

***ISG** Provider Lens™

Network - Software Defined Solutions and Services

Managed WAN Services

Global 2019
Quadrant
Report



A research report
comparing provider
strengths, challenges
and competitive
differentiators

Customized report courtesy of:



June 2019

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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 June, 2019. 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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EXECUTIVE SUMMARY

Existing managed LAN and WAN services, multiprotocol label switching (MPLS) and related technologies form the backbone of the enterprise customer installed base for telcos and other communication services providers and account for most of the revenues generated worldwide. This trend, however, is rapidly changing. The software-defined network (SDN), which is closely related to network function virtualization (NFV) and software-defined WAN (SD-WAN) technologies and services, is evolving and rapidly penetrating the market. A similar trend exists with related network services such as performance assurance (management), managed networks and devices (MND), and 4G and 5G mobility (4G/5G) with associated additional (non-core) mobile services based on those faster mobile data stream standards, along with their triggers and influences. The main factors that drive this rapid change for enterprises are:

Increasing flexibility and agility: Enterprises have become more focused on improving the integration, automation, orchestration and management of network resources and processes. This has evolved to encompass NFV and has since led onto 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."

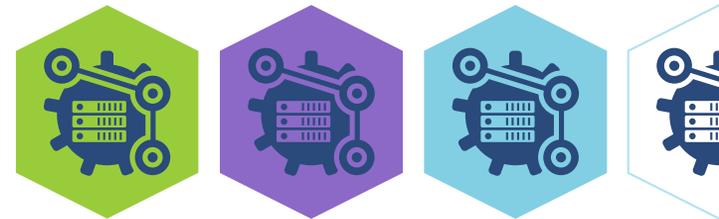
Improving customer satisfaction while boosting sales: The ability to respond quickly and seamlessly to customer queries and quickly provide (often automatically) new services via SDN helps in elevating client experience and boosting sales.

Reducing costs and improving usage efficiency: Enterprises can improve the 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 software-defined pathways with little or no human interaction involved.

The aforementioned factors, together with cloud networks, have been driving significant changes to networks and their operations over the past 30 years. Some telecommunication service providers, such as AT&T, have announced plans to make at least 75 percent of their networks SDN-compliant and functional by 2022. Others have introduced SD-WAN implementations to reap benefits in a shorter term.

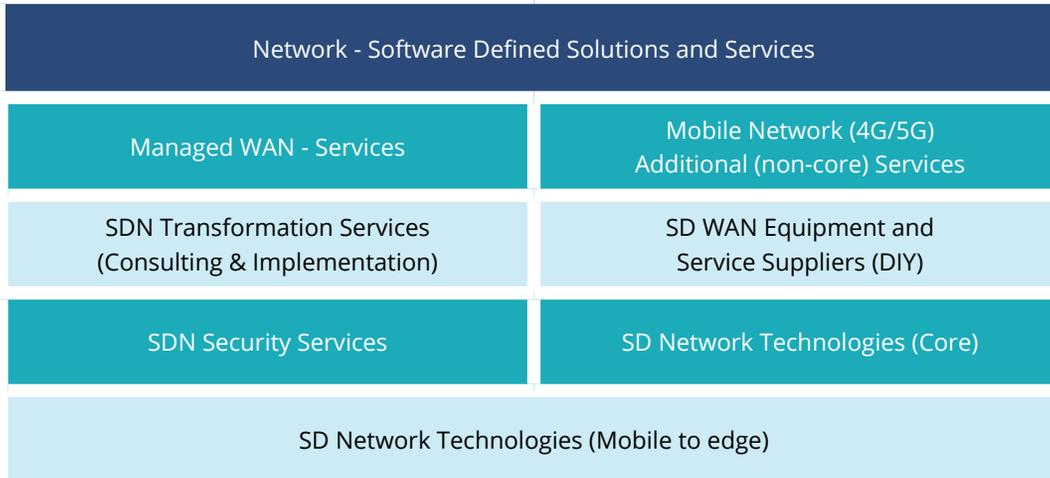
Many service providers that are reviewed in this study are involved in pilot projects and are regularly converting them into production-level deployments. Some have already completed such activities or have many demonstrated instances of doing so on behalf of their clients. This progression, coupled with the relative newness of SDN, has led ISG to expect that many of the companies that are currently categorized as Product Challengers or Market Challengers in this study will be able to improve their positioning over the course of the year to enter leadership positions 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 set to continue and may even increase during the remainder of 2019 as SDN becomes mainstream.



Introduction

Simplified illustration



Source: ISG 2019

Definition

The ISG Provider Lens™ study examines the different kinds of global network offerings related to SDN, SD-WAN and associated security, core-branch and mobility service offerings related to those segments. It also assesses the more traditional managed WAN market offerings. For users, both markets are extremely important. This study accounts for changing market requirements and provides a consistent market overview of the segments. It also offers concrete decision-making support to help user organizations to evaluate and assess the offerings and performance of service providers.

The areas described in the following sections are associated with SDN and more traditional managed WAN provisioning.

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 (VAS) that offer monitoring and reporting, security and outsourced customer-premises equipment (CPE) functions. Many enterprises see managed WAN services as a way 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 should cover all the major suppliers of managed WAN services for enterprises.

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

Fifth generation (5G) mobile networks and wireless systems are the next telecommunication standards after the current long-term-evolution (LTE) or 4G technology, operating in the millimeter wave bands (28, 38, and 60 GHz). 5G is aimed at a higher capacity than the current 4G, which would allow for an increased density of mobile broadband users and support more device-to-device, reliable and massive machine communications. It is also aimed at lowering latency and battery consumption compared to 4G equipment and is targeted at 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 either offered by service providers or suppliers as discrete solutions or as modules that will integrate with or are reliant on SDN or SD-WAN.

