveraging successful use cases, integrated designs, predefined processes and technologies. They can also advise on suitable partner products and services as well as implementation possibilities. Suppliers have been active in directly selling SD-WAN advisory, planning, transition and

implementation solutions to enterprises for their DIY (enterprises' own and non-managed) or co-managed deployments and are increasingly partnering with licensed telco/service providers for their delivery packages in this space.

In the U.S., Apcela, AT&T, IBM, Juniper, Lumen, Orange Business Services, Verizon and Wipro are the Leaders in this category, and Microland is the Rising Star.

WAN Equipment and Service Suppliers (DIY)

SD-WAN is still one of the fastest-growing areas of technology and innovation, allowing enterprises to roll out innovative services easily and cost effectively. SD-WAN eliminates vendor lock-in and associated risks, unlike the earlier hardware-based networks. It offers easy enablement of cloud-based and one-click management as well as potential cost reduction, often requiring fewer technical staff for its operation. SD-WAN has proven itself essential for enterprises that are already exploring intent-based networking (AI/ML-based) or are keen on implementing this in the near to mid-term. However, many enterprises are not willing to relinquish the management and control of their networks to third parties or even buy managed SD-WAN solutions, as they prefer to keep such activities in house. For these enterprises, many providers have been directly selling SD-WAN solutions for their DIY (enterprise owned and non-managed) implementations. They are also increasingly partnering with licensed telco/service providers to offer delivery packages in this space and to allow co-management of solutions, where some aspects of the enterprise solution is retained under management by the enterprise, while some is given out to the provider to be dealt with as a fully managed service.

In this quadrant, Apcela, AT&T, Cisco, IBM, Juniper, Orange Business Services, Verizon and VMware are considered the Leaders, Wipro is the Rising Star.

Technology and Service Suppliers (Core – 4G/5G)

SD technology is an approach to networking that eliminates the complex and static nature of legacy distributed network architectures by using a standards-based software abstraction layer between the network control plane and underlying data forwarding plane in both physical and virtual devices. SD technology enables improvements in network agility and automation while substantially reducing the cost of network operations when compared to traditional network deployments. Adopting an industry standard data plane abstraction protocol allows the use of any type and brand of data plane devices, as all the underlying network hardware is addressable through a common abstraction protocol. These are considered as core network functions. Additionally, all mobile and wireless components may be managed and dealt with in the same manner as core and SD-WAN components. The software-defined capabilities cover branch and edge functionalities and associated Wi-Fi networks, access points (APs), and edge to 4G/5G connectivity technologies.

This section covers all vendors of SD core and mobile/wireless services that are directly purchased by enterprises or service providers for specific client projects. It also includes suppliers offering solutions that can be integrated into an enterprise-wide SD networking strategy overarching from the core through to the edge (or beyond with 4G/5G mobile working).

In this quadrant, Apcela, AT&T, Cato Networks, Cisco, HCL, IBM, Juniper, Verizon and Wipro are the Leaders, and Microland is the Rising Star.

Edge Technologies and Services

Edge technologies, services and computing are current trends in the Internet-of-Things (IoT and Industrial Internet-of-Things (IIoT) space. With the localized processing of data, security and privacy are improved because any breach can be managed locally and are not, therefore, passed onto the WAN or cloud or back to the central enterprise systems to defend against. In IoT edge computing and networking, the data from various connected devices of the IoT ecosystem is typically collected in a local device, analyzed on the network, and then transferred to the central data center or cloud. As the number of connected devices increases exponentially, the data volume generated is multifold. Interim processing is, thus, required to ensure cost reduction and increased efficiency. This, in turn, places great importance on efficient and software-driven edge capability networks and connectivity capabilities.

Edge components may be managed and dealt with in the same manner as core and SD-WAN components, with software-defined capabilities to include the branch and edge functionalities, as well as all customer premises equipment, including universal or virtual CPE (uCPE or vCPE), and associated software-defined mobile networks (SDMNs) and software-defined local area networks (SD-LANs), that include both wireless (SD-WLAN) or mobile (SD-WMLAN), as well as IoT or IIoT sensors and devices or control/security devices.

Market leaders in this quadrant include Apcela, AT&T, Extreme Networks, HPE Aruba, Orange Business Services, T-Mobile and Verizon, and Wipro is considered a Rising Star.

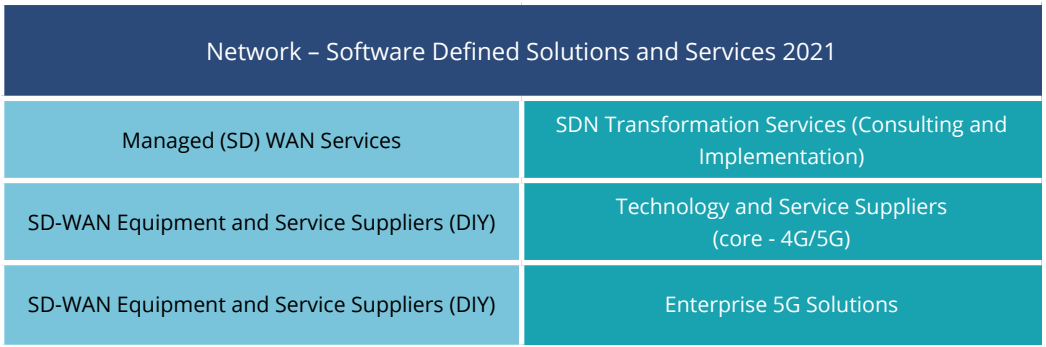
Enterprise 5G Solutions

Fifth-generation mobile networks or wireless systems (commonly known as 5G) are the next telecommunications standards after the current 4G/long-term evolution (LTE) technology and are designed to provide higher capacity than the current 4G/LTE, allowing a greater density (tens to hundreds of times more) of mobile broadband users or devices connected at higher transfer speeds and supporting more device-to-device, reliable and massive machine communications. It is also aimed at lower latency and battery consumption than 4G equipment. This segment covers specifically private 5G referring to 5G deployments in use on campus (5G Campus Network) or other land or building areas, which are generally not open to the public without specific access being granted. Private 5G is targeted at flexible connectivity, mobile high-speed data and the IoT. It will be connected to a local control and management system, which may, in turn, be integrated within the overall enterprise network and management systems if overarching integrated control and management is required. It may encompass allowing access to the public present within a 5G Campus by either Wi-Fi or other wireless connection, or by 5G GSMA data connection used as a LAN.

Market leaders in this quadrant include Apcela, AT&T, Ericsson, HPE Aruba, Nokia Networks, Orange Business Services and Verizon, and Wipro is the Rising Star.

Introduction

Simplified illustration



Source: ISG 2021

Definition

This ISG Provider Lens™ study examines the different kinds of global network offerings related to SDN. These include SD-WAN, (consulting, implementation and managed services) SD-WAN (DIY), and equipment and service supply to enterprises for own operation; it also includes core-to-edge/-branch providers, including those delivering via mobile and 4G/5G technologies and the service offerings related to those segments. The study additionally includes edge technologies and services, including IoT, u/vCPE and SD-LAN. It also focuses on the rapidly growing area of enterprise 5G solutions being offered within private and campus network environments.

Existing MPLS managed WAN services have been evolving over the last few years toward SD-WAN and hybrid plus cloud-enabled networks from their previous dominant position, so that these new network forms deliver the majority of revenues generated and most of the customer deployments by telcos and service providers worldwide. This, however, is still an ongoing process. SDN segments are evolving and rapidly increasing in terms of market share and presence, as are several other

Definition (cont.)

related network services such as cloudification, hybrid networks (MPLS/IP), mobility delivered (LTE/4G/5G) enterprise services, (including beyond enterprise network edge), and branch/edge technologies and services, including software-defined local area networks (SD-LAN) and Universal/Virtual customer premises equipment (u/vCPE), with some movement already visible toward the fully integrated and secure enterprise network (SASE). This is driven significantly by the ongoing digital transformation of business processes, organizations and business models to meet the requirements of a dynamic, globalized world in real time, (including issues brought about by changes due to the global pandemic), by increasing agility and flexibility, boosting customer experience (CX) and opportunity, enhancing network security, strengthening competitive positioning for the enterprise, and reducing overall network costs for services delivered.

ISG sets out to deliver a comprehensive but defensible research program with clear and extensive evaluation criteria, covering the developments and deliverables of service providers and equipment suppliers in this dynamic marketplace. This study accounts for changing market requirements and provides a consistent market overview for the segments, along with concrete decision-making support to help user organizations evaluate and assess the offerings and performance of providers.

The ISG Provider Lens™ study offers IT decision makers:

- Transparency over the strengths and weaknesses of relevant providers;
- Differentiated positioning of providers by segments;
- A perspective on several markets, including Australia, Germany, the U.K., the U.S. and the Nordics.

Our study serves as an important decision-making basis for positioning, key relationship and go-to-market considerations. ISG advisors and enterprise clients also use information from these reports to evaluate their current vendor relationships and potential new engagements.

Definition (cont.)

Scope of the Report

As part of this ISG Provider Lens™ quadrant study, we are introducing the following six quadrants under Network — Software Defined Solutions and Services 2021.

Scope of the Study – Quadrant and Geography Coverage

	USA	Germany	Nordics	UK	Australia
Managed SD WAN Services	✓	✓	✓	✓	✓
Transformation Services (Consulting and Implementation)	✓	✓	✓	✓	✓
SD-WAN Equipment and Service Suppliers (DIY)	✓	✓	✓	✓	✓
Technology and Service Suppliers (core – 4G/5G)	✓	✓	✓	✓	✓
Edge Technologies and Services	✓	✓	✓	✓	✓
Enterprise 5G Solutions	✓	✓	✓	✓	✓

Provider Classifications

The provider position reflects the suitability of IT providers for a defined market segment (quadrant). Without further additions, the position always applies to all company sizes, classes and industries. In case the IT service requirements from enterprise customers differ and the spectrum of IT providers operating in the local market is sufficiently wide, a further differentiation of the IT providers by performance is made according to the target group for products and services. In doing so, ISG either considers the industry requirements or the number of employees, as well as the corporate structures of customers and positions IT providers according to their focus area. As a result, ISG differentiates them, if necessary, into two client target groups that are defined as follows:

- **Midmarket**: Companies with 100 to 4,999 employees or revenues between US$20 million and US$999 million with central headquarters in the respective country, usually privately owned.
- **Large Accounts**: Multinational companies with more than 5,000 employees or revenue above US$1 billion, with activities worldwide and globally distributed decision-making structures.

Provider Classifications

The ISG Provider Lens™ quadrants are created using an evaluation matrix containing four segments (Leader, Product & Market Challenger and Contender), and the providers are positioned accordingly.

Leader

The Leaders among the vendors/providers have a highly attractive product and service offering and a very strong market and competitive position; they fulfill all requirements for successful market cultivation. They can be regarded as opinion leaders, providing strategic impulses to the market. They also ensure innovative strength and stability.

Product Challenger

The Product Challengers offer a product and service portfolio that provides an above-average coverage of corporate requirements, but are not able to provide the same resources and strengths as the Leaders regarding the individual market cultivation categories. Often, this is due to the respective vendor's size or weak footprint within the respective target segment.

Market Challenger

Market Challengers are also very competitive, but there is still significant portfolio potential and they clearly fall behind the Leaders. Often, the Market Challengers are established vendors that are somewhat slow to address new trends due to their size and company structure, and therefore have some potential to optimize their portfolio and increase their attractiveness.

Contender

Contenders still lack mature products and services or sufficient depth and breadth in their offering, but also show some strengths and improvement potential in their market cultivation efforts. These vendors are often generalists or niche players.

Provider Classifications (cont.)

Each ISG Provider Lens™ quadrant may include a service provider(s) which ISG believes has strong potential to move into the Leader quadrant. This type of provider can be classified as a Rising Star. Number of providers in each quadrant: ISG rates and positions the most relevant providers according to the scope of the report for each quadrant and limits the maximum of providers per quadrant to 25 (exceptions are possible).

