ISG Provider Lens™

Network - Software Defined Solutions and Services Partners

2020

Quadrant Report

A research report comparing provider strengths, challenges and competitive differentiators

July 2020

Customized report courtesy of:

orange™ Business Services

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 was current as of March, 2020. ISG recognizes that many mergers and acquisitions have taken place since that time but those changes are not reflected in this report.

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ISG Provider Lens™

ISG Provider Lens™

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EXECUTIVE SUMMARY

Existing managed LAN and WAN services, multiprotocol label switching (MPLS) and related technologies form the backbone of the enterprise customer installed base of telcos and other communication services providers and still account for most of the revenue generation. This trend, however, has been rapidly changing over the last three years. The software-defined network (SDN), closely related to network function virtualization (NFV), and software-defined WAN (SD-WAN) technologies and services are evolving and rapidly penetrating the enterprise market. A similar trend exists with several related network services such as performance assurance (management) and 4G and 5G mobility with additional (non-core) mobile servicers based on the faster mobile data stream standards, along with their triggers and influences.

In the U.S., the main factors that drive these rapid changes in enterprises are:

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

Increasing flexibility and agility: Enterprises have become increasingly focused on improving the integration, automation, orchestration and management of network resources and processes. This has evolved to encompass NFV and has since led to software-defined networking in a wider sense. This trend is being driven by enterprises' desire to seamlessly add applications and network resources in order to meet business and user goals more efficiently and securely without creating silos or depending on vendors. This is often expressed by the business itself as increasing flexibility and agility.

Increasing customer satisfaction while boosting sales: The ability to respond quickly and seamlessly to customer enquiries and rapidly provide (often automatically) new services via SDN helps to elevate the client experience, boost sales and retain customers.

Reducing costs and improving usage efficiency: Enterprises can improve network utilization efficiency while reducing network usage costs even beyond the savings achieved by adopting an NFV strategy. This is particularly relevant with the explosion of data usage in mobile devices, often in areas that are not business critical, and while using social media applications or other related services. Traffic can be routed over lower cost connections and at reduced reliability and quality levels automatically via SD pathways with little or no human interaction involved.

Simplifying management and planning of networks and integrating more fully 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 SLA/KPI based rules.

Forming a basis for new or near-term innovative technologies and solutions: Many new innovations (such as intent-based networks, artificial intelligence /machine learning-driven solutions, services and systems, rapid hot spot provisioning and data flow allowance, self-healing networks, etc.) require the flexibility and abilities of SDN in order to fully be utilized and drive solutions to their full potential.

The aforementioned factors have been driving significant changes to networks and their operations over the past three to four years. Most telecommunication service suppliers and network service suppliers, as well 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 SD-WAN implementations to reap benefits in a shorter term or prepare themselves for other advanced technological innovations such as intent-based networks that utilize AI/ML interactions and control.

The U.S. currently holds a 40 to 41 percent share in the global SDN market. The GSMA estimated that the region will report a compound annual growth rate of 24 to 25 percent during 2019-2020, while publicly reported figures from multiple sources range between 24 and 43 percent. The presence of advanced connectivity infrastructure along with replacement and update of primarily hardware-based controllers and switching methods, together with a high level of proliferation of 4G and 5G pilot mobility solutions, are boosting its market growth. This is further driven by the transition of many enterprises to cloud and multi-cloud environments which are well supported by SDN. Telecom providers in the region are investing in advanced networking technologies to improve their infrastructure capabilities. Many of the SDN solutions developed in the U.S. are being rolled out on a global scale to traditional markets in Europe and the Asia Pacific region. They are also making their way to less penetrable markets such as Africa and South America due to the price point and ease of deployment in these regions.

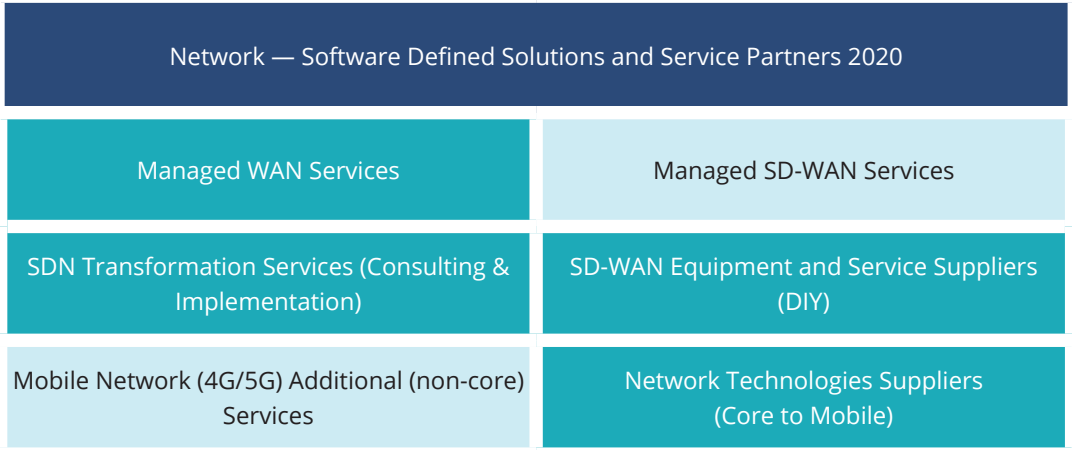
Many service providers that are reviewed in this study are involved in pilot projects and are often converting them into production-level deployments. Some have already completed such activities or have demonstrated many such instances on behalf of their clients. This progression, coupled with the relative newness of SDN as a whole, leads ISG to believe that many of the companies that are currently categorized as product challengers or market challengers in this study could improve their positioning over the course of the year to become leaders in their respective segments.

It must be noted that significant volatility exists in the constellation of market providers, partly due to the multitude of mergers and acquisitions that occurred during the last 18 months. This trend is expected to continue and may even escalate during 2020 as SD networking becomes mainstream.

As part of this ISG Provider Lens™ quadrant study, we are introducing the following six quadrants under Network — Software Defined Solutions and Service Partners 2020.

Introduction

Simplified illustration



Source: ISG 2020

Definition

This ISG Provider Lens™ study examines the different kinds of network offerings related to software-defined networking. These include SDN, SD-WAN and associated core and mobility service offerings related to those segments, as well as add-on services utilizing SDN within the 4G/5G mobile space. It also assesses the more traditional managed WAN market offerings. For users, both managed WAN and SDN-related markets are important. This study accounts for the changing market requirements and provides a consistent market overview of the segments. It also gives concrete decision-making support to help user organizations to evaluate and assess the offerings and performance of providers.

The areas described within the following section are associated with SDN, mobility and the more traditional managed WAN services:

Definition (cont.)

Scope Of The Report

Managed WAN Services

Managed WAN services cover the features and functionality that carriers offer in their WAN and at the customer point of demarcation. They are a collection of value-added services that offer monitoring and reporting, security and outsourced customer-premises equipment (CPE) functions. Many enterprises see managed WAN services as an approach to outsource IT functions and purchase them along with consulting and professional services to assess, design and implement their enterprise networks. At the basic level, the managed WAN services offered by carriers provide monitoring and alerts for critical problems such as network outages. Higher tiers of service can add configuration management, proactive troubleshooting and trouble resolution, service-level agreement (SLA) management, more sophisticated and granular monitoring and reporting, on-the ground CPE installation and hardware support to ensure that CPE software is up to date and configured correctly, and the overall lifecycle management. This section covers all the major suppliers of managed WAN services for enterprises.

Managed SD-WAN Services

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 services providers, supplying complete managed SD-WAN solutions to enterprises and offering them as white-label services that telco providers or integrators offer to clients as part of broader strategic implementations. This section covers all the major suppliers of managed SD-WAN services for enterprises.

Definition (cont.)

SDN Transformation Services (Consulting and Implementation)

SD-WAN is much easier to manage than legacy WANs. It essentially centralizes and simplifies network management and eases deployment by having a cloud-based control layer. This overlay design abstracts software from hardware, enabling network virtualization and making it more elastic. One of the key aspects of the architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. 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) deployments and are increasingly partnering with licensed telco/service providers for their delivery packages in this space.

This quadrant covers all the advisory/consulting, hardware and software, management/reporting tools, applications and services associated with delivering SD-WAN, starting from consulting to system and services delivery, for enterprises to run by themselves.