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

Definition (cont.)

SDN Transformation Services (Consulting & Implementation)

SDN and SD-WAN provides the benefits of SDN technology to traditional hardware-based networking and is considered complementary to NFV. It is an overlay architecture with 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 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 the SD-WAN architecture is its

ability to communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been increasingly active as advisors/consultants as well as implementation enactors of managed services to supply complete solutions to enterprises. Consulting companies, large vendors and managed network services providers have been actively involved in offering SD-WAN as managed service packages in this space (independently or as part of partnership/consortium deals).

This quadrant should cover all the advisory/consulting, hardware and software, management/reporting tools, applications and services associated with delivering SD-WAN to enterprises, starting from consulting to managed services delivery.

Definition (cont.)

SD-WAN Equipment and Service Suppliers (DIY)

SD-WAN provides the benefits of SDN technology to traditional hardware-based networking. It has an overlay architecture with a networking foundation that is much easier to manage than legacy WANs. It essentially moves the control layer to the cloud and then centralizes and simplifies network management. This overlay design abstracts software from hardware, enabling network virtualization and making it 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 the SD-WAN architecture is its ability to communicate with all network endpoints without the need for external mechanisms or additional protocols. Suppliers have been active in selling directly SD-WAN solutions to enterprises 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 hardware and software, management/reporting tools, applications and services associated with delivering SD-WAN for enterprise-owned operations.

SDN Security Services

An SD-WAN is a logical overlay network that encompasses any WAN transport — public, private, even LTE/4G or 5G, and is independent of any single carrier or service provider. The overlay occurs between any two SD-WAN nodes, called edges, which can be deployed at the branches and/or data centers. A cloud-delivered variation extends the overlay to any cloud point-of-presence (PoP) or data center. A key value in security services for the network is that SD-WAN unifies secure connectivity over all transports while supporting transport independence. There is no need to use/provide a different security mechanism for different transport types or to depend on the transport provider for their secure network. The network overlay can support a wide range of security capabilities and can enhance its inherent security capabilities by adding advanced security systems in the form of discrete overlays, services or applications. It can be managed both automatically and centrally as well as at local levels.

This section should cover all suppliers of software and/or hardware associated with additional and discrete security services based on SDN or SD-WAN systems.

Definition (cont.)

Network Technologies Suppliers (Core)

SDN technology is a networking approach 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. It is fundamentally different from NFV in terms of end results and ability, although both approaches are mutually supportive. A network virtualization program eliminates the conventional shortcomings and provisioning tasks related to legacy network segmentation technologies, such as switched VLANs, routed subnets, and firewall access lists (ACLs). An SDN-based network virtualization application supports arbitrary assignment of IP/MAC addressing schemes, automates network configuration tasks and enforces the expected network segmentation. Data plane abstraction provides a standards-based approach to dynamically provision the network fabric from a centralized (or distributed) software-based controller or multiple controllers.

SDN technologies enable improvements in network agility and automation and can substantially reduce the cost of network operations compared to traditional network deployments. The implementation of 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. It allows the dynamic and automatic provisioning of virtual network segments and virtual routing services on both physical and virtual networking devices. Security policies can be automatically provisioned via a cloud orchestration platform, such as OpenStack, or through workloads assigned according to attributes, such as MAC, subnet, VLAN and IP protocol, in an automated manner.

The main companies covered in this segment of this study will be vendors of SDN and NFV equipment and core services that are purchased either directly by enterprises or by service providers for specific enterprise projects.

Definition (cont.)

Network Technologies Suppliers (Mobile to Edge)

SDN technologies enable improvements in network agility and automation and can substantially reduce the cost of network operations when compared to traditional network deployments. The implementation of 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. It also allows for the dynamic and automatic provisioning of virtual network segments and virtual routing services on both physical and virtual networking devices. All edge components may be managed.

in the same manner as core and SD-WAN components. With software-defined access out to branch/edge, including all customer premises equipment (CPE, referenced as virtual CPE or vCPE in SDN terms) and associated Wi-Fi networks, access points (APs), software-defined mobile networks (SDMN), and SD-LAN

(includes both wireless [SD-WLAN] or mobile [SD-WMLAN], the management protocol can be further improved.

This segment assesses all the main vendors and service providers (such as telcos) in the SD-LAN space, including vCPE, SDMN and SD-LAN specific vendors.

In this independent study, following the format of the internationally successful Provider Lens™ series, ISG sets out to deliver a comprehensive but defensible research program based on an extensive evaluation of criteria that cover all major telcos and service providers of relevance in the global, Germany, the Nordics, the U.K. and the U.S. regions.

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.

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

	Managed WAN Services	Mobile Network (4G/5G) Additional (non-core) Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Services (DIY)	SDN Security Services	SD Network Technologies (Core)	SD Network Technologies (Mobile to Edge)
Aerohive	● Not in	● Market Challenger	● Not in	● Not in	● Not in	● Not in	● Not in
America Movil	● Not in	● Contender	● Not in	● Not in	● Not in	● Not in	● Not in
Apcela	● Not in	● Rising Star	● Rising Star	● Rising Star	● Contender	● Rising Star	● Rising Star
Arista	● Not in	● Not in	● Not in	● Contender	● Not in	● Product Challenger	● Not in
Aryaka	● Not in	● Not in	● Market Challenger	● Market Challenger	● Not in	● Not in	● Not in
AT&T	● Leader	● Leader	● Leader