Rising Star

Companies that receive the Rising Star award have a promising portfolio or the market experience to become a leader, including the required roadmap and adequate focus on key market trends and customer requirements. Rising Stars also have excellent management and understanding of the local market. This award is only given to vendors or service providers that have made significant progress toward their goals in the last 12 months and are expected to reach the Leader quadrant within the next 12-24 months due to their above-average impact and strength for innovation.

Not In

The service provider or vendor was not included in this quadrant. There might be one or several reasons why this designation is applied: ISG could not obtain enough information to position the company; the company does not provide the relevant service or solution as defined for each quadrant of a study; or the company did not qualify due to market share, revenue, delivery capacity, number of customers or other metrics of scale to be directly compared with other providers in the quadrant. Omission from the quadrant does not imply that the service provider or vendor does not offer this service or solution, or confer any other meaning.

Managed (SD) WAN Services – U.S.

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 1 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Altiostar	Not In	Not In	Not In	Not In	Not In	Market Challenger
Apcela	Product Challenger	Leader	Leader	Leader	Leader	Leader
Arista	Not In	Not In	Contender	Contender	Not In	Not In
Aryaka	Product Challenger	Not In	Market Challenger	Not In	Not In	Not In
AT&T	Leader	Leader	Leader	Leader	Leader	Leader
Avantec	Not In	Not In	Not In	Not In	Not In	Market Challenger
BT	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
Cancom	Not In	Not In	Contender	Not In	Product Challenger	Not In
Cato Networks	Not In	Product Challenger	Product Challenger	Leader	Product Challenger	Not In
Centrify	Not In	Not In	Not In	Contender	Not In	Not In
Cisco	Not In	Not In	Leader	Leader	Product Challenger	Not In
Citrix	Contender	Product Challenger	Contender	Not In	Not In	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 2 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Cloudgenix	Not In	Not In	Not In	Product Challenger	Not In	Not In
Colt	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
Comcast	Contender	Contender	Contender	Not In	Not In	Not In
Computacenter	Not In	Contender	Product Challenger	Not In	Not In	Not In
Crown Castle	Not In	Market Challenger	Not In	Not In	Not In	Not In
Ericsson	Not In	Not In	Not In	Product Challenger	Not In	Leader
Extreme Networks	Not In	Product Challenger	Product Challenger	Product Challenger	Leader	Not In
Fatpipe	Not In	Not In	Not In	Product Challenger	Contender	Not In
Flexiwan	Not In	Not In	Not In	Not In	Contender	Not In
GTT	Leader	Product Challenger	Not In	Not In	Not In	Not In
HCL	Product Challenger	Product Challenger	Product Challenger	Leader	Product Challenger	Product Challenger
HPE Aruba	Not In	Not In	Product Challenger	Not In	Leader	Leader

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 3 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
IBM	Leader	Leader	Leader	Leader	Product Challenger	Product Challenger
Infosys	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
JMA Wireless	Not In	Not In	Not In	Not In	Not In	Contender
Juniper Networks	Not In	Leader	Leader	Leader	Not In	Not In
Logicalis	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
Lumen	Leader	Leader	Product Challenger	Product Challenger	Market Challenger	Product Challenger
Masergy	Leader	Market Challenger	Market Challenger	Market Challenger	Not In	Not In
Mavenir	Not In	Not In	Not In	Not In	Not In	Contender
MetTel	Product Challenger	Not In	Contender	Not In	Not In	Not In
Microland	Rising Star	Rising Star	Product Challenger	Rising Star	Product Challenger	Product Challenger
Mphasis	Product Challenger	Product Challenger	Not In	Not In	Product Challenger	Not In
Nokia Networks	Not In	Not In	Not In	Product Challenger	Product Challenger	Leader

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 4 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
NTT	Leader	Product Challenger	Product Challenger	Not In	Not In	Not In
Nuage Networks	Product Challenger	Not In	Not In	Not In	Not In	Not In
Open Systems	Product Challenger	Not In	Not In	Not In	Not In	Not In
Orange Business Services	Leader	Leader	Leader	Not In	Leader	Leader
PCCW	Market Challenger	Not In	Not In	Market Challenger	Not In	Not In
Pica8	Not In	Not In	Not In	Contender	Contender	Not In
Prodapt	Contender	Not In	Not In	Not In	Not In	Not In
Qualcomm	Not In	Not In	Not In	Not In	Not In	Product Challenger
Sierra Wireless	Not In	Not In	Not In	Not In	Not In	Contender
Talari Networks	Not In	Not In	Not In	Product Challenger	Not In	Not In
Tata Communications	Product Challenger	Not In	Not In	Not In	Not In	Not In
TCS	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 5 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Tech Mahindra	Product Challenger	Product Challenger	Not In	Product Challenger	Product Challenger	Product Challenger
Telefonica	Not In	Product Challenger	Not In	Not In	Not In	Not In
Telstra	Product Challenger	Not In	Not In	Not In	Not In	Not In
T-Mobile	Leader	Product Challenger	Product Challenger	Product Challenger	Leader	Product Challenger
Verizon	Leader	Leader	Leader	Leader	Leader	Leader
Versa Networks	Product Challenger	Not In	Product Challenger	Product Challenger	Not In	Product Challenger
VMware	Not In	Not In	Leader	Not In	Not In	Not In
Vodafone	Product Challenger	Not In	Not In	Not In	Not In	Not In
Windstream	Contender	Not In	Not In	Not In	Not In	Not In
Wipro	Leader	Leader	Rising Star	Leader	Rising Star	Rising Star
Zensar	Contender	Contender	Not In	Not In	Not In	Not In

ENTERPRISE CONTEXT

Managed (SD) WAN Services

This report is relevant to enterprises across all industries in the U.S. for evaluating service providers of enterprise (SD) WAN (primarily enterprise SD-WAN or hybrid MPLS/IP/SD WAN) that deliver managed solutions and associated services.

In this quadrant report, ISG lays out the current market positioning of managed SD-WAN services providers in the U.S., and how they address the key challenges enterprises face in the region. ISG observes a growing demand among enterprises for managed SD-WAN solutions and services to outsource network functions and purchase them, along with consulting and professional services to assess, design and implement their enterprise networks along with on-going operations. These service providers also offer a collection of value-added services that provide enhanced configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support, zero-touch deployment and centralized management together with enhanced security.

Enterprises in the U.S. are increasingly looking for managed SD-WAN services. Coupled with a SD-WAN solution, many enterprises are looking to procure automation strategies with service balancing and clarity for network management and an enhanced security layer on top of the SD-WAN solution. Increasingly, enterprises in the U.S. are moving toward network-as-a-service infrastructure to augment their enterprise digital transformation efforts.

IT and network management leaders should read this report to understand the relative positioning and capabilities of providers that can help them effectively consume managed SD-WAN services. The report also shows how service provider technical and integration capabilities as well as partnerships compare with the rest in the market.

Digital transformation professionals should read this report to understand how providers of managed SD-WAN services fit their digital transformation initiatives and how they compare to one another.

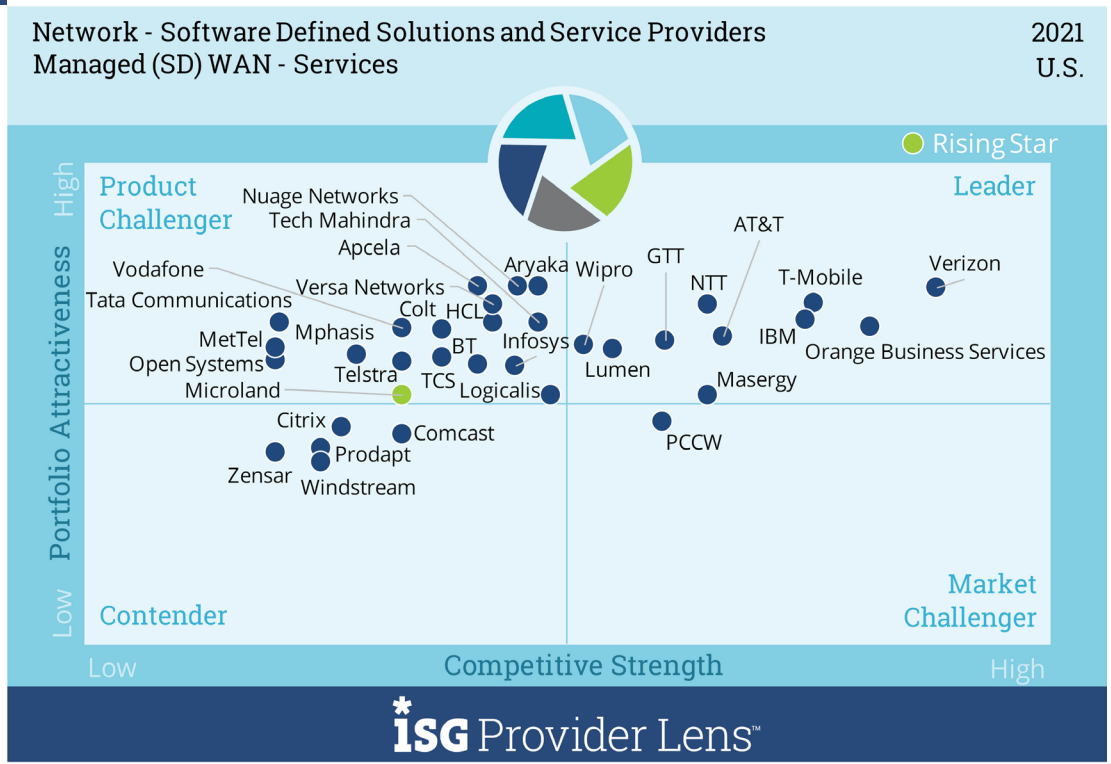
Procurement professionals should read this report to learn more about managed SD-WAN services suppliers because payment schemes for such services are often based on SLAs and KPIs being met, and/or levels of service/QoS. Some providers also offer pay-as-you-consume or similar payment arrangements, rather than traditional payment models.

MANAGED (SD) WAN SERVICES

Definition

This quadrant examines the providers of enterprise WAN (primarily enterprise SD-WAN, or hybrid MPLS/IP WAN) that deliver completely managed solutions and all associated services to enterprise customers.

SD-WAN provides more benefits of SDN technology than traditional hardware-based networking. It is an overlay architecture with a networking foundation that is much easier to manage when compared to legacy WANs. It mainly moves the control layer to the cloud, centralizing and simplifying network management. This overlay design abstracts software from hardware, enabling network virtualization and making the network more elastic. SD-WAN architecture reduces recurring network costs, offers network-wide control and visibility, and simplifies the technology with zero-touch deployment and centralized management. The key aspect of SD-WAN architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been as active as managed service providers, supplying complete managed SD-WAN solutions to enterprises, including hybrid MPLS/IP or MPLS/SDN offerings, as well as offering these solutions as white-label products for telco providers or integrators as part of their broader strategic implementations.



Source: ISG Research 2021

MANAGED (SD) WAN SERVICES

Eligibility Criteria

- Product/service managed WAN portfolio coverage, completeness and scope;
- Ability to deliver and manage all hardware and software aspects;
- Ability to rearchitect the existing MPLS-based WANs into hybrid WAN systems as required;
- Management capability for the needed orchestration and control of the overall architecture;
- Flexibility and ease of introduction of new services and deployments;
- Stability and roadmap planning of the provider;
- Reference customer/site volume in deployment;
- Competitiveness of offering and commercial terms.

Observations

- **AT&T** uses a managed network service (MNS) and automation strategy with service centricity for network management, integrating a range of existing or new infrastructures, services and support offerings into a fully managed package throughout the U.S. It offers modular enterprise tools and integration architecture and solutions such as AT&T FlexWareSM, AT&T Network on Demand and AT&T Managed Network Services to cover the full gamut of managed SD-WAN.
- **GTT** hosts multiple SD-WAN gateways in its core network to manage and simplify the routing of cloud-destined and private WAN traffic across the network. Its tier-1 internet network ensures easy access to any software-as-a-service (SaaS) application. The firm also supports private connectivity to cloud service providers. GTT offers a highly secure end-to-end managed SD-WAN solution, bolstered by the addition of Fortinet Secure SD-WAN as an advanced security offering.
- **IBM's** network-as-a-service (NaaS) options are installed across the U.S. IBM is a well-established provider of NaaS network and technology infrastructure, integration, and operation services, mainly as part of the overall enterprise digital transformation. In addition to a strong portfolio of its own solutions, the firm has an extensive partner solution base for SD-WAN, as well as in the optimization and performance accelerators areas.