SD-WAN Equipment and Service Suppliers (DIY)

SD-WAN is one of the fastest-growing areas of technology and innovation in enterprises, allowing for innovative service rollouts and provisioning them in a much easier and cost-effective manner. It eliminates vendor lock-in and associated risks unlike the earlier hardware-based networks. It offers cloud-based and one-click management as well as potential cost reduction, often requiring fewer technical staff for its operation. SD-WAN will be essential for enterprises that are already exploring intent-based networking (AI/MI 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, preferring, for a variety of reasons, 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.

This section should cover all the hardware and software, management/reporting tools, applications and services associated with delivering SD-WAN for enterprise-owned operations.

Definition (cont.)

SD Network Technologies Suppliers (Core to Mobile)

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 (such as OpenFlow) 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. Such a protocol allows for the dynamic and automatic provisioning of virtual network segments and virtual routing services in both physical and virtual networking devices. 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 functionality and associated Wi-Fi networks, access points (APs), SDMNs and SD-LANs that includes both wireless (SD-WLAN) or mobile (SD-WMLAN).

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-WAN strategy for branch or remote office locations, including Wi-Fi/wireless and LAN/SD-LAN/SD-WMLAN solutions.

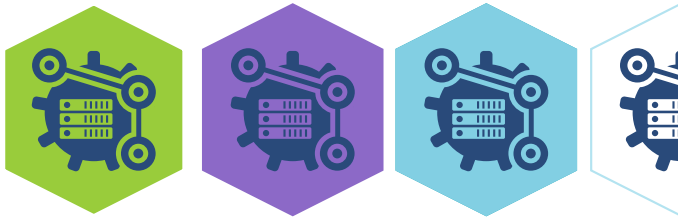
Mobile Network (4G/5G) Additional (non-core) Services

Fifth-generation mobile networks or wireless systems (commonly known as 5G) are the next telecommunication standards beyond the current LTE (long-term evolution)/4G technology and operates in the millimeter wavebands (28, 38 and 60 GHz). It is designed to provide higher capacity than the current 4G, allowing for a greater density of mobile broadband users at higher transfer speeds and supporting more device-to-device, reliable and massive machine communications. It also aims at lower latency and battery consumption than 4G equipment and is targeted at mobile high-speed data and the internet of things (IoT). This segment covers specific mobility-targeted services or solutions, applications, management systems and methods, end-device control and management, and related services. These services are offered by service providers or suppliers as discrete solutions or modules that will integrate with or rely on SDN or SD-WAN.

Definition (cont.)

This section covers all suppliers of these additional services that make use of SD systems via LTE/4G or 5G delivery. It does not cover the core licensed mobile telephony/ data services themselves.

In this independent study, following the format of the internationally successful Provider Lens™ series, ISG sets out to deliver a comprehensive and credible research program based on an extensive evaluation of criteria that cover all the major and relevant telcos and service providers.



Provider Classifications

The ISG Provider Lens™ quadrants were created using an evaluation matrix containing four segments, where 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 their 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 lag 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 have therefore still some potential to optimize their portfolio and increase their attractiveness.

Contender

"Contenders" are still lacking mature products and services or sufficient depth and breadth of their offering, while also showing some strengths and improvement potentials 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) who ISG believes has a strong potential to move into the leader's quadrant.

Rising Star

Rising stars are mostly product challengers with high future potential. When receiving the "rising stars" award, such companies have a promising portfolio, including the required roadmap and an adequate focus on key market trends and customer requirements. Also, the "rising stars" has an excellent management and understanding of the local market. This award is only given to vendors or service providers that have made extreme progress towards their goals within the last 12 months and are on a good way to reach the leader quadrant within the next 12-24 months, due to their above-average impact and innovative strength.

Not In

This service provider or vendor was not included in this quadrant as ISG could not obtain enough information to position them. This omission does not imply that the service provider or vendor does not provide this service.

Managed SD-WAN Services – U.S.

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 1 of 5

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Apcela	Not in	Not in	Leader	Rising Star	Leader	Rising Star
Arista	Not in	Not in	Not in	Contender	Contender	Not in
Aryaka	Not in	Not in	Market Challenger	Market Challenger	Not in	Not in
AT&T	Leader	Leader	Leader	Leader	Leader	Leader
BT	Product Challenger	Product Challenger	Product Challenger	Not in	Not in	Not in
Cato Networks	Not in	Not in	Product Challenger	Product Challenger	Leader	Product Challenger
Centrify	Not in	Not in	Not in	Not in	Contender	Product Challenger
CenturyLink	Leader	Leader	Leader	Not in	Product Challenger	Not in
Cisco	Not in	Not in	Not in	Leader	Leader	Not in
Cloudgenix	Not in	Not in	Not in	Not in	Product Challenger	Not in

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 2 of 5

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Colt	Market Challenger	Product Challenger	Product Challenger	Not in	Not in	Not in
Comcast	Not in	Not in	Not in	Not in	Not in	Market Challenger
Computacenter	Not in	Not in	Product Challenger	Product Challenger	Not in	Not in
Dell Technologies	Not in	Not in	Market Challenger	Not in	Not in	Not in
Deutsche Telekom	Product Challenger	Not in	Product Challenger	Not in	Not in	Not in
Ericsson	Not in	Not in	Not in	Not in	Product Challenger	Not in
Extreme Networks	Not in	Not in	Product Challenger	Product Challenger	Rising Star	Leader
Fatpipe	Not in	Not in	Not in	Not in	Product Challenger	Product Challenger
Flexiwan	Not in	Not in	Not in	Not in	Not in	Contender
Fujitsu	Contender	Contender	Not in	Not in	Not in	Not in

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 3 of 5

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
GTT	Product Challenger	Leader	Product Challenger	Not in	Not in	Product Challenger
HCL	Rising Star	Product Challenger	Product Challenger	Product Challenger	Leader	Not in
HPE	Not in	Not in	Not in	Contender	Not in	Not in
IBM	Leader	Leader	Leader	Leader	Leader	Product Challenger
Infosys	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not in
Juniper	Not in	Not in	Leader	Leader	Leader	Not in
Logicalis	Product Challenger	Rising Star	Contender	Not in	Not in	Not in
Masergy	Market Challenger	Market Challenger	Not in	Market Challenger	Market Challenger	Not in
Mphasis	Product Challenger	Not in	Product Challenger	Not in	Not in	Not in
NTT	Leader	Leader	Product Challenger	Product Challenger	Not in	Not in

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 4 of 5

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Nuage Networks	Not in	Not in	Not in	Not in	Product Challenger	Not in
Orange Business Services	Product Challenger	Leader	Leader	Leader	Not in	Leader
Palo Alto	Not in	Not in	Not in	Not in	Not in	Product Challenger
PCCW	Market Challenger	Market Challenger	Not in	Not in	Market Challenger	Leader
Pica8	Not in	Not in	Not in	Not in	Contender	Contender
Riedel Networks	Product Challenger	Product Challenger	Not in	Not in	Not in	Not in
RiverBed	Not in	Not in	Not in	Not in	Not in	Product Challenger
Silver Peak	Not in	Not in	Not in	Product Challenger	Not in	Product Challenger
Sprint	Leader	Leader	Product Challenger	Product Challenger	Product Challenger	Leader
Talari	Not in	Not in	Not in	Product Challenger	Not in	Not in

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 5 of 5

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
TCS	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not in	Product Challenger
Tech Mahindra	Product Challenger	Product Challenger	Product Challenger	Not in	Not in	Product Challenger
Telefonica	Product Challenger	Not in	Contender	Not in	Not in	Not in
Telstra	Product Challenger	Product Challenger	Not in	Not in	Not in	Not in
T-Mobile	Not in	Not in	Not in	Not in	Not in	Market Challenger
Verizon	Leader	Leader	Leader	Leader	Leader	Leader
Versa	Product Challenger	Product Challenger	Not in	Product Challenger	Product Challenger	Not in
VMware	Not in	Not in	Not in	Leader	Not in	Not in
Vodafone	Not in	Not in	Not in	Not in	Not in	Product Challenger
Wipro	Product Challenger	Product Challenger	Rising Star	Product Challenger	Product Challenger	Product Challenger

ENTERPRISE CONTEXT

Managed SD-WAN Services

This report is relevant to enterprises across all industries in the U.S. for evaluating service providers of managed software-defined wide-area network SD-WAN 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 services to outsource IT 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 offer a collection of value-added services that offer configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support and AI-based autonomous healing.

Enterprises in the U.S., like those elsewhere in the world, still have a minority of SD-WANs being managed. Yet ISG expects more managed services as the market matures. As a result, in many cases, enterprises transitioning to SD-WAN use hybrid MPLS/SD-WAN networks. Accordingly, providers offer hybrid support via their managed services offerings.