MANAGED (SD) WAN SERVICES

Observations (cont.)

- **Lumen** (the new branding of CenturyLink) has added an extensive partnership ecosystem to its acquired company base in the SD-WAN field and has re-energized its focus in SD-WAN as part of its rebranding. It offers consultancy services to deliver a wide range of client and industry-specific solutions, including advanced embedded security solutions and managed operations.
- **Masergy** provides a highly secure mix and match network access based on Masergy SD-Network, DIA/Broadband, LTE/5G, BYON and/or Masergy-Provisioned Internet. In addition to Fortinet secure device gateways, the company also offers unified threat management, threat monitoring & reporting, managed security services and SASE solutions. Masergy has a high volume of own points of presence (PoPs) across the U.S. All enterprise deployments are provided with some of the highest (and achieved) SLA levels offered in the U.S. market currently.
- **NTT** has a long track record of success in delivering innovative solutions in both global and U.S. markets. It has the world's largest WAN footprint, covering more than 190 countries with a comprehensive end-to-end managed SD-WAN service portfolio. This is backed by its new software-defined infrastructure (SDI) initiative, which is based on its managed network overlay services (MNOS) platforms, and the Cisco infrastructure with API management to enable easy multi-platform and vendor integration.
- **Orange Business Services** delivers a wide range of network services and solutions in the U.S. The U.S. infrastructure comprises 300-plus Ethernet PoPs MPLS VPN and value-added services, 30-plus metro areas with sales and support teams throughout the U.S., three tier-4 data centers in Atlanta, Secaucus, New Jersey, and San Francisco with 20,600-plus customer connections managed in the region, and around 800 employees in the U.S. Its managed SD-WAN offerings include flexible SD-WAN with full multi-network compatibility across virtual SD-WAN gateways. It also offers complete turnkey "take over and transform" network transformations.

MANAGED (SD) WAN SERVICES

Observations (cont.)

- **T-Mobile** (formerly Sprint) is the third-largest mobile operator in the U.S. The company has high visibility and competence within the managed SD-WAN space in the region. It adopts an access-agnostic approach and is highly consulting led in its sales and design/ implementation process and employs industry experts in this area. The company offers fully managed SD-WAN solutions, including MNS Complete, MNS Collaborative, and MNS Monitor and Notify (M&N). It also provides Compass, a web portal with an interactive network management and reporting tool with self-management functions.
- **Verizon** is a well-recognized brand in the U.S. for managed network services and has more than 25 years of experience in delivery, experiencing strong revenue growth from the business segment in the U.S. during 2020. During the last 12 months, Verizon has recommitted itself toward delivering advanced and powerful SDN solutions, including announcements of Cisco SD-WAN (Viptela) and Meraki partnering and deployments. It provides different tiers of managed SD-WAN based on the fully and co-managed models of service. It also delivers a comprehensive portfolio of its own SD-WAN solutions and services from its partner network in a managed service wrapper.
- **Wipro** ensures consulting-led delivery of both off-the-shelf and highly tailored specific solutions, supported by a vast array of toolsets, products and processes to ensure operational deployment and management. Its portfolio includes Wipro digital Designit, Insightix™, netFactory, ServiceNXT, NetBox, #WanFreedom, Wipro SmartView for governance, Cloud Trust Security framework, Wipro HOLMES™ RPA/AI methods and toolsets, and partner solutions and products from companies such as VMware, Versa, Riverbed, HPE and Cisco.
- **Microland** (Rising Star) has a delivery center in Atlanta. Software-defined services is the core of Microland's network offerings, covering SD-WAN, SD-LAN/Wi-Fi and SDN for the data center. Microland currently offers end-to-end network services in branch LAN, Wi-Fi, WAN, data center and cloud network. Microland has significant expertise and experience in SD-WAN with its IP for SD-WAN transformation acceleration.

ORANGE BUSINESS SERVICES

Overview

Orange Business Services delivers a wide range of network services and solutions in the U.S. The U.S. infrastructure consists of 300-plus Ethernet PoPs MPLS VPN and value-added services, 30-plus metro areas with sales and support teams throughout the U.S., and three tier-4 datacenters in Atlanta, Secaucus, New Jersey, and San Francisco. Specialized teams are focused on solutions, such as LAN, cybersecurity, collaboration, IoT and cloud, and verticals, with 20,600-plus customer connections managed in the region and around 800 employees in the U.S. The company offers an advisory-led engagement practice and a strong portfolio of SD-WAN solutions. The firm's SD network strategy, covering AI orchestration and its NextGen Hub, resolves any issues associated with multi-vendor and multi-network infrastructure integration and management.

Strengths

Customized and flexible SD-WAN: Flexible SD-WAN is an automated, intelligent, global solution with on-demand virtualized services. It is centrally orchestrated for end-to-end performance and control. The solution can also be almost endlessly customized for a fully managed or co-managed service delivery. The SD offering ties security, network, edge and cloud together, as required.

Extensive ecosystem and partners: Orange Business Services has a world-class partner ecosystem in the managed network, SDN, SD-WAN, multi-cloud network and multi-network integration spaces, including Cisco Global Gold Partner and UC Master Certification, Riverbed, Palo Alto, HPE/Aruba, Microsoft, Fortinet, and numerous other partner certifications and awards. These assets, together with advisory abilities, allow the company to deliver comprehensive enterprise-specific and vendor-agnostic solutions.

Technology and service supplier offering: Orange Business Services offers a "walk in and take over" service for existing networks and delivers full management of transformations through to final state SD-WAN or advanced network.

Caution

Like many large players, Orange Business Services is challenged by the constant attention to the business needs of the segment and the introduction of new technologies and solutions from global markets such as ISEN, which are required for maintaining leadership in this space.

2021 ISG Provider Lens™ Leader

Orange Business Services delivers highly effective managed SD-WAN solutions, including walk in and take over transformation of WAN to SD-WAN in the U.S.

Managed (SD) WAN Services – U.K.

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 1 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
ADVA	Not In	Not In	Contender	Not In	Not In	Not In
Allied Telesis	Not In	Not In	Market Challenger	Market Challenger	Not In	Not In
ALTEN Calsoft Labs	Not In	Market Challenger	Not In	Not In	Not In	Not In
Altiostar	Not In	Not In	Not In	Not In	Not In	Contender
Altran	Not In	Contender	Not In	Not In	Not In	Not In
Apcela	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Aryaka	Market Challenger	Not In	Market Challenger	Not In	Not In	Not In
AT&T	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not In
BT	Leader	Leader	Leader	Leader	Leader	Leader
Cancom	Product Challenger	Product Challenger	Product Challenger	Market Challenger	Product Challenger	Not In
Cato Networks	Not In	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not In
Cisco	Not In	Not In	Leader	Leader	Leader	Leader
Citrix	Not In	Not In	Leader	Not In	Product Challenger	Not In
Claranet	Market Challenger	Not In	Not In	Not In	Not In	Not In
Cocus	Not In	Product Challenger	Not In	Not In	Not In	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 2 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Cognizant	Not In	Market Challenger	Not In	Not In	Not In	Not In
Colt	Leader	Leader	Product Challenger	Not In	Not In	Not In
Comcast	Not In	Contender	Not In	Not In	Contender	Not In
Computacenter	Not In	Market Challenger	Market Challenger	Product Challenger	Not In	Not In
Cyient	Not In	Contender	Not In	Not In	Not In	Not In
Deutsche Telekom	Leader	Leader	Product Challenger	Leader	Leader	Product Challenger
Ericsson	Not In	Not In	Not In	Leader	Not In	Leader
Extreme Networks	Not In	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not In
Fatpipe	Not In	Not In	Not In	Contender	Contender	Not In
Flexiwan	Not In	Not In	Not In	Not In	Product Challenger	Not In
Fortinet	Not In	Not In	Not In	Not In	Product Challenger	Not In
Fujitsu	Product Challenger	Not In	Not In	Not In	Not In	Not In
GTT	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
HCL	Leader	Leader	Product Challenger	Leader	Leader	Product Challenger
HPE Aruba	Not In	Not In	Leader	Not In	Leader	Leader

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 3 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
IBM	Leader	Leader	Leader	Leader	Product Challenger	Product Challenger
Infosys	Rising Star	Leader	Product Challenger	Leader	Product Challenger	Product Challenger
Juniper Networks	Not In	Not In	Product Challenger	Product Challenger	Leader	Not In
Logicalis	Product Challenger	Contender	Not In	Not In	Not In	Not In
LTTS	Not In	Product Challenger	Not In	Not In	Not In	Not In
Lumen	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Market Challenger	Not In
Masergy	Product Challenger	Contender	Contender	Contender	Not In	Not In
Mavenir	Not In	Not In	Not In	Not In	Not In	Contender
Microland	Product Challenger	Rising Star	Product Challenger	Product Challenger	Product Challenger	Product Challenger
MLL Telecom	Contender	Not In	Not In	Not In	Not In	Not In
Mphasis	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
nacXwan	Market Challenger	Not In	Not In	Not In	Not In	Not In
netElastic	Not In	Not In	Not In	Contender	Not In	Not In
Nokia Networks	Not In	Not In	Not In	Not In	Not In	Leader
NTT	Leader	Product Challenger	Product Challenger	Product Challenger	Not In	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 4 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Nuage Networks	Product Challenger	Not In	Leader	Leader	Leader	Not In
Nuvias	Not In	Not In	Not In	Market Challenger	Not In	Contender
Open Systems	Product Challenger	Not In	Not In	Not In	Not In	Not In
Orange Business Services	Leader	Leader	Leader	Leader	Leader	Product Challenger
PCCW	Contender	Not In	Not In	Not In	Not In	Not In
Pica8	Not In	Not In	Not In	Contender	Contender	Not In
Prodapt	Contender	Product Challenger	Contender	Not In	Not In	Not In
Ranplan Wireless	Not In	Not In	Not In	Not In	Not In	Contender
Riedel Networks	Product Challenger	Not In	Not In	Not In	Not In	Not In
Riverbed	Not In	Not In	Not In	Not In	Market Challenger	Not In
SonicWall	Not In	Not In	Contender	Contender	Contender	Not In
SSE Enterprise	Market Challenger	Not In	Not In	Not In	Not In	Not In
Talari Networks	Not In	Not In	Not In	Product Challenger	Not In	Not In
Tata Communications	Leader	Leader	Not In	Not In	Not In	Not In
TCS	Product Challenger	Leader	Product Challenger	Product Challenger	Product Challenger	Product Challenger

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 5 of 5

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Tech Mahindra	Leader	Leader	Rising Star	Leader	Leader	Rising Star
Telefonica	Leader	Leader	Not In	Product Challenger	Not In	Not In
Telefonica(O2)	Not In	Not In	Not In	Not In	Not In	Market Challenger
Telia	Product Challenger	Product Challenger	Contender	Not In	Not In	Not In
Telstra	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not In	Not In
Teneo	Contender	Not In	Not In	Not In	Not In	Not In
Three	Not In	Not In	Not In	Not In	Not In	Market Challenger
Verizon	Leader	Leader	Product Challenger	Rising Star	Rising Star	Not In
Versa Networks	Product Challenger	Not In	Leader	Product Challenger	Leader	Not In
Virgin Media Business	Market Challenger	Not In	Not In	Not In	Not In	Not In
VMware	Not In	Not In	Leader	Product Challenger	Leader	Not In
Vodafone	Leader	Leader	Leader	Leader	Leader	Leader
Windstream	Contender	Not In	Not In	Not In	Not In	Not In
Wipro	Leader	Leader	Product Challenger	Leader	Rising Star	Rising Star
Zensar	Contender	Contender	Not In	Not In	Contender	Not In

ENTERPRISE CONTEXT

Managed (SD) WAN Services

This report is relevant to enterprises across all industries in the U.K. for evaluating service providers of enterprise WAN (primarily, enterprise SD-WAN or hybrid MPLS/IP WAN), which delivers managed solutions and associated services.

In this quadrant report, ISG highlights the current market positioning of providers of managed SD-WAN services for enterprises in the U.K., and how each provider addresses the key challenges faced in the region. ISG observes a growing demand among enterprises for managed SD-WAN solutions and services to outsource IT functions and purchase them, as well as consulting and professional services to assess, design and implement their enterprise networks, along with ongoing operations. These service providers offer a wide range of value-added services, which include configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support, zero-touch deployment and centralized management, and AI-based autonomous healing.

Due to the COVID-19 pandemic, a huge number of people are working from remote locations in the U.K., which is driving the enterprise need for SD-WAN deployment for effective work-from-home policies. Also, network security is a key focus of enterprises. Enterprises are looking to monetize their public cloud infrastructure and improve user experience through network analytics as most of their workloads are moving to cloud more rapidly than before. However, U.K. enterprises are slow to adopt managed SD-WAN solutions compared to Nordics.

The following can use this report to identify and evaluate different service providers:

IT and network management leaders should read this report to understand the relative positioning and capabilities of providers that can help them effectively consume managed SD-WAN services. The report also shows how the technical and integration capabilities as well as partnerships of service providers differ from the rest in the market.

Digital transformation professionals should read this report to understand how providers of managed SD-WAN services fit their digital transformation initiatives, and how they compare to one another.

Procurement professionals should read this report to learn more about managed SD-WAN service suppliers, as payment schemes for such services are often based on SLAs and KPIs being met and/or levels of service/QoS. Some providers also offer pay-as-you-consume or similar payment arrangements, rather than traditional payment models.

MANAGED (SD) WAN SERVICES

Definition

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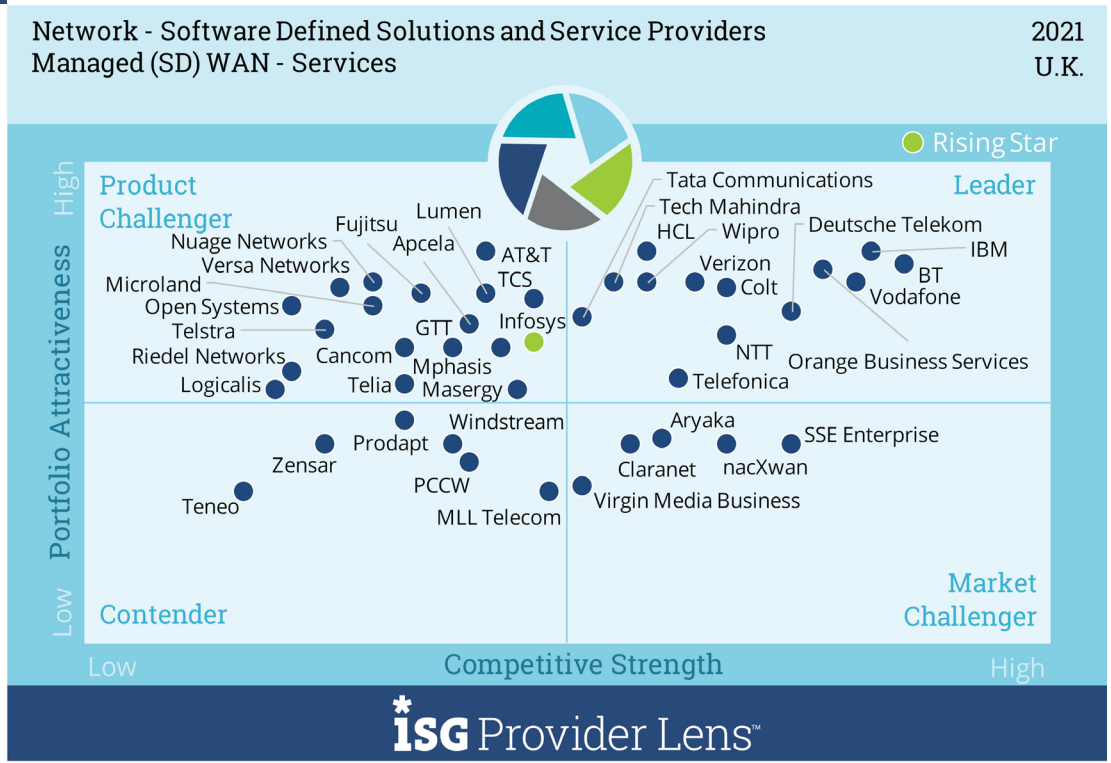
SD-WAN provides more benefits of SDN technology than traditional hardware-based networking. It is an overlay architecture with a networking foundation that is much easier to manage when compared to legacy WANs. It mainly moves the control layer to the cloud, centralizing and simplifying network management. This overlay design abstracts software from hardware, enabling network virtualization and making the network more elastic. SD-WAN architecture reduces recurring network costs, offers network-wide control and visibility, and simplifies the technology with zero-touch deployment and centralized management. The key aspect of SD-WAN architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been as active as managed service providers, supplying complete managed SD-WAN solutions to enterprises, including hybrid MPLS/IP or MPLS/SDN offerings, as well as offering these solutions as white-label products for telco providers or integrators as part of their broader strategic implementations.



Source: ISG Research 2021

MANAGED (SD) WAN SERVICES

Eligibility Criteria

- Product/service managed WAN portfolio coverage, completeness and scope;
- Ability to deliver and manage all hardware and software aspects;
- Ability to rearchitect the existing MPLS-based WANs into hybrid WAN systems as required;
- Management capability for the needed orchestration and control of the overall architecture;
- Flexibility and ease of introduction of new services and deployments;
- Stability and roadmap planning of the provider;
- Reference customer/site volume in deployment;
- Competitiveness of offering and commercial terms.

Observations

- **BT** has a plethora of managed services offering, including Cloud Connect that has gained traction in the market.
- At present, SD-WAN represents the single largest product development in **Colt,** and the company envisages to be the largest supplier to enterprise arena in the U.K.
- **IBM** has been focussing on automation and orchestration to make the enterprise network more robust and sustainable.
- **HCL** has robust set of offerings associated with the ever-evolving enterprise network and attempts to make customer digital journeys smoother with its templatised services.
- **NTT Communications** has strong capabilities in cloud networking technologies, security, and AI/ML implementations.
- **Orange Business Services** has been exploring new verticals in the U.K. with its network-native and digitally strong solutions.

MANAGED (SD) WAN SERVICES

Observations (cont.)

- **Tata Communications** guides customers across their digital ambitions in a transformative manner and co-creates products and services for them from ideation to deployment to address the enterprise requirements.
- **Tech Mahindra** transforms the client network environments, which include a refurbishment of the traditional environment or end-to-end takeovers such as operating the network and offering it back to the clients as a service.
- **Telefonica** has identified the key pillars of growth for its network services, which ranges from managed services to cloud networking.
- **Verizon** has been a preferred partner for end-to-end managed takeovers, technology refreshes and migration deals in the U.K.
- **Wipro's** productised offerings and automation framework reduce turnaround time for customers in deployment of new technologies.
- **Vodafone** has increased focus on the implementation of SD-WAN technologies and running them in a managed service wrap around.
- **Infosys' (Rising Star)** Network-as-a-Service (NaaS) offering is gradually being infused with SD elements and being directed toward providing additional flexibility to enterprise clients by extending network services beyond WAN.

ORANGE BUSINESS SERVICES

Overview

Orange Business Services, based in Paris, is a network-native digital services specialist that can provide various network and SDN services on a global scale in 220 countries and territories.

Strengths

Globally adopted solution to drive reliability, transparency and flexibility: High degrees of sophisticated automation in Orange's flexible SD-WAN delivers future-readiness. A user-friendly, simple interface can be used by enterprises to leverage the flexibility of the network to dynamically anticipate and respond to changes in their business environment and, accordingly, migrate applications to the cloud. The technology provides reliable performance, improved transparency, and security, as well as support for multiple connection types, driving down the overall cost and enhancing end-user experience for business-critical applications.

Crafting strategies to extend focus beyond the world's largest multinationals: Orange Business Services has a sizeable business in the U.K. but retains the customer relationship strategy of a small organisation. Consistently, the company is quite successful in the enterprise segment with revenue ranging from $1 billion to $5 billion and over 10,000 employees.

Entering the public sector: The company had historically avoided engagement with the public sector and defence companies in the U.K. due to the associated complexities with licenses. The COVID-19 pandemic triggered the requirement for highly customized and productized services offered by Orange to these segments and resulted in new engagements. The company has also succeeded in other verticals such as manufacturing, oil and gas, and logistics.

Caution

Targeted marketing campaigns to extend the direct sales and customised strategic engagements can increase the prospects for Orange Business Services for scaling up its activities across verticals, in the U.K.

2021 ISG Provider Lens™ Leader

The robustness of Orange's managed network services capabilities has been proved during the COVID-19 pandemic, and the company has established itself as a reliable provider in the U.K.

Managed (SD) WAN Services – Nordics

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 1 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
ADVA	Not In	Not In	Contender	Not In	Not In	Not In
Allied Telesis	Not In	Not In	Market Challenger	Not In	Not In	Not In
Altran	Not In	Contender	Not In	Contender	Not In	Not In
Apcela	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
AT&T	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Atos	Contender	Contender	Not In	Not In	Not In	Not In
BT	Leader	Leader	Product Challenger	Leader	Leader	Product Challenger
Cancom	Not In	Not In	Not In	Contender	Product Challenger	Not In
Cisco	Not In	Not In	Leader	Leader	Leader	Leader
Citrix	Not In	Not In	Leader	Not In	Product Challenger	Not In
Cognizant	Not In	Market Challenger	Not In	Not In	Not In	Not In
Colt	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
Conscia	Market Challenger	Market Challenger	Not In	Not In	Not In	Not In
Deutsche Telekom	Leader	Leader	Product Challenger	Leader	Leader	Product Challenger

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 2 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
DXC	Contender	Contender	Not In	Not In	Not In	Not In
Elisa	Market Challenger	Not In	Not In	Market Challenger	Not In	Market Challenger
Enea	Market Challenger	Not In	Not In	Not In	Not In	Market Challenger
Ericsson	Not In	Not In	Leader	Leader	Not In	Leader
Fatpipe	Not In	Not In	Not In	Contender	Contender	Not In
Fortinet	Not In	Not In	Not In	Not In	Product Challenger	Not In
GTT	Product Challenger	Rising Star	Not In	Not In	Not In	Not In
HCL	Leader	Leader	Product Challenger	Leader	Leader	Product Challenger
HPE Aruba	Not In	Not In	Leader	Not In	Leader	Leader
Huawei	Not In	Not In	Contender	Not In	Not In	Not In
IBM	Leader	Leader	Leader	Leader	Product Challenger	Product Challenger
Infosys	Rising Star	Leader	Product Challenger	Leader	Product Challenger	Product Challenger
Itera	Not In	Not In	Not In	Not In	Market Challenger	Not In
Juniper Networks	Not In	Not In	Product Challenger	Product Challenger	Leader	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 3 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Lumen	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Market Challenger	Not In
Mavenir	Not In	Not In	Not In	Not In	Not In	Contender
Microland	Not In	Not In	Not In	Product Challenger	Product Challenger	Not In
NetNordic	Market Challenger	Market Challenger	Not In	Not In	Not In	Not In
Nokia Networks	Not In	Not In	Not In	Not In	Not In	Leader
NTT	Not In	Product Challenger	Not In	Product Challenger	Not In	Not In
Nuage Networks	Product Challenger	Not In	Leader	Leader	Leader	Not In
Nuvias	Not In	Not In	Not In	Market Challenger	Not In	Not In
Open Systems	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
Orange Business Services	Leader	Leader	Leader	Leader	Leader	Product Challenger
Pica8	Not In	Not In	Not In	Contender	Contender	Not In
Prodapt	Not In	Product Challenger	Product Challenger	Not In	Not In	Not In
Sierra Wireless	Not In	Not In	Not In	Not In	Not In	Contender
SonicWall	Not In	Not In	Contender	Contender	Contender	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 4 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Talari Networks	Not In	Not In	Not In	Product Challenger	Not In	Not In
Tata Communications	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
TCS	Leader	Leader	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Tech Mahindra	Leader	Leader	Rising Star	Leader	Leader	Rising Star
Tele2	Not In	Product Challenger	Market Challenger	Market Challenger	Market Challenger	Market Challenger
Telefonica	Product Challenger	Contender	Not In	Product Challenger	Not In	Not In
Telenor	Market Challenger	Leader	Market Challenger	Market Challenger	Market Challenger	Leader
Telia	Leader	Product Challenger	Product Challenger	Product Challenger	Not In	Leader
Telstra	Not In	Product Challenger	Not In	Not In	Not In	Not In
Verizon	Leader	Leader	Product Challenger	Rising Star	Rising Star	Product Challenger
Versa Networks	Not In	Not In	Product Challenger	Not In	Leader	Not In
VMware	Not In	Not In	Leader	Product Challenger	Leader	Not In
Wipro	Leader	Leader	Leader	Leader	Rising Star	Rising Star

ENTERPRISE CONTEXT

Managed (SD) WAN Services

This report is relevant to enterprises across all industries in the Nordics for evaluating service providers of enterprise WAN (primarily, enterprise SD-WAN or hybrid MPLS/IPWAN), which delivers managed solutions and associated services.