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.

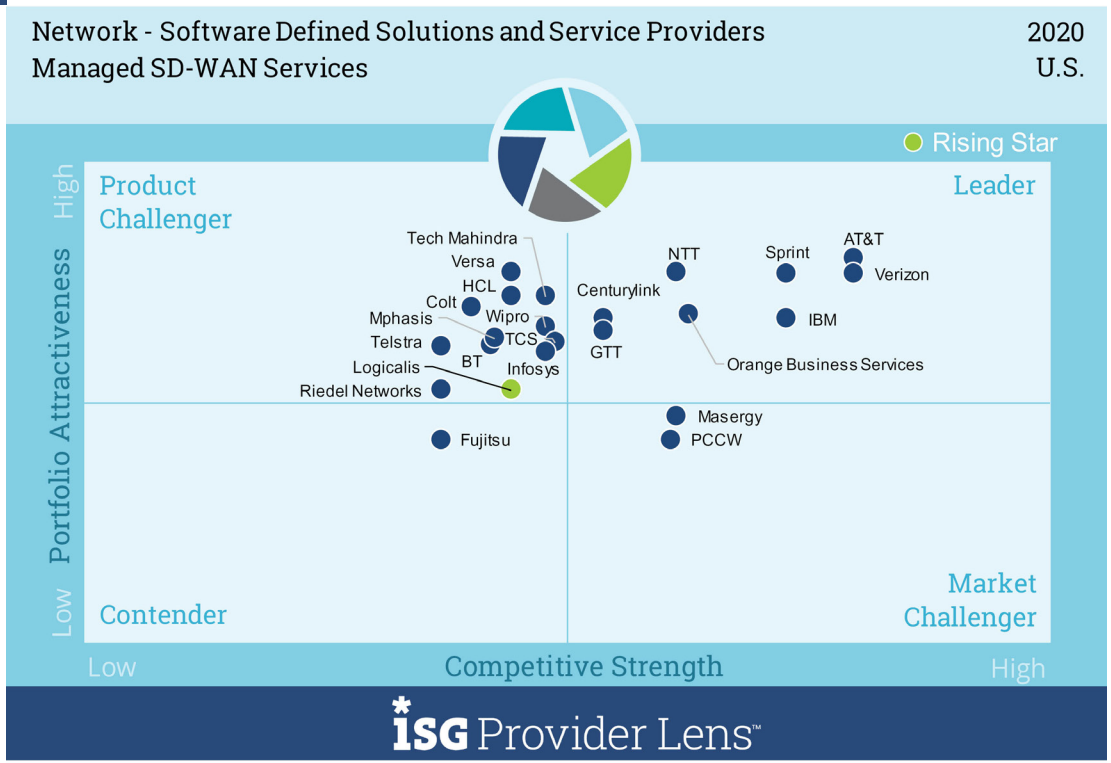
Digital transformation professionals should read this report to understand how providers of managed SD-WAN services fit their digital transformation initiatives and how they compare to one another.

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

SD-WAN provides the benefits of SDN technology over traditionally hardware-based networking. Managed SD-WAN provides those benefits as a managed service in the same way as traditional managed WAN via an outsourced agreement with a provider. SD-WAN is an overlay architecture providing a networking foundation that 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 it more elastic. The 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 the 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, supplying complete managed SD-WAN solutions to enterprises and offering them as white-label services that telco providers or integrators offer to clients as part of their broader strategic implementations.



Source: ISG Research 2020

MANAGED SD-WAN SERVICES

Definition (cont.)

At the basic level, managed SD-WAN services offer a full supply and operation of complete end-to-end SD-WAN systems and networks, supplying operations, monitoring and alerts that are sometimes intent based, automatic, AI-based or even self-healing, which is in its infancy but developing rapidly over the next two years. They also extend to configuration management, proactive troubleshooting and trouble resolution, service-level agreement (SLA) management, on-the-ground equipment installation, hardware and software support, overall lifecycle management, and customer interactions and app management.

For this study, ISG does not expect the majority of SD-WANs implementations to be managed SD-WANS. However, passing SD-WANS from a DIY to a managed state, or even switching over to managed SD-WAN from traditional managed WAN is a growing segment of the overall deployment base. The hybrid MPLS/SD-WAN network in a managed or as a service configuration is also a major trend in the marketplace. These tendencies in terms of take up are dependent on geographical aspects.

Eligibility Criteria

- Product/service SD portfolio coverage, completeness and scope;
- Ability to deliver and manage all hardware and software aspects;
- 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

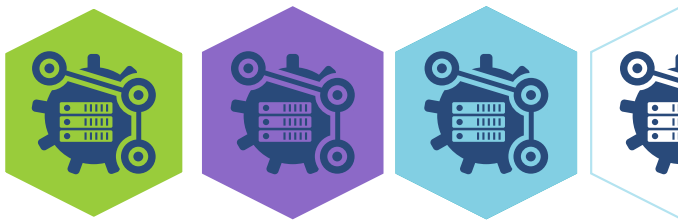
Observations

- In the U.S., **AT&T** uses a managed network services (MNS) and automation strategy with service centricity for network management and integrating a range of existing or new infrastructures, services and support offerings into a fully managed package.
- **CenturyLink** has added an extensive partnership ecosystem to its acquired company base in the SD-WAN field. It offers consultancy services to deliver a wide range of client and industry specific solutions, including advanced embedded security solutions and managed operations.
- **GTT** offers a wide range of options within its managed SD-WAN portfolio in the U.S. The firm leverages its global, tier 1 IP backbone to transport client traffic between locations, to any destination on the internet or to any of the secure interconnected cloud service providers around the world.
- **IBM's** managed SD-WAN offerings are supported by IBM Global Technology Services (GTS) with additional support from the telecom, media and entertainment divisions. 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.
- **NTT** has a long track record of delivering innovative SD-WAN solutions in the global and U.S. markets. It covers more than 190 countries with a comprehensive portfolio of fully managed and co-managed solutions, making it well positioned to address the requirements of large multi-national enterprises.
- **Orange Business Services** offers various levels of service management as a flexible managed service delivery for enterprise. Its managed SD-WAN offerings include flexible SD-WAN with full multi-network compatibility across virtual SD-WAN gateways. The solutions can be delivered as fully managed or co-managed.

MANAGED SD-WAN SERVICES

Observations (cont.)

- **Sprint** offers fully managed SD-WAN within MNS. These include MNS Complete, MNS Collaborative and MNS Monitor and Notify (M&N). It also provides Sprint Compass, a web portal with an interactive network management and reporting tool with self-management functions.
- **Verizon** delivers a comprehensive portfolio of its own SD-WAN solutions and services from its partner network in a managed service wrapper. The company uses an application-aware routing method, coupled with tools, ROI calculators and optimization services to provide the best-fit solutions as per specific enterprise needs.
- **Logicalis**, a rising star in this quadrant, has an extensive portfolio of managed and hosted ICT SDN services that encompass the end-to-end management of multi-vendor and multi-technology environments. It has extended its portfolio to encompass managed SD-WAN services. The firm enables enterprise clients to take up a flexible approach to operations and transformation projects that are focused mainly on U.S. and Europe-centric networks.



ORANGE BUSINESS SERVICES

Overview

Orange Business Services delivers a wide range of network services and solutions in the U.S. The company offers an advisory-led engagement practice and a strong portfolio of SD-WAN solutions. It can combine or integrate MPLS, SD-WAN, security, mobility and internet services with WAN optimization and application visibility services. These services are offered through various levels of service management as a flexible managed service delivery for enterprise. The firm's SD networks strategy, covering AI orchestration and its NextGen Hub, resolves any issues with multi-vendor and multi-network infrastructure integration and management. The pricing and offerings are attractive and competitive in the U.S. market.

Strengths

Flexible core delivering business flexibility: 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.

Flexible SD-WAN with good coverage: Orange Business Services maintains a large coverage in the U.S. through its core and partnership networks and services. It provides full compatibility with flexible SD-WAN through virtual SD-WAN gateways, facilitating easy migration to SD-WAN in transformational projects.

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. These assets, together with advisory abilities, allow the company to deliver comprehensive enterprise-specific solutions.

Caution

Like many large players, Orange Business Services is challenged by both incumbent and new entrant competitors in this rapidly expanding segment in the U.S. Constant attention to the business needs of the segment and the introduction of new technologies and solutions from global markets are required for maintaining leadership in this space.