In this quadrant report, ISG highlights the current market positioning of providers of managed SD-WAN services for enterprises in the Nordics, and how each provider addresses the key challenges faced in the region. ISG observes a growing demand among enterprises for managed SD-WAN solutions and services to outsource IT functions and purchase them, as well as consulting and professional services to assess, design and implement their enterprise networks, along with ongoing operations. These service providers offer a wide range of value-added services, which include configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support, zero-touch deployment and centralized management, and AI-based autonomous healing.

Enterprises in Nordics are successful in terms of identifying the network pain points to move forward with robust network transformation strategies. Enterprises in this region are largely looking at global providers to develop their networks. Due to the closed market nature in the region, enterprises are slightly tilting towards local teams of global companies, which provide strong product capabilities and with higher quality of service. A few enterprises in this region are going for end-to-end transformation of their networks to meet their operational strategies. Also, the demand for partnered solutions that combines telecom service providers, and SDN partners are gaining popularity in the region owing to the demand for future building ready dynamic networks.

The following can use this report to identify and evaluate different service providers:

IT and network management leaders should read this report to understand the relative positioning and capabilities of providers that can help them effectively consume managed SD-WAN services. The report also shows how the technical and integration capabilities as well as partnerships of service providers differ from the rest in the market.

Digital transformation professionals should read this report to understand how providers of managed SD-WAN services fit their digital transformation initiatives, and how they compare to one another.

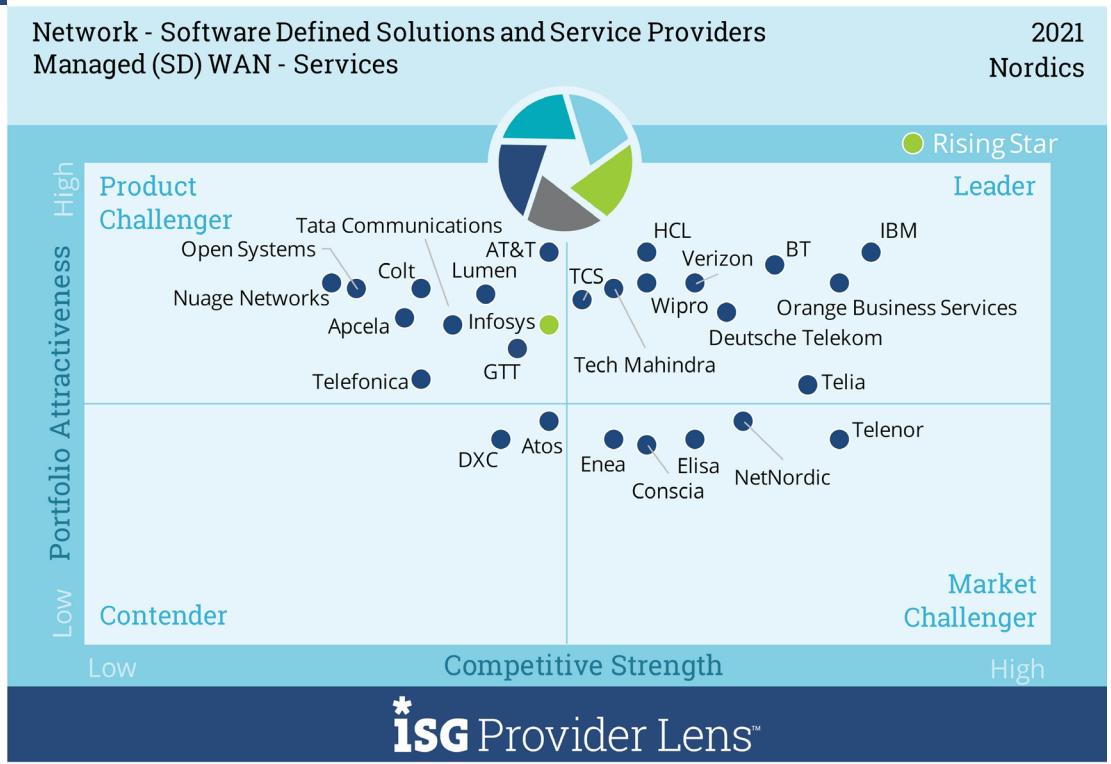
Procurement professionals should read this report to learn more about managed SD-WAN service suppliers, as payment schemes for such services are often based on SLAs and KPIs being met and/or levels of service/QoS. Some providers also offer pay-as-you-consume or similar payment arrangements, rather than traditional payment models.

MANAGED (SD) WAN SERVICES

Definition

This quadrant examines the providers of enterprise WAN (primarily enterprise SD-WAN, or hybrid MPLS/IP WAN) that deliver completely managed solutions and all associated services to enterprise customers.

SD-WAN provides more benefits of SDN technology than traditional hardware-based networking. It is an overlay architecture with a networking foundation that is much easier to manage when compared to legacy WANs. It mainly moves the control layer to the cloud, centralizing and simplifying network management. This overlay design abstracts software from hardware, enabling network virtualization and making the network more elastic. SD-WAN architecture reduces recurring network costs, offers network-wide control and visibility, and simplifies the technology with zero-touch deployment and centralized management. The key aspect of SD-WAN architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been as active as managed service providers, supplying complete managed SD-WAN solutions to enterprises, including hybrid MPLS/IP or MPLS/SDN offerings, as well as offering these solutions as white-label products for telco providers or integrators as part of their broader strategic implementations.



Source: ISG Research 2021

MANAGED (SD) WAN SERVICES

Eligibility Criteria

- Product/service managed WAN portfolio coverage, completeness and scope;
- Ability to deliver and manage all hardware and software aspects;
- Ability to rearchitect the existing MPLS-based WANs into hybrid WAN systems as required;
- Management capability for the needed orchestration and control of the overall architecture;
- Flexibility and ease of introduction of new services and deployments;
- Stability and roadmap planning of the provider;
- Reference customer/site volume in deployment;
- Competitiveness of offering and commercial terms

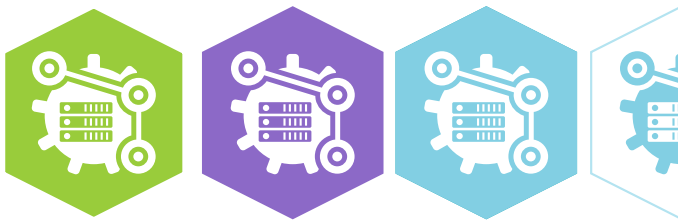
Observations

- **BT's** focus has been on the multinational segment of the Nordics, which is a part of its global market penetration strategy.
- **Deutsche Telekom (DT)** has integrated the T-Systems offerings under a single DT brand and has developed a more focused strategy.
- **IBM** combines in-house technologies with domain knowledge to identify enterprise pain points associated with the network.
- **HCL** has a focused, productized approach towards capturing the Nordics market with an extensive footprint.
- **Orange Business Services** takes an inorganic growth-based approach to tap the regional market, serving both private and public sector clients.
- **TCS'** proprietary TCS Network as a Service (TNaaS) is a holistic solution that spans all the elements of network management.

MANAGED (SD) WAN SERVICES

Observations

- **Tech Mahindra** has successfully tapped the vibrant Nordics market, showcasing some large engagements in the manufacturing sector.
- **Telia** is one of the regional incumbents with the necessary scale to meet enterprise requirements.
- **Verizon** has expanded in the Nordics, progressing from one account to another based on its industry credibility.
- **Wipro** has established a separate region-specific business unit for driving growth in the Nordics.
- **Infosys** (Rising Star) has an extensive portfolio of software-defined anything (SDx) offerings and effectively addresses the intrinsic details of client requirements.



ORANGE BUSINESS SERVICES

Overview

Orange Business Services (Orange) is a multinational telecommunications corporation based in Paris, France and is a specialist in developing innovative network approaches for a more agile and cost-effective connectivity. The company has capabilities in network orchestration, operation and optimization with a robust set of offerings. It has a strong presence in the Nordics.

Strengths

Market-leading SD-WAN solution to increase reliability and transparency of the network: Orange's Flexible SD-WAN is a well-established global solution that offers a high degree of automation and other attributes of the intelligent network with on-demand virtualized services. The solution is centrally orchestrated for driving performance and control, conceptualizing a reliable, flexible, and agile way to align enterprise network functions with business needs.

Making its presence felt in the Nordics through inorganic growth: Orange has been consolidating its footprint in the region by sharpening its focus towards key competencies, driving business value of clients and accelerating network innovations. Though its acquisitions in the region do not directly align with the network technology stack, it will be the biggest focus area for Orange. In addition, the acquired capabilities would be placed in the portfolio accordingly to strengthen the global business.

Collaborative model between businesses to tap the market: In the Nordics, Orange has maintained a robust and growing workforce in with its dedicated units for cloud and security services and solutions. The software-defined technology trends in the region are driven by changes in the enterprise business side, which is presently dictated by various levels of ongoing cloud transformations as well as changes in terms of connectivity and security aspects. Consistently, Orange has strategized a tight triangle of cooperation between the individual businesses that ensure its success in the region.

Caution

Historically, Orange has been quality focused, which has occasionally impacted its speed of delivery.

As the SD-WAN contracts for competitors, that were signed a few years ago, are about to expire, opportunities for Orange (and others) may open. Sharpening its capabilities to deliver a "Walk in take over" on any SD-WAN technology in the same way as they have for LAN and WAN services will be paramount for their continued success.

2021 ISG Provider Lens™ Leader

Orange is well positioned in the Nordics to leverage the growth momentum of SD-WAN, bringing in a value proposition with its cloud and security businesses.

Managed (SD) WAN Services – Germany

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 1 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Altiostar	Not In	Not In	Not In	Not In	Not In	Product Challenger
Apcela	Not In	Product Challenger	Product Challenger	Product Challenger	Leader	Leader
Arista	Not In	Product Challenger	Market Challenger	Not In	Not In	Not In
Aryaka	Not In	Product Challenger	Market Challenger	Not In	Not In	Not In
AT&T	Product Challenger	Not In	Not In	Product Challenger	Not In	Market Challenger
Axians	Product Challenger	Leader	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Bechtle	Contender	Contender	Contender	Market Challenger	Contender	Contender
becom	Not In	Not In	Not In	Contender	Not In	Not In
BT	Leader	Product Challenger	Product Challenger	Product Challenger	Not In	Not In
Cancom	Rising Star	Product Challenger	Product Challenger	Market Challenger	Market Challenger	Not In
Cato Networks	Not In	Product Challenger	Not In	Product Challenger	Product Challenger	Not In
C-C Solutions	Not In	Contender	Contender	Contender	Contender	Contender
Cisco	Not In	Not In	Leader	Product Challenger	Leader	Leader
Citrix	Product Challenger	Not In	Product Challenger	Not In	Product Challenger	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 2 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Claranet	Product Challenger	Not In	Not In	Not In	Not In	Not In
Cocus	Not In	Not In	Not In	Not In	Product Challenger	Product Challenger
Colt	Leader	Not In	Not In	Not In	Not In	Not In
Comline	Not In	Not In	Contender	Not In	Not In	Not In
Computacenter	Not In	Leader	Leader	Leader	Not In	Not In
Controlware	Product Challenger	Product Challenger	Product Challenger	Not In	Not In	Not In
Damovo	Not In	Not In	Product Challenger	Leader	Product Challenger	Product Challenger
Deutsche Telekom	Leader	Leader	Product Challenger	Leader	Leader	Leader
Ekinops	Not In	Not In	Not In	Contender	Not In	Not In
Ericsson	Not In	Not In	Not In	Product Challenger	Not In	Leader
Extreme Networks	Not In	Leader	Leader	Leader	Leader	Not In
GCX	Product Challenger	Not In	Not In	Not In	Not In	Not In
GTT	Leader	Not In	Not In	Not In	Not In	Not In
HCL	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Rising Star

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 3 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
HPE Aruba	Not In	Not In	Not In	Not In	Market Challenger	Leader
IBM	Leader	Leader	Leader	Leader	Leader	Product Challenger
Infosys	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Rising Star	Product Challenger
Infradata	Contender	Not In	Not In	Not In	Not In	Not In
Juniper Networks	Not In	Not In	Leader	Leader	Not In	Not In
Logicalis	Not In	Product Challenger	Not In	Leader	Not In	Not In
Lumen	Product Challenger	Not In	Not In	Not In	Not In	Not In
Masergy	Market Challenger	Not In	Not In	Not In	Not In	Not In
M-Net	Market Challenger	Not In	Contender	Not In	Not In	Not In
Mphasis	Product Challenger	Product Challenger	Not In	Not In	Not In	Not In
Nokia Networks	Not In	Not In	Not In	Product Challenger	Product Challenger	Leader
NTT	Product Challenger	Market Challenger	Leader	Leader	Not In	Not In
Nuage Networks	Product Challenger	Not In	Not In	Not In	Not In	Not In
Open Systems	Contender	Not In	Not In	Not In	Not In	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 4 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Orange Business Services	Leader	Leader	Leader	Not In	Leader	Leader
Riedel Networks	Leader	Not In	Not In	Product Challenger	Not In	Not In
TCS	Product Challenger	Product Challenger	Product Challenger	Not In	Product Challenger	Product Challenger
Tata Communications	Product Challenger	Not In	Not In	Not In	Not In	Not In
Tech Mahindra	Product Challenger	Product Challenger	Product Challenger	Not In	Product Challenger	Product Challenger
Telefonica	Product Challenger	Not In	Not In	Product Challenger	Not In	Product Challenger
Telstra	Not In	Contender	Not In	Not In	Not In	Not In
Verizon	Leader	Not In	Not In	Product Challenger	Not In	Market Challenger
Versa Networks	Product Challenger	Not In	Product Challenger	Not In	Not In	Not In
Vodafone	Leader	Leader	Leader	Leader	Product Challenger	Leader
Wipro	Leader	Rising Star	Rising Star	Rising Star	Leader	Leader

ENTERPRISE CONTEXT

Managed (SD) WAN Services

This report is relevant to enterprises across all industries in Germany for evaluating service providers of enterprise WAN (primarily, enterprise SD-WAN or hybrid MPLS/IP WAN), which delivers managed solutions and associated services.

In this quadrant report, ISG highlights the current market positioning of providers of managed SD-WAN services for enterprises in Germany, and how each provider addresses the key challenges faced in the region. ISG observes a growing demand among enterprises for managed SD-WAN solutions and services to outsource IT functions and purchase them as well as consulting and professional services to assess, design and implement their enterprise networks, along with ongoing operations. These service providers offer a wide range of value-added services, which include configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support, zero-touch deployment and centralized management, and AI-based autonomous healing.

Enterprises in Germany are seeking secured and managed SD-WAN services. Coupled with a SD-WAN solution, many enterprises are looking to procure automation strategy with service balancing and clarity for network management with an enhanced security layer on top of the SD-WAN solution They are looking for higher standards in terms of security and data protection policies to adhere to strict German data protection guidelines. This is driving the need for fully customized and rapid start packaged solutions among enterprises. Some of the mid-market enterprises in Germany are preferring to deploy SD-WAN services that matches their business needs without missing the product capabilities that are offered to a large enterprise.

The following can use this report to identify and evaluate different service providers:

IT and network management leaders should read this report to understand the relative positioning and capabilities of providers that can help them effectively consume managed SD-WAN services. The report also shows how the technical and integration capabilities as well as partnerships of service providers differ from the rest in the market.

Digital transformation professionals should read this report to understand how providers of managed SD-WAN services fit their digital transformation initiatives, and how they compare to one another.

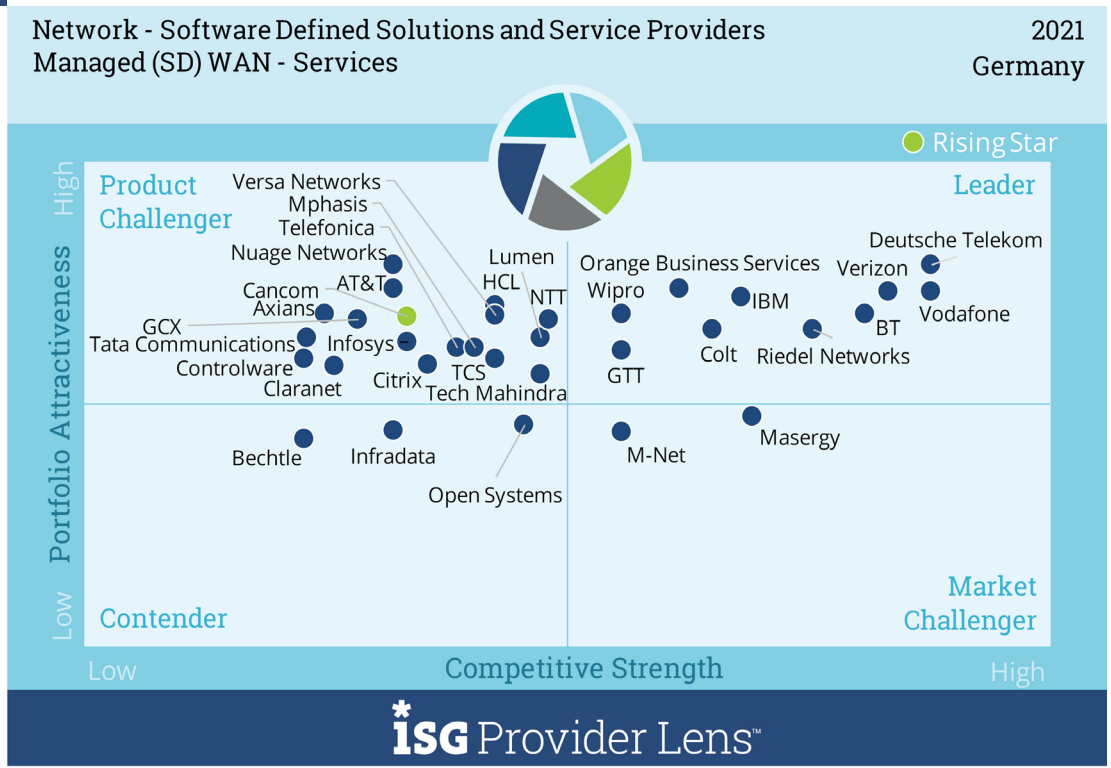
Procurement professionals should read this report to learn more about managed SD-WAN service suppliers. Some providers also offer pay-as-you-consume or similar payment arrangements, rather than traditional payment models.

MANAGED (SD) WAN – SERVICES

Definition

This quadrant addresses the providers of enterprise WAN (primarily enterprise SD-WAN or hybrid MPLS/IP WAN) that deliver completely managed solutions and associated services to enterprise clients.

SD-WAN provides the benefits of SDN technology over traditional hardware-based networking. It is an overlay architecture with a networking foundation that is easier to manage than legacy WANs, essentially moving the control layer to the cloud and, in the process, centralizing and simplifying network management. This overlay design abstracts software from hardware, enabling network virtualization and making the network more elastic. An SD-WAN architecture reduces recurring network costs, offers network-wide control and visibility, and simplifies the technology with zero-touch deployment and centralized management. The key aspect of SD-WAN architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been increasingly active as managed services providers, offering complete managed



Source: ISG Research 2021

MANAGED (SD) WAN – SERVICES

Definition (cont.)

SD-WAN solutions to enterprises, including hybrid MPLS/IP or MPLS/SDN solutions, as well as white-label products to telco providers or integrators as part of their broader strategic implementations.

Eligibility Criteria

- Scope and coverage of product/service managed WAN portfolio;
- Ability to deliver and manage all hardware and software aspects;
- Ability to rearchitect (as required) the existing MPLS-based WANs into hybrid WAN systems;
- Management capability for the needed orchestration and control of the overall architecture;
- Flexibility and ease of introduction of new services and deployments;
- Stability and roadmap planning;
- Reference customer/site volume in deployment;
- Competitiveness of offering and commercial terms.

MANAGED (SD) WAN – SERVICES

Observations

- **BT** offers various solutions based on clients' needs. For example, it offers cost-effective branch solution with Agile Connect (Nuage) and Meraki SD-WAN; complex routing solutions with Cisco SD-WAN and VeloCloud SD-WAN; a cloud-first strategy based on VeloCloud SD-WAN and Cisco SD-WAN – CNF, vEdge cloud, Agile and vWan; and Fortinet SDWAN, Cisco SD-WAN, Agile or VeloCloud plus Zscaler for strong security requirements.
- **Colt's** SD-WAN is a fully managed service offering, which includes network connectivity, CPE installation and maintenance, and pro-active monitoring, supported by a series of comprehensive service level agreements (SLAs) guaranteed by service credit payments. This is coupled with a Colt SD-WAN management portal which provides a combination of Colt's fully managed service expertise and co-managed flexibility for customers to make their own routine SD-WAN and security policy changes in real time.
- **Deutsche Telekom**, under its highly secure managed service solution offerings, offers fully customized or rapid start packaged solutions for enterprises in specific industries. The SD-WAN service solutions are of the highest standards in terms of security and data protection. All central management components are operated according to strict German data protection guidelines in the Open Telekom Cloud, which is entirely owned and run by Deutsche Telekom.
- **GTT's** SD-WAN services continuously optimize a client's network in real time, using AI capabilities to route traffic over the best available WAN circuit. Management and visibility by application are available via the MNS system and GTT portal. GTT offers a highly secure end-to-end managed SD-WAN solution, bolstered by the addition of Fortinet Secure SD-WAN as an advanced security offering.
- **IBM** provides products and services targeted primarily toward digital business transformational companies, rather than purely network standalone transformations. In addition to a strong portfolio of its own solutions, the firm has an extensive partner solution base for the delivery of provider-agnostic SD-WAN, as well as in the optimization and performance accelerators areas. It combines these attributes with advanced AI and ML to reduce the overall costs of network transformation and operation.
- **Orange Business Services** offers an advisory-led engagement practice and a strong portfolio of SD-WAN solutions, focused primarily on large enterprises. The firm's SD network strategy, covering AI

MANAGED (SD) WAN – SERVICES

Observations (cont.)