2020 ISG Provider Lens™ Leader

Orange Business Services delvers highly effective and innovative managed SD-WAN solutions in the U.S.

Managed SD-WAN Services – U.K.

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 1 of 4

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Alten	Not in	Not in	Product Challenger	Not in	Contender	Contender
Altran	Not in	Not in	Product Challenger	Product Challenger	Product Challenger	Not in
Apcela	Contender	Not in	Contender	Product Challenger	Product Challenger	Product Challenger
Aryaka	Not in	Market Challenger	Not in	Market Challenger	Market Challenger	Not in
AT&T	Product Challenger	Product Challenger	Product Challenger	Not in	Product Challenger	Product Challenger
Axians	Not in	Market Challenger	Not in	Not in	Not in	Not in
BT	Leader	Leader	Leader	Leader	Leader	Leader
Cancom	Contender	Contender	Product Challenger	Not in	Not in	Not in
Cato Networks	Not in	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not in
CenturyLink	Product Challenger	Product Challenger	Product Challenger	Not in	Product Challenger	Product Challenger
Cisco	Not in	Not in	Not in	Leader	Leader	Not in
Claranet	Product Challenger	Market Challenger	Not in	Not in	Not in	Not in
Colt	Rising Star	Product Challenger	Product Challenger	Product Challenger	Not in	Not in

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 2 of 4

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Computacenter	Product Challenger	Not in	Rising Star	Market Challenger	Leader	Not in
Cyient	Not in	Not in	Contender	Not in	Contender	Contender
Deutsche Telekom	Leader	Leader	Leader	Product Challenger	Leader	Leader
EE	Not in	Not in	Not in	Not in	Not in	Market Challenger
Ensign	Market Challenger	Not in	Not in	Not in	Not in	Not in
Ericsson	Not in	Not in	Not in	Not in	Product Challenger	Not in
Extreme Networks	Not in	Not in	Contender	Product Challenger	Product Challenger	Not in
Fujitsu	Product Challenger	Not in	Not in	Not in	Not in	Not in
GTT	Rising Star	Product Challenger	Product Challenger	Not in	Not in	Not in
HCL	Leader	Leader	Leader	Not in	Leader	Not in
HPE	Not in	Not in	Not in	Contender	Contender	Not in
IBM	Leader	Leader	Leader	Leader	Leader	Leader
Infosys	Leader	Leader	Leader	Rising Star	Leader	Leader

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 3 of 4

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Juniper	Not in	Not in	Not in	Not in	Market Challenger	Not in
Logicalis	Product Challenger	Not in	Contender	Not in	Not in	Not in
LTTS	Not in	Not in	Product Challenger	Not in	Product Challenger	Product Challenger
Masergy	Not in	Not in	Not in	Contender	Not in	Not in
Mphasis	Not in	Rising Star	Rising Star	Not in	Not in	Not in
NTT	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Nuage Networks	Not in	Not in	Not in	Not in	Product Challenger	Not in
Orange Business Services	Leader	Leader	Leader	Leader	Leader	Leader
PCCW	Contender	Contender	Not in	Not in	Not in	Contender
Prodapt	Product Challenger	Not in	Product Challenger	Product Challenger	Product Challenger	Contender
Riedel Networks	Contender	Product Challenger	Not in	Not in	Not in	Not in
Silver Peak	Not in	Not in	Not in	Product Challenger	Not in	Not in
Sprint	Product Challenger	Product Challenger	Not in	Product Challenger	Not in	Product Challenger

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 4 of 4

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Talari	Not in	Not in	Not in	Product Challenger	Not in	Not in
TCS	Leader	Leader	Leader	Rising Star	Leader	Product Challenger
Tech Mahindra	Leader	Leader	Leader	Leader	Rising Star	Rising Star
Telefonica	Product Challenger	Contender	Market Challenger	Not in	Not in	Market Challenger
Telia	Product Challenger	Product Challenger	Product Challenger	Contender	Not in	Not in
Teneo	Not in	Contender	Not in	Not in	Not in	Not in
Three	Not in	Not in	Not in	Not in	Not in	Product Challenger
Verizon	Product Challenger	Rising Star	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Versa	Product Challenger	Product Challenger	Not in	Product Challenger	Not in	Product Challenger
Virgin	Product Challenger	Not in	Not in	Not in	Not in	Market Challenger
VMware	Not in	Not in	Not in	Leader	Not in	Not in
Vodafone	Leader	Leader	Leader	Not in	Leader	Leader
Wipro	Leader	Leader	Leader	Leader	Leader	Leader

ENTERPRISE CONTEXT

Managed SD-WAN Services

This report is relevant to enterprises across all industries in the U.K. for evaluating service providers of managed software defined wide-area network SD-WAN services.

In this quadrant report, ISG lays out the current market positioning of managed SD-WAN services providers in the U.K., and how they address the key challenges enterprises face in the region. ISG observes a growing demand among enterprises for managed SD-WAN services to outsource IT 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 offer a collection of value-added services that offer configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support. Furthermore, British enterprises are gradually opening up to emerging technologies including possibilities with intent-based networking, which is a foundational layer for making the network autonomous. However, they are cautious about the capital investments, and investment protection remains their priority.

Enterprises in the U.K., like those elsewhere in the world, still have a minority of SD-WANs being managed. Yet, ISG expects more managed services as the market matures. As a result, in many cases, enterprises transitioning to SD-WAN use hybrid MPLS/SD-WAN networks. Accordingly, providers offer hybrid support via their managed services offerings.

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.

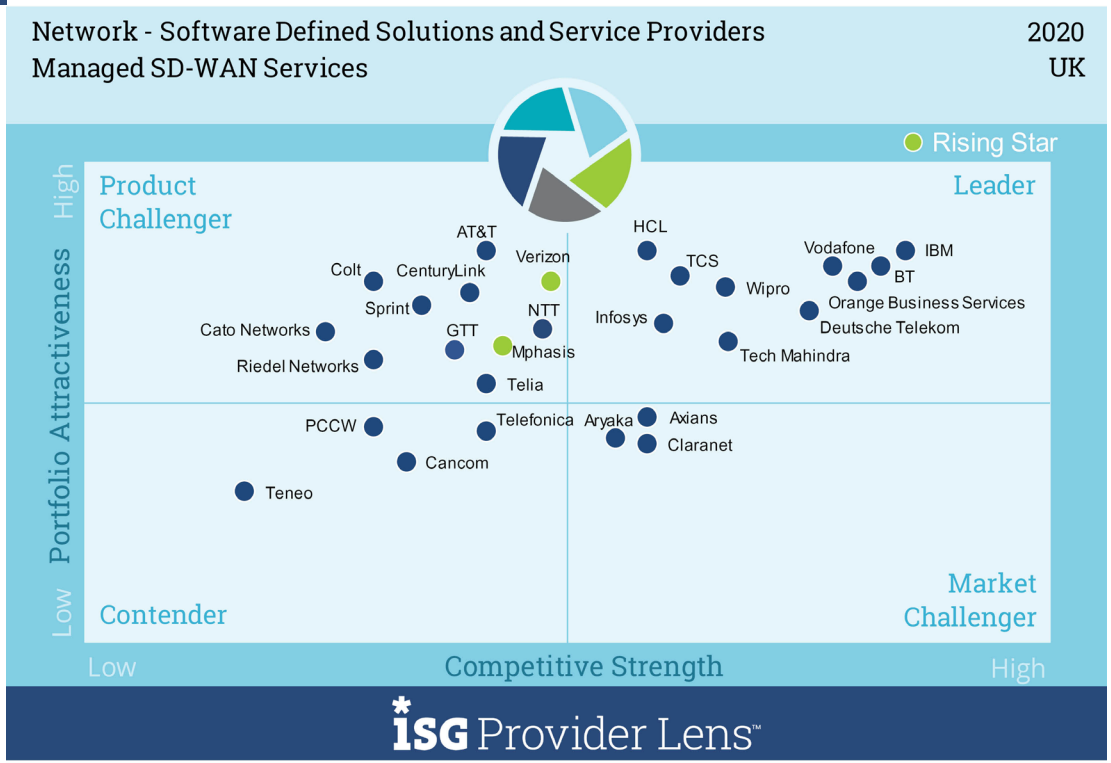
Digital transformation professionals should read this report to understand how providers of managed SD-WAN services fit their digital transformation initiatives and how they compare to one another.

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

SD-WAN provides the benefits of SDN technology to traditional hardware-based networking. Managed SD-WAN provides those benefits as a managed service in the same way as traditional managed WAN via an outsourced agreement with a provider. SD-WAN is an overlay architecture providing a networking foundation that is much 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. SD-WAN architecture reduces recurring network costs, offers network-wide control and visibility and simplifies the technology with zero-touch deployment and centralized management. Key to the SD-WAN architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been active increasingly as managed service providers supplying complete managed SD-WAN solutions to enterprises as well as offering them white label to telco providers or integrators that can be offered to their clients as solutions forming a part of broader strategic implementations.



Source: ISG Research 2020

MANAGED SD-WAN SERVICES

Definition (cont.)

At the basic level, managed SD-WAN services offer full supply and operation of complete end-to-end SD-WAN systems and networks, supplying operations, monitoring and alerts, sometimes intent based, automatic, AI based or even self-healing, which is in its infancy, but likely to develop rapidly over the next two years. They also include all configuration management, proactive troubleshooting and trouble resolution, service-level agreement (SLA) management, on-the-ground equipment installation, hardware and software support and the overall lifecycle management as well as customer interactions and app management.

ISG does not expect the majority of SD-WANs being implemented to be managed SD-WANs during the time scope of this study, however, passing SD-WANs from a DIY to a managed state, or even switching over to managed SD-WAN from traditional managed WAN enterprises is a growing segment of the overall deployment base. Hybrid MPLS/ SD-WAN networks in a managed or as-a-service configuration is also a major trend in the marketplace. These trends, however, differ by geography.

Eligibility Criteria

- Product/service SD portfolio coverage, completeness and scope;
- Ability to deliver and manage all hardware and software aspects;
- Management capability of the overall architecture;
- Flexibility and ease of introducing new services and deployments;
- Stability and roadmap planning of the provider;
- Reference customer/site volume in deployment;
- Competitiveness of offering and commercial terms.

MANAGED SD-WAN SERVICES

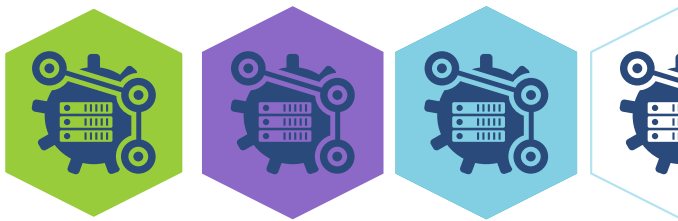
Observations

- **BT's** approach for SD-WAN is based on its technical innovation engagements across the world. The company is on its way to launch three new digitally native SD-WAN environments.
- **Deutsche Telekom** has a 360-degree approach toward SDN, covering the overall network strategy as well as the aspects of cybersecurity and cloud.
- **HCL's** SD-WAN services are customized as per the business intent, segregating the applications and traffic based on the enterprise infrastructure by segmenting the WAN.
- **IBM's** SD-WAN solutions deliver enhanced agility, simplified management and higher network capacity at a lower cost.
- **Infosys** specializes in delivering tools, accelerators, intellectual property-led services, software customization and integration services as part of its managed WAN engagements.
- **Orange Business Services** brings in the differentiating factor with its multi-sourcing integration (MSI) as a service with features such as multi-vendor and multi-network type integration and management.
- **Tech Mahindra (Tech M)** has the capability to provide the end-to-end SD-WAN rollout and management across a wide range of SD-WAN technologies.
- **TCS** is focused on building context-aware networks with AI and ML to reach the "concept of zero" and integrates the solution with its SD-WAN offerings.
- **Vodafone** SD-WAN offering provides the flexibility to manage all applications, devices, firewalls and bandwidth usage through a single pane of glass portal.

MANAGED SD-WAN SERVICES

Observations (cont.)

- **Wipro** has a focus on underlay re-engineering, which is a key piece of the SD-WAN deal considering its cost effectiveness.
- **Verizon (Rising Star)** offers consulting-only engagements as an additional service for end-to-end managed takeovers, technology refreshes and migration deals.
- **Mphasis' (Rising Star)** value proposition is realized by enterprises through a solution design model that delivers considerable savings on operational costs and an integrated build-and-transform framework.



ORANGE BUSINESS SERVICES

Overview

Orange Group is a French multinational telecommunications corporation headquartered in Paris and employing around 148,000 people globally. The company generated a revenue of €42.24 billion in 2019. Orange Business Services' advisory-led engagement practice combines or integrate MPLS, SD-WAN, security, mobility and internet services with WAN optimization and application visibility services. The company's SD networks strategy encapsulates AI orchestration and its NextGen Hub, which addresses multi-vendor and multi-network infrastructure integration issues.

Strengths

Donning the system integrator cloak to enable SD-WAN in enterprise networks: While the enterprises were looking for a DIY kind of technology, they were approached directly by the vendors (such as Velocloud, Versa, Silverpeak etc.) with their technologies. The interception by Orange on the system integration side for such technologies on the existing infrastructure enabled Orange to ace major British multinational contracts.

New SD-WAN offering with inbuilt security features to tap the evolving market: The introduction of Fortinet-driven SD-WAN services in the portfolio enabled Orange to tap the new requirements emerging from the enterprise market in the U.K. The traditional network security in large multinationals are gradually drifting away from perimeter security handled by a CISO to a more end-to-end security coverage. The Fortinet-based service provides the required façade, on top of which the entire network infrastructure can be put up. The technology provides the necessary compactness such as a single device capable of supporting both SD-WAN and security functionality prerequisites while reducing the overhead costs

Leveraging open source API to lay the technical bricks on the software layer: Orange works around a philosophy of providing open API from customer interface, down to automation layer. thus, the company bundles all kinds of automation tools and management systems in its SD-WAN solution as per the requested configuration by the client. This enables a versatile management configuration modifiable by Orange as well as the client.

Caution

Orange Business Services is often perceived as a security-heavy service provider due to the string of acquisitions in the security domain. The company may direct its efforts toward inorganic growth in other domains as well for a well-balanced portfolio.

Orange would need to carefully configure its digital strategy to align it with the customer transformation, which would effectually monetize the data derived from this internet of enterprises.

2020 ISG Provider Lens™ Leader

Orange recognized the interest of enterprises in moving their workloads to the cloud, on the managed services front for SD-WAN and accordingly, crafted their offerings to align with the enterprise requirements.

Managed SD-WAN Services – Germany

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 1 of 4

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Apcela	Not in	Not in	Product Challenger	Not in	Product Challenger	Product Challenger
Arista	Not in	Not in	Product Challenger	Market Challenger	Not in	Not in
Aryaka	Not in	Not in	Product Challenger	Market Challenger	Not in	Not in
AT&T	Rising Star	Product Challenger	Not in	Not in	Product Challenger	Leader
Axians	Not in	Not in	Leader	Product Challenger	Product Challenger	Not in
Bechtle	Not in	Not in	Not in	Not in	Market Challenger	Not in
becom	Not in	Not in	Not in	Not in	Contender	Not in
BT	Leader	Leader	Product Challenger	Product Challenger	Product Challenger	Leader
Cancom	Product Challenger	Product Challenger	Not in	Not in	Market Challenger	Product Challenger
Cato Networks	Not in	Not in	Product Challenger	Not in	Product Challenger	Not in
CenturyLink	Product Challenger	Product Challenger	Not in	Not in	Not in	Not in
Cisco	Not in	Not in	Not in	Leader	Product Challenger	Not in
Citrix	Not in	Not in	Not in	Not in	Not in	Product Challenger

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 2 of 4

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Claranet	Product Challenger	Product Challenger	Not in	Not in	Not in	Not in
Colt	Leader	Leader	Not in	Not in	Not in	Not in
Comline	Not in	Not in	Not in	Contender	Not in	Not in
Computacenter	Not in	Not in	Leader	Leader	Leader	Not in
Controlware	Not in	Not in	Product Challenger	Product Challenger	Not in	Not in
Damovo	Not in	Not in	Not in	Not in	Leader	Not in
Deutsche Telekom	Leader	Leader	Leader	Product Challenger	Leader	Leader
ecotel	Contender	Contender	Not in	Not in	Not in	Not in
Ericsson	Not in	Not in	Not in	Product Challenger	Product Challenger	Not in
eunetworks	Contender	Contender	Not in	Not in	Not in	Not in
Extreme Networks	Not in	Not in	Rising Star	Rising Star	Leader	Rising Star
GCX	Product Challenger	Product Challenger	Not in	Not in	Not in	Not in
GTT	Leader	Leader	Contender	Not in	Not in	Market Challenger