- orchestration and its NextGen Hub, resolves any issues associated with multi-vendor and multi-network infrastructure integration and management.
- **Riedel Networks'** SD-WAN network is based on Cisco Viptela, which provides optimum SD-WAN and excellent performance for cloud services. It runs an extensive Cisco homogenous network, with more than 40 points of presence (PoPs) worldwide. The company offers the latest Cisco solutions such as Cisco SD-WAN Security with the new Catalyst 8000 Edge Platforms. Riedel Networks also delivers scalable and fast implementable solutions to many industries.
- **Verizon** has recommitted itself toward delivering advanced and powerful SD networking solutions, including announcements of Cisco SD-WAN (Viptela) and Meraki partnership and deployments. It provides different tiers of managed SD-WAN based on the fully and co-managed models of service. Verizon offers a network on-demand (NaaS) capability with bandwidth-on-demand and assured quality of service.
- **Vodafone** is actively expanding its managed SD-WAN services capabilities by supplying a wide range of enterprise-focused SD-WAN products and services based on Cisco Meraki and VeloCloud solutions, with the launch of Vodafone SD-WAN (managed SD-WAN, powered by Juniper) planned next year in Germany. The company has a broad-based solution, with an industry vertical focus on financial services; energy and utilities; retail and consumer goods; transport and logistics; manufacturing; and automotive.
- **Wipro** ensures consulting-led delivery of both off-the-shelf and highly tailored specific solutions, supported by a vast array of toolsets, products and processes to ensure operational deployment and management. Its portfolio includes Wipro digital Designit, Insightix™, netFactory, ServiceNXT, NetBox, #WanFreedom, Wipro SmartView for governance, Cloud Trust Security framework, Wipro HOLMES™ robotic process automation (RPA)/AI methods and toolsets, and partner solutions and products from companies such as VMware, Palo Alto Networks, Riverbed, HPE and Cisco.
- **CANCOM's** (Rising Star) SD-WAN as a service is based on the technology of its partners, Cisco and Fortinet. CANCOM operates as a carrier-neutral network service provider and has partnerships with a total of 10 of the world's leading carriers. It delivers value-added services and solutions that caters to the needs of the customers. It has a wide array of XaaS solutions available.

ORANGE BUSINESS SERVICES

Overview

The Orange group of companies has more than 269 million customers internationally with global revenues of around US$50.95 billion, and it delivers a broad selection of network services and solutions. Orange Business Services with 500-plus employees in Germany has its headquarters in Eschborn, near Frankfurt. Specialized teams are focused on solutions such as LAN, cybersecurity, collaboration, IoT and cloud, and verticals such as manufacturing. The company offers an advisory-led engagement practice and a strong portfolio of SD-WAN solutions, focused primarily at large enterprise. The firm's SDN strategy, covering AI orchestration and its NextGen Hub, resolves any issues associated with multi-vendor and multi-network infrastructure integration and management.

Strengths

Ease of migration: The company provides full compatibility between traditional WAN solutions and flexible SD-WAN by using virtual SD-WAN gateways, allowing easy migration from traditional WAN to SD-WAN in transformation projects. It offers a "walk in and take over" service for existing network and delivers complete management of transformations through to final state SD-WAN or advanced network.

Flexible SD-WAN coupled with vast partner ecosystem: Flexible SD-WAN is an automated, intelligent, global solution with on-demand virtualized services. It is centrally orchestrated for end-to-end performance and control. The solution can also be almost endlessly customized for a fully managed or co-managed service delivery. The SD offering ties security, network, edge and cloud together as required. The company also has a world-class partner ecosystem in the managed network, SDN, SD-WAN, multi-cloud network and multi-network integration spaces, including Cisco, Riverbed, Palo Alto, HPE/Aruba, Microsoft, Fortinet and numerous other partners.

Caution

In Germany, Orange Business Services is highly active in the large size enterprise segment for managed SD-WAN. This is one of the most competitive segments in the overall network transformation market, with many companies competing for segment dominance. Constant attention to the business needs of the segment and the introduction of new technologies and solutions from global markets such as ISEN (SASE) are required for maintaining leadership in this space.

2021 ISG Provider Lens™ Leader

Orange Business Services delivers a flexible and powerful portfolio of own and partner solutions, together with ease of migration or service change for enterprises in Germany.

Managed (SD) WAN Services – Australia

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 1 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Apcela	Product Challenger	Product Challenger	Product Challenger	Rising Star	Product Challenger	Product Challenger
Aryaka	Product Challenger	Not In	Market Challenger	Not In	Not In	Not In
AT&T	Market Challenger	Not In	Contender	Contender	Product Challenger	Contender
Aussie Broadband	Product Challenger	Product Challenger	Not In	Not In	Product Challenger	Not In
Avocent	Not In	Not In	Contender	Not In	Not In	Not In
BT	Product Challenger	Not In	Not In	Not In	Not In	Not In
BT Australasia	Not In	Not In	Product Challenger	Not In	Not In	Not In
Cato Networks	Not In	Not In	Product Challenger	Leader	Product Challenger	Product Challenger
Cisco	Not In	Market Challenger	Leader	Leader	Leader	Product Challenger
Citrix	Contender	Product Challenger	Product Challenger	Contender	Product Challenger	Not In
Coevolve	Rising Star	Not In	Not In	Not In	Not In	Not In
Comscentre	Contender	Contender	Not In	Not In	Not In	Not In
Data#3	Leader	Product Challenger	Product Challenger	Product Challenger	Contender	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 2 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Datacom	Leader	Product Challenger	Not In	Product Challenger	Contender	Product Challenger
Dicker Data	Not In	Not In	Leader	Product Challenger	Product Challenger	Not In
DXC	Product Challenger	Contender	Not In	Not In	Not In	Not In
Empired	Contender	Contender	Contender	Not In	Rising Star	Not In
Ericsson	Not In	Not In	Product Challenger	Product Challenger	Not In	Product Challenger
HPE Aruba	Not In	Not In	Leader	Not In	Leader	Leader
IBM	Leader	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Infosys	Leader	Leader	Leader	Leader	Leader	Leader
Juniper Networks	Not In	Not In	Product Challenger	Leader	Contender	Product Challenger
Logicalis	Product Challenger	Product Challenger	Contender	Not In	Not In	Not In
Lumen	Rising Star	Product Challenger	Product Challenger	Contender	Contender	Contender
Macquarie Telecom	Leader	Contender	Not In	Not In	Contender	Not In
Masergy	Not In	Not In	Contender	Not In	Not In	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 3 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
Megaport	Not In	Not In	Contender	Product Challenger	Contender	Not In
Microland	Contender	Contender	Contender	Not In	Contender	Not In
Nexion	Leader	Leader	Not In	Not In	Not In	Not In
Nokia Networks	Not In	Not In	Not In	Contender	Product Challenger	Product Challenger
NTT	Leader	Leader	Contender	Contender	Market Challenger	Market Challenger
Nuage Networks	Product Challenger	Not In	Contender	Not In	Not In	Not In
Open Systems	Product Challenger	Contender	Not In	Not In	Not In	Not In
Optus	Product Challenger	Contender	Product Challenger	Product Challenger	Contender	Leader
Orange Business Services	Leader	Leader	Leader	Leader	Leader	Not In
PCCW	Not In	Not In	Not In	Market Challenger	Not In	Not In
Qualcomm	Not In	Not In	Not In	Not In	Not In	Contender
Talari Networks	Not In	Not In	Not In	Market Challenger	Not In	Not In
Tata Communications	Leader	Not In	Not In	Not In	Not In	Not In

Networks – Software Defined Solutions and Services - Quadrant Provider Listing 4 of 4

	Managed (SD) WAN - Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Technology and Service Suppliers (core - 4G/5G)	Edge Technologies and Services	Enterprise 5G Solutions
TCS	Product Challenger	Rising Star	Product Challenger	Not In	Not In	Not In
Tech Mahindra	Leader	Leader	Leader	Leader	Leader	Product Challenger
Telstra	Leader	Leader	Leader	Leader	Leader	Leader
TPG Telecom	Not In	Not In	Not In	Contender	Contender	Market Challenger
Trend Micro	Not In	Not In	Contender	Not In	Not In	Not In
Verizon	Product Challenger	Market Challenger	Market Challenger	Product Challenger	Market Challenger	Leader
Versa Networks	Contender	Contender	Rising Star	Not In	Not In	Contender
VMware (Velocloud)	Not In	Not In	Leader	Not In	Not In	Not In
Vocus	Leader	Not In	Not In	Not In	Not In	Not In
Vodafone	Product Challenger	Market Challenger	Product Challenger	Not In	Not In	Rising Star
Wipro	Leader	Leader	Leader	Leader	Leader	Leader

ENTERPRISE CONTEXT

Managed (SD) WAN Services

This report is relevant to enterprises across all industries in Australia for evaluating service providers of enterprise WAN (primarily, enterprise SD-WAN or hybrid MPLS/IP WAN), which delivers managed solutions and associated services.

In this quadrant report, ISG highlights the current market positioning of providers of managed SD-WAN services for enterprises in Australia, and how each provider addresses the key challenges faced in the region. ISG observes a growing demand among enterprises for managed SD-WAN solutions and services to outsource IT functions and purchase them as well as consulting and professional services to assess, design and implement their enterprise networks, along with ongoing operations. These service providers offer a wide range of value-added services, which include configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support, zero-touch deployment and centralized management, and AI-based autonomous healing.

Australian enterprises are approaching local service providers, that offer matured SD-WAN technology with less application downtime and faster network access. Enterprises in Australia are seeking fully managed and co-managed SD-WAN services. Along with SD-WAN solution, few enterprises are focusing on implementing automation strategy for better network management, as well as making their networks fully managed with a security layer on the SD-WAN solution. Also, a few enterprises in the region are planning for tailored managed services to augment their enterprise digital transformation efforts.

The following can use this report to identify and evaluate different service providers:

IT and network management leaders should read this report to understand the relative positioning and capabilities of providers that can help them effectively consume managed SD-WAN services. The report also shows how the technical and integration capabilities as well as partnerships of service providers differ from the rest in the market.

Digital transformation professionals should read this report to understand how providers of managed SD-WAN services fit their digital transformation initiatives, and how they compare to one another.

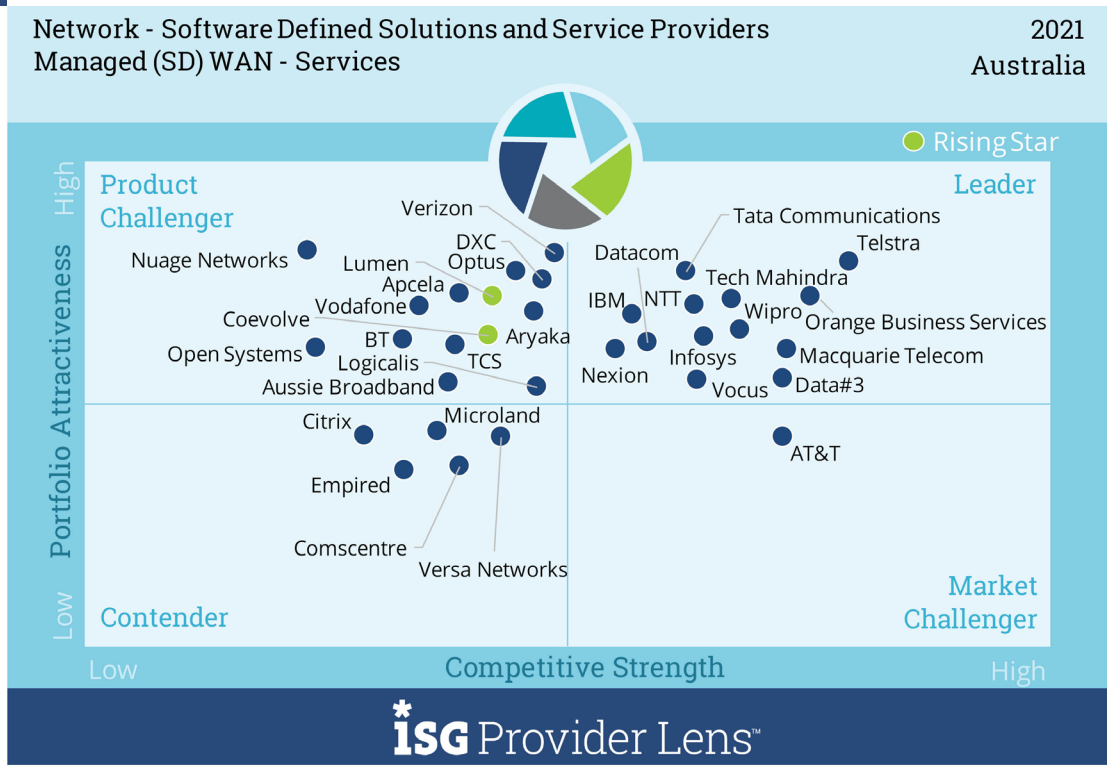
Procurement professionals should read this report to learn more about managed SD-WAN service suppliers, as payment schemes for such services are often based on SLAs and KPIs being met and/or levels of service/QoS. Some providers also offer pay-as-you-consume or similar payment arrangements, rather than traditional payment models.

MANAGED (SD) WAN SERVICES

Definition

This quadrant examines the providers of enterprise WAN (primarily enterprise SD-WAN, or hybrid MPLS/IP WAN) that deliver completely managed solutions and all associated services to enterprise customers.

SD-WAN provides more benefits of SDN technology than traditional hardware-based networking. It is an overlay architecture with a networking foundation that is much easier to manage when compared to legacy WANs. It mainly moves the control layer to the cloud, centralizing and simplifying network management. This overlay design abstracts software from hardware, enabling network virtualization and making the network more elastic. SD-WAN architecture reduces recurring network costs, offers network-wide control and visibility, and simplifies the technology with zero-touch deployment and centralized management. The key aspect of SD-WAN architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been as active as managed service providers, supplying complete managed SD-WAN solutions to enterprises, including hybrid MPLS/IP or MPLS/SDN offerings, as well as offering these solutions as white-label products for telco providers or integrators as part of their broader strategic implementations.



Source: ISG Research 2021

MANAGED (SD) WAN SERVICES

Eligibility Criteria

- Product/service managed WAN portfolio coverage, completeness and scope
- Ability to deliver and manage all hardware and software aspects
- Ability to rearchitect the existing MPLS-based WANs into hybrid WAN systems as required
- Management capability for the needed orchestration and control of the overall architecture
- Flexibility and ease of introduction of new services and deployments
- Stability and roadmap planning of the provider
- Reference customer/site volume in deployment
- Competitiveness of offering and commercial terms

Observations

- **Datacom** is one of Australasia's largest professional IT services companies. The company's managed SD-WAN service is built around ITILv3-compliant processes and functions, and is integrated with its service desk function. Managed WAN services integrate with enterprise-class monitoring and management tools.
- **Data#3** is a leading Australia-based IT services and solutions provider, delivering solutions spanning cloud, modern workplace, security, data and analytics, and connectivity. The company offers a highly competitive SD-WAN solution as a part of its connectivity portfolio, which also includes information technology-operational technology (IT-OT) networking and wireless networks.
- **IBM** has been providing leading managed IT services to Australia-based organisations for several decades now. The company has a broad portfolio of leading capability solutions as well as a well-qualified partner ecosystem in the managed WAN space. This enables IBM to consistently deliver comprehensive solutions to enterprises across a broad range of industries.
- **Infosys** has a particularly strong offering in Australia for SDN and networking, with around 15 percent of its overall revenue from this segment attributable to the Australian market. Australia is the third largest market for Infosys, representing approximately US$1 billion in revenue.

MANAGED (SD) WAN SERVICES

Observations (cont.)

- **Macquarie Telecom** provides telecommunications, cloud computing, data centre, government and cybersecurity services. It has a highly competitive managed SDN offering in Australia with advanced security features. It also has an agreement with Microsoft to deliver VMware SD-WAN by VeloCloud services through the Microsoft Azure Marketplace.
- **Nexion Networks** (Nexion) is a leading cloud and enterprise technology solutions provider in APAC, with headquarters in Australia. Nexion uses SD-WAN technology to connect its corporate customers to its OneCloud Nodes. It intends to deploy the OneCloud Nodes in strategic locations in Australia and globally.
- **NTT** provides network, infrastructure, security, cloud, and managed solutions. It has a strong legacy of providing high-quality SD-WAN services in Australia. NTT's new SDI initiative is based on its managed network overlay services (MNOS) platforms to enable easy multi-platform and vendor integration.
- **Orange Business Services** (Orange) is the global enterprise division of the Orange Group, and has been operating in Australia for more than 30 years. In late 2020 Orange announced a partnership with nbn, thus adding domestic managed services, including satellite and fixed internet, to its offerings for enterprises in Australia.
- **Tata Communications** is part of part of the global Tata Group and is a large telecommunications, IT services, consulting and business solutions company, headquartered in India. The company has been present in the IT market in Australia for many decades. It has multi-domain expertise across cloud, security and network services, and offers end-to-end solution to enterprise customers across these segments. Tata Communications offers fully managed and co-managed SD-WAN solutions.
- **Tech Mahindra** is a leading technology provider of digital transformation, consulting and business reengineering services and solutions, across 90 countries. The company launched operations in Australia in 1998, and has offices in Brisbane, Sydney, Melbourne, Perth and Canberra. The company's client base in Australia and New Zealand includes more than 45 clients and 5,500 working associates, and it has very strong capabilities in the managed SD-WAN space in Australia.

MANAGED (SD) WAN SERVICES

Observations (cont.)

- **Telstra** is Australia's largest telecommunications provider and has deep experience in network service and deployment. Telstra continues to scale its operational capability in the SD-WAN segment in Australia, and the APAC market in general, by bringing in new features and capabilities.
- **Vocus** is an Australia-based fibre and network solutions provider. The company has had several major managed SD-WAN wins recently, including a five-year deal with a major bank in Australia and a multi-million-dollar deal with a government department in the country.
- **Wipro** is a leading global IT, consulting and business process services provider and has a growing presence in Australia. Wipro's future strategy encompasses industry-specific and innovative solutions development in emerging technology segments such as cognitive computing and AI, human machine interface (HMI), smart machines, machine vision and blockchain. Its managed SD-WAN capability in Australia is also extensive.
- **Coevolve** (Rising Star) is a leading provider of telco-independent SD-WAN and multi-cloud networking solutions for global enterprises. Coevolve assists enterprises in the adoption of SD-WAN and other next-generation network technologies to deliver measurable quality improvements and significant total cost of ownership (TCO) benefits.
- **Lumen** (Rising Star), formerly known as CenturyLink, is a U.S. headquartered telco and networking company that provides a range of services, mainly to large enterprises, including content delivery networks (CDN), hybrid cloud and IT, security, unified communications, and IT and managed services. In Australia, Lumen leases bandwidth from major backbone bandwidth telco carriers such as Telstra, Optus and Vocus. Lumen does not operate its own data centres in Australia, but works closely with Australia-based data centre operator, NextDC.

ORANGE BUSINESS SERVICES (ORANGE)

Overview

Orange Business Services (Orange) is a global IT and communications services provider with nearly 25,000 staff members in 100 countries. Orange is the global enterprise division of the Orange Group and has been operating in Australia for more than 30 years. Its global network reaches 220 geographies and its global customer base encompasses 3,000 multinationals and two-thirds of the top global 100 companies. Orange assists Australia-based businesses during all stages of their data management journey, from connectivity (SD-WAN, IoT and cloud) to AI app development and cybersecurity.

Strengths

Industry-leading SD-WAN offering: Orange's flagship SDN offering, Flexible SD-WAN, is available in Australia and the rest of the world. The solution is fully automated with on-demand virtualised services and is centrally orchestrated for end-to-end performance and control. It provides improved security and support for multiple connection types, cost control and high-quality end-user experience for business-critical applications though a simple user-interface. Through multisourcing service integration (MSI), Orange can assist in managing customer's existing providers and third parties at a technical and operational level. MSI allows customers to consolidate the operational and technical management of existing and new IT service providers.

Strong SDN presence in the Australian market: Orange has been operating in Australia for more than 30 years, and currently has over 80 sales, presales and customer service personnel supporting SDN solutions for customers in the region. Orange delivers connectivity, cloud and cybersecurity services to large Australia-based enterprises in the natural resources, construction and engineering, and industrial sectors.

Solid growth strategy for the next few years: Orange recently launched its new strategic plan that will focus on accelerating growth, especially in networking and software-defined services segments over the next three years. Data and AI are at the core of Orange's strategy to build a more flexible and intelligent business-driven network that provides improved agility, automation and end-to-end performance monitoring. B2B will be a critical growth area for the Orange Group over the next four years. It aims to accelerate the transformation of its core business, the development of IT solutions and services and scale up cybersecurity.

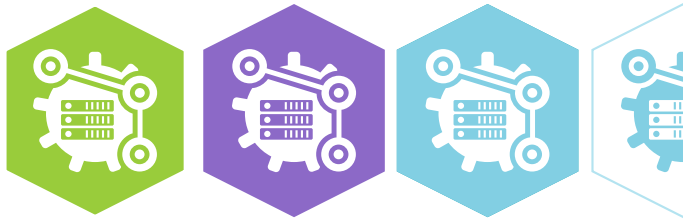
Caution

Despite having a longstanding presence in Australia, Orange will need to look at further innovations in the SDN segment as competition intensifies in the region from both local and global providers over the next few years.

2021 ISG Provider Lens™ Leader

Orange has a strong SDN presence and capability in the Australian market and can meet the needs of most sizes of organization.

Methodology



METHODOLOGY

The research study "ISG Provider Lens™ Networks – Software Defined Solutions and Services 2021" analyzes the relevant software vendors/service providers in the U.S. market, based on a multi-phased research and analysis process, and positions these providers based on the ISG Research methodology. The study was divided into the following steps:

1. Definition of Networks – Software Defined Solutions and Services 2021 market;
2. Use of questionnaire-based surveys of service providers/vendor across all trend topics
3. Interactive discussions with service providers/vendors on capabilities and use cases.
4. Leverage ISG's internal databases and advisor knowledge and experience (wherever applicable).
5. Detailed analysis and evaluation of services and service documentation based on the facts and figures received from providers and other sources.
6. Use of the following key evaluation criteria:
   - Strategy & vision
   - Innovation
   - Brand awareness and presence in the market
   - Sales and partner landscape
   - Breadth and depth of portfolio of services offered
   - Technology advancements

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Distinguished Analyst

Distinguished lead analyst and author Craig Baty has extensive research and thought leadership experience in the Asia Pacific and Japan ICT markets. Craig is Principal and Founder of DataDriven, an Asia Pacific-based research and advisory firm that is an ISG Research partner. Craig has over 30 years of executive and board-level experience in the ICT industry, including as a Group VP and Head of Gartner Research AP/J, CEO of Gartner Japan, Global VP Frost & Sullivan, EGM Marketing and CTO Fujitsu ANZ, GM Marketing Strategy and Alliances at BT Syntegra Australia, and more recently as VP Global Strategy and VP Digital Services in Fujitsu Tokyo HQ. As a well-known ICT commentator and analyst, Craig has written more than 200 research pieces and presented at more than 1,500 events globally. He is also regularly quoted in the media. Craig is actively involved in the ICT community as a board member of the Australian Information Industry Association (AIIA) and other appointments. He is currently pursuing a Doctor of Business Administration by Research (DBA) in the area of national culture and its influence on IT strategic use and investment, and is a former Advisor to the Japanese PM & Cabinet Next-Gen Global Leadership Program (Cross Cultural Communications).

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Partner and Global Head – ISG Provider Lens/ISG Research

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ISG (Information Services Group) (Nasdaq: III) is a leading global technology research and advisory firm. A trusted business partner to more than 700 clients, including more than 75 of world's top 100 enterprises, ISG is committed to helping corporations, public sector organizations, and service and technology providers achieve operational excellence and faster growth. The firm specializes in digital transformation services, including automation, cloud and data analytics; sourcing advisory; managed governance and risk services; network carrier services; strategy and operations design; change management; market intelligence and technology research and analysis. Founded in 2006, and based in Stamford, Conn., ISG employs more than 1,300 digital-ready professionals operating in more than 20 countries—a global team known for its innovative thinking, market influence, deep industry and technology expertise, and world-class research and analytical capabilities based on the industry's most comprehensive marketplace data. For more information, visit www.isg-one.com.