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 3 of 4

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
HCL	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not in	Product Challenger
IBM	Leader	Leader	Leader	Leader	Leader	Leader
Infosys	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not in
Juniper	Not in	Not in	Not in	Leader	Leader	Not in
Logicalis	Not in	Not in	Contender	Not in	Rising Star	Not in
M-Net	Market Challenger	Market Challenger	Not in	Not in	Not in	Not in
Mphasis	Not in	Product Challenger	Product Challenger	Not in	Not in	Not in
Net Cologne	Market Challenger	Market Challenger	Not in	Not in	Not in	Not in
NTT	Leader	Rising Star	Market Challenger	Leader	Leader	Not in
Nuage Networks	Not in	Not in	Not in	Not in	Contender	Not in
Orange Business Services	Product Challenger	Leader	Leader	Leader	Not in	Leader
Pica8	Not in	Not in	Not in	Not in	Not in	Contender
Riedel Networks	Leader	Leader	Not in	Not in	Product Challenger	Not in

Network - Software Defined Solutions and Service Partners - Quadrant Provider Listing 4 of 4

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Silver Peak	Not in	Not in	Not in	Not in	Not in	Product Challenger
Sprint	Product Challenger	Product Challenger	Not in	Product Challenger	Not in	Market Challenger
TCS	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Not in	Product Challenger
Tech Mahindra	Product Challenger	Product Challenger	Contender	Contender	Not in	Product Challenger
Telefonica	Product Challenger	Product Challenger	Not in	Not in	Product Challenger	Product Challenger
Verizon	Leader	Leader	Not in	Not in	Product Challenger	Product Challenger
Versa	Product Challenger	Product Challenger	Not in	Product Challenger	Not in	Not in
Versatel	Not in	Not in	Not in	Not in	Not in	Contender
Vodafone	Leader	Leader	Leader	Leader	Leader	Leader
Wipro	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger

ENTERPRISE CONTEXT

Managed SD-WAN Services

This report is relevant to enterprises across all industries in Germany for evaluating service providers of managed software defined wide-area network SD-WAN services.

In this quadrant report, ISG lays out the current market positioning of managed SD-WAN services providers in Germany, and how they address the key challenges enterprises face in the region. ISG observes a growing demand among enterprises for managed SD-WAN services to outsource IT 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 offer a collection of value-added services that offer configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support and AI-based autonomous healing.

Enterprises in Germany, like those elsewhere in the world, still have a minority of SD-WANs being managed. Yet, ISG expects more managed services as the market matures. As a result, in many cases, enterprises transitioning to SD-WAN use hybrid MPLS/SD-WAN networks. Accordingly, providers offer hybrid support via their managed services offerings.

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MANAGED SD-WAN SERVICES

Definition

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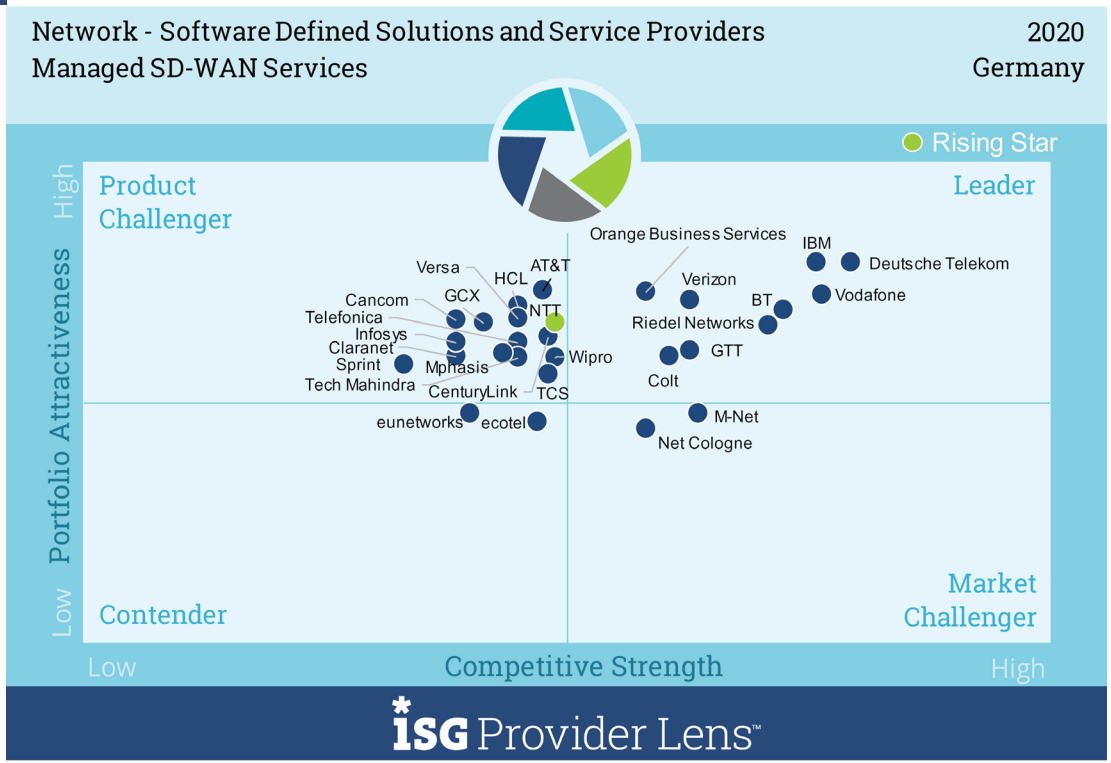


Source: ISG Research 2020

MANAGED SD-WAN SERVICES

Definition (cont.)

well as offering them white label to telco providers or integrators that can be offered to their clients as solutions forming a part of broader strategic implementations.

At the basic level, managed SD-WAN services offer full supply and operation of complete end-to-end SD-WAN systems and networks, supplying operations, monitoring and alerts, sometimes intent based, automatic, AI based or even self-healing (in its infancy, but likely to develop rapidly over the next two years). They also include all configuration management, proactive troubleshooting and trouble resolution, service-level agreement (SLA) management, on-the-ground equipment installation, hardware and software support and the overall lifecycle management as well as customer interactions and app management.

ISG does not expect the majority of SD-WANs being implemented to be managed SD-WANs during the time scope of this study, however, passing SD-WANs from a DIY to a managed state, or even switching over to managed SD-WAN from traditional managed WAN enterprises is a growing segment of the overall deployment base. Hybrid MPLS/SD-WAN networks in a managed or as a service configuration is also a major trend in the marketplace. These trends, however, differ by geography.

MANAGED SD-WAN SERVICES

Eligibility Criteria

- Product/service SD portfolio coverage, completeness and scope;
- Ability to deliver and manage all hardware and software aspects;
- Management capability for the needed orchestration and control of the overall architecture;
- Flexibility and ease of introducing 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 long been a leader in managed WAN and network services in Germany and has been supplying SD-WAN to enterprise and managed SD-WAN in the last two years. It provides consulting, managed services, cloud, network and enterprise improvement services and technology to an extensive existing enterprise customer base.

Colt is known for the quality of its services and competitive pricing, covering first and second-tier municipal areas in Germany on layer 2 (ethernet) and layer 3 (IP) VPN. It has built up a considerable portfolio of client references for network services in the country.

Deutsche Telekom provides high-quality services throughout Germany and in many other markets. The company combines the most far-reaching IP networks in Germany with high-quality SD-WAN services, both managed aaS and direct to client. It delivers across Europe and reaches more than 180 countries and territories, with more than 2,400 global PoPs, including 1,200 in Europe.

GTT's SD-WAN offering continuously optimizes in real-time client's network, utilizing AI capabilities to route traffic over the best available WAN circuit to provide a secure end to end managed SD-WAN solution, bolstered by the addition of Fortinet Secure SD-WAN as optional advanced security throughout Germany.

MANAGED SD-WAN SERVICES

Observations (cont.)

IBM has a strong portfolio of proprietary solutions as well as a vast partner ecosystem of leading players in managed service and managed SD-WAN service, allowing it to deliver comprehensive, provider-agnostic solutions for enterprises across industries in Germany and the rest of the world.

Orange Business Services delivers an array of network services and solutions in Germany. The company's managed SD-WAN offerings include Flexible SD-WAN with full multi-network compatibility across virtual SD-WAN gateways. The offerings can be delivered fully managed or co-managed solutions.

Riedel Networks is focused on building and operating network services that can be customized to meet customer needs. It runs an extensive and scalable Cisco homogenous network with more than 40 points of presence (PoPs) worldwide. Riedel Networks delivers scalable and fast implementable solutions in many verticals, including events and competitive sports, utilizing SDN solutions and tools and delivering as-a-service (aaS) to clients.

Verizon has a long history of competing for very large accounts, in Germany, that have global presence. The provider has a good proportion of DAX customers, especially in industries requiring WAN services. The company offers different levels of managed SD-WAN based on fully managed and co-managed models of service.

Vodafone is a strong and well-positioned provider of managed SD-WAN services in in Germany and is noted for its presence, brand visibility and portfolio in the country. It is actively growing its managed SD-WAN services by supplying a wide range of enterprise-focused services as well as SD-WAN products and services and providing a network-as-a-service (NaaS) layer.

NTT, a rising star, is well known for its global network and managed WAN offerings, and has recently reorganized itself and developed a new strategy that is SD Networks and SD-WAN based. The company has many managed SD-WAN transitions and deployments as references, with a comprehensive portfolio of fully managed and co-managed SD-WAN solutions for large enterprises.

ORANGE BUSINESS SERVICES

Overview

Orange Business Services delivers a broad selection of network services and solutions in Germany. The company leads all engagements with highly experienced consultants, with good industry knowledge, together with a strong portfolio of SD-WAN solutions that combine, as required, MPLS, SD-WAN, security, mobility and internet services with WAN optimization and application visibility services. These solutions are offered flexibly with various levels of service management. The company's SD networks strategy, offering AI orchestration and its NextGen Hub, includes multi-vendor and multi-network infrastructure integration and management.

Strengths

Flexible core offerings: Flexible SD-WAN is an automated, intelligent, global solution with on-demand virtualized services and is centrally orchestrated for end-to-end performance and control. The solution is fully customizable and is offered fully managed or as a co-managed service delivery.

Ease of migration: The company provides full compatibility between traditional WAN solutions and Flexible SD-WAN by utilizing virtual SD-WAN gateways, allowing easy migration from traditional WAN to SD-WAN in transformation projects.

Partnership enabled: Orange Business Services has an extensive partner network in the managed SD-WAN and multi-network integration space in Germany.

Caution

In Germany, Orange Business Services is highly active in both the large and large mid-size customer segments 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. Price erosion is often the result of such competition, and must, therefore, be carefully monitored.

2020 ISG Provider Lens™ Leader

Orange Business Services delivers innovative, flexible and high-quality managed SD-WAN solutions in Germany.

Managed SD-WAN Services – Nordics

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

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Alten	Not in	Not in	Product Challenger	Not in	Contender	Contender
Altran	Not in	Not in	Product Challenger	Not in	Product Challenger	Not in
Apcela	Not in	Not in	Not in	Not in	Product Challenger	Not in
AT&T	Not in	Product Challenger	Product Challenger	Not in	Product Challenger	Product Challenger
Axians	Not in	Contender	Market Challenger	Market Challenger	Not in	Not in
BT	Product Challenger	Leader	Rising Star	Rising Star	Leader	Not in
Cato Networks	Not in	Product Challenger	Not in	Not in	Not in	Not in
CenturyLink	Product Challenger	Product Challenger	Product Challenger	Not in	Product Challenger	Not in
Cisco	Not in	Not in	Not in	Leader	Leader	Not in
Citrix	Not in	Not in	Not in	Not in	Not in	Product Challenger
Colt	Product Challenger	Product Challenger	Product Challenger	Not in	Not in	Not in

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

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Conscia	Not in	Market Challenger	Contender	Not in	Not in	Not in
Dell Technologies	Not in	Not in	Not in	Leader	Not in	Not in
Deutsche Telekom	Leader	Leader	Leader	Product Challenger	Leader	Leader
Enea	Not in	Not in	Not in	Not in	Contender	Not in
Ericsson	Not in	Not in	Product Challenger	Leader	Leader	Not in
Fatpipe	Not in	Not in	Not in	Not in	Product Challenger	Not in
GTT	Product Challenger	Rising Star	Rising Star	Not in	Not in	Not in
HCL	Leader	Leader	Leader	Not in	Leader	Not in
HPE	Not in	Not in	Not in	Contender	Not in	Not in
IBM	Leader	Leader	Leader	Leader	Leader	Leader
Infosys	Rising Star	Rising Star	Leader	Rising Star	Leader	Leader

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

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
Juniper	Not in	Not in	Not in	Not in	Market Challenger	Not in
LTTS	Not in	Not in	Product Challenger	Not in	Product Challenger	Product Challenger
NetNordic	Not in	Not in	Market Challenger	Not in	Not in	Not in
NTT	Not in	Not in	Not in	Not in	Not in	Not in
Nuage Networks	Not in	Not in	Product Challenger	Product Challenger	Product Challenger	Not in
Orange Business Services	Leader	Leader	Leader	Leader	Leader	Leader
PCCW	Contender	Contender	Not in	Not in	Not in	Contender
Prodapt	Product Challenger	Not in	Product Challenger	Product Challenger	Product Challenger	Contender
Riedel Networks	Contender	Product Challenger	Not in	Not in	Not in	Not in
Riverbed	Not in	Not in	Not in	Product Challenger	Not in	Not in
Sprint	Product Challenger	Product Challenger	Not in	Product Challenger	Not in	Product Challenger

Network - Software Defined Solutions and Services - Quadrant Provider Listing 4 of 4

	Managed WAN Services	Managed SD-WAN Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)	Network Technologies Suppliers (Core to Mobile)	Mobile Network (4G/5G) Additional (non-core) Services
TCS	Leader	Leader	Leader	Leader	Not in	Product Challenger
Tech Mahindra	Rising Star	Leader	Leader	Product Challenger	Rising Star	Rising Star
Telefonica	Product Challenger	Not in	Not in	Not in	Not in	Not in
Tele2	Market Challenger	Not in	Product Challenger	Contender	Not in	Market Challenger
Telenor	Leader	Market Challenger	Leader	Market Challenger	Market Challenger	Leader
Telia	Leader	Leader	Product Challenger	Contender	Market Challenger	Market Challenger
Three	Not in	Not in	Not in	Not in	Not in	Product Challenger
Versa	Product Challenger	Product Challenger	Not in	Product Challenger	Not in	Product Challenger
Verizon	Product Challenger	Product Challenger	Product Challenger	Not in	Product Challenger	Product Challenger
Wipro	Leader	Leader	Leader	Leader	Leader	Leader

ENTERPRISE CONTEXT

Managed SD-WAN Services

This report is relevant to enterprises across all industries in the Nordics for evaluating service providers of managed software defined wide-area network SD-WAN services.

In this quadrant report, ISG lays out the current market positioning of managed SD-WAN services providers in the Nordics, and how they address the key challenges enterprises face in the region. ISG observes a growing demand among enterprises for managed SD-WAN services to outsource IT functions and purchase them along with consulting and professional services to assess, design and implement their enterprise networks along with on-going operations. Also, the enterprises in the Nordics prioritize migrating to cloud or multi-cloud environments and accessing them from anywhere due to the benefits involved such as ease of consumption and quickness to market. The service providers offer a collection of value-added services that offer configuration management, operations, monitoring, alerts, troubleshooting, equipment installation, hardware and software support and AI-based autonomous healing.

Enterprises in the Nordics, like those elsewhere in the world, still have a minority of SD-WANs being managed. Yet, ISG expects more managed services as the market matures. As a result, in many cases, enterprises transitioning to SD-WAN use hybrid MPLS/SD-WAN networks. Accordingly, providers offer hybrid support via their managed services offerings.

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.

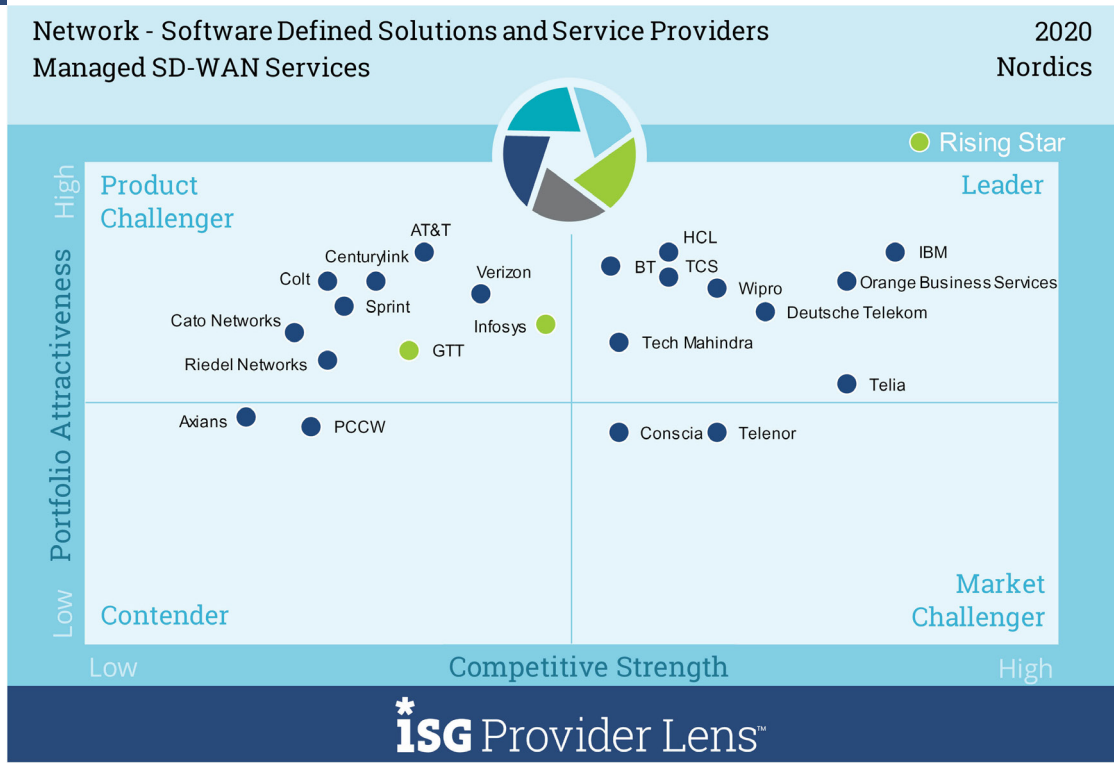
Digital transformation professionals should read this report to understand how providers of managed SD-WAN services fit their digital transformation initiatives and how they compare to one another.

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

SD-WAN provides the benefits of SDN technology to traditional hardware-based networking. Managed SD-WAN provides those benefits as a managed service in the same way as traditional managed WAN via an outsourced agreement with a provider. SD-WAN is an overlay architecture providing a networking foundation that is much 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. SD-WAN architecture reduces recurring network costs, offers network-wide control and visibility and simplifies the technology with zero-touch deployment and centralized management. Key to the SD-WAN architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been active increasingly as managed service providers supplying complete managed SD-WAN solutions to enterprises as well as offering them white label to telco providers or integrators that can be offered to their clients as solutions forming a part of broader strategic implementations.



Source: ISG Research 2020

MANAGED SD-WAN SERVICES

Definition (cont.)

At the basic level, managed SD-WAN services offer full supply and operation of complete end-to-end SD-WAN systems and networks, supplying operations, monitoring and alerts, sometimes intent based, automatic, AI based or even self-healing (in its infancy, but likely to develop rapidly over the next two years). They also include all configuration management, proactive troubleshooting and trouble resolution, service-level agreement (SLA) management, on-the-ground equipment installation, hardware and software support and the overall lifecycle management as well as customer interactions and app management.

ISG does not expect the majority of SD-WANs being implemented to be managed SD-WANs during the time scope of this study, however, passing SD-WANs from a DIY to a managed state, or even switching over to managed SD-WAN from traditional managed WAN enterprises is a growing segment of the overall deployment base. Hybrid MPLS/SD-WAN networks in a managed or as-a-service configuration is also a major trend in the marketplace. These trends, however, differ by geography.

Eligibility Criteria

- Product/Service SD portfolio coverage, completeness and scope;
- Ability to deliver and manage all hardware and software aspects;
- Management capability of the overall architecture;
- Flexibility and ease of introducing new services and deployments;
- Stability and roadmap planning of the provider;
- Reference customer/site volume in deployment;
- Competitiveness of offering and commercial terms.

MANAGED SD-WAN SERVICES

Observations

- **BT** follows a close connect operational procedure where in-house experts support customers across every level of the transformation journey, taking into account specific requirements such as use cases, security, cloud and edge strategy.
- **Deutsche Telekom's** SD-WAN offerings feature multi-cloud hosted applications, along with standardized services such as managed SD-WAN overlay services.
- **HCL's** TIS SD WAN solution enables enterprises to leverage WAN investments more effectually, by augmenting premium WAN connections to low-cost connectivity.
- **IBM's** consultatory SD-WAN approach, focusing on advice-move-build blueprint executes proper landscaping exercise for a client, regardless of IBM's engagement in managing the network.
- **Orange's** Flexible SD-WAN is an automated, intelligent network with on-demand virtualized services, centrally orchestrated for holistic and superior performance and user-friendly control.
- **Wipro's** intent-based operation is driven by automated network, policy-based administration and a unified fabric.
- **TCS'** expertise lies in monitoring management, advanced WAN, data center and switching, network security and wireless services.
- **Tech Mahindra** delivers vertical-specific solutions to meet current and future business requirements of clients.
- **Telia** developed a stable relationship with Big Tech between 2007 and 2010 and worked together to sell their services.
- **GTT's (Rising Star)** managed SD-WAN differentia amalgamates the advantages of managed networking, application performance management and security into one service offering.
- **Infosys (Rising Star)** offers all-inclusive support across consulting, design, deployment and migration to SD-WAN, while utilizing an integrated global delivery model to deliver effectual implementation services.

ORANGE BUSINESS SERVICES

Overview

Orange Business Services' advisory-led engagement practice combines or integrate MPLS, SD-WAN, security, mobility and internet services with WAN optimization and application visibility services. The company's SD networks strategy encapsulates AI orchestration and its NextGen Hub, which addresses multi-vendor and multi-network infrastructure integration issues.

Strengths

Empowering enterprises to shift from carrier-based models to more flexible setups: Orange provides the flexibility to shift from a classic carrier-based model to a new model that is more consumption-based and supports the management and delivery of a SD networking transformation without any underlay network. This complete over-the-top solution has emerged from Orange's excellence in orchestration by integrating service delivery between the local and global teams. Apart from this new model, Orange drives SDx adoption through Multisourcing Service Integration (MSI) and Customer Service Assurance tools.

Assuring cost-effectiveness through MSI: MSI could be represented as a robust, multi-pronged service plan directed toward helping CIOs with budget optimization. It supports a comprehensive dashboarding service, where Orange interacts with different providers on behalf of the customer. In SD-WAN transformation deals, the customer relationship can be driven with efficiency, engaging internal stakeholders. The end-to-end orchestration of the vendor management ecosystem provides optimal savings to enterprises since Orange pays the penalty if third parties do not adhere to the contract conditions.

Airtight validation mechanism for new codes with secure-by-design approach: Orange's proprietary Flexible SD-WAN is driven by a secure-by-design approach, with a strong, embedded validation process for new code releases and a carrier-grade infrastructure that is used to host the SD-WAN management systems. Furthermore, as a provider focused on security, Orange has integrated support services with a set of advanced security functions that can be delivered through different models.

Caution

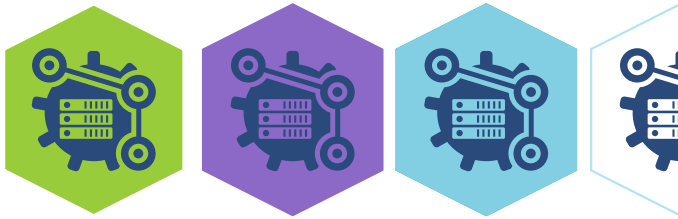
Orange may not be fully leveraging the potential of the local start-up ecosystem in the Nordics.

2020 ISG Provider Lens™ Leader

The Flexible SD-WAN solution by Orange integrates market-proven technologies to provide clients with an agile way to align the network with business requirements.

Methodology

METHODOLOGY



The ISG Provider Lens™ 2020 – "Network - Software Defined Solutions and Services Partners" research study analyses the relevant software vendors and service providers in the U.S., U.K., Nordics and German region, 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 Network - Software Defined Solutions and Services Partners market
2. Use of questionnaire-based surveys of service providers/vendor across all trend topics
3. Interactive discussions with service providers/vendors on capabilities & use cases
4. Leverage ISG's internal databases & advisor knowledge & experience (wherever applicable)
5. Detailed analysis & evaluation of services & service documentation based on the facts & figures received from providers & 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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ISG Provider Lens™ | Quadrant Report
July 2020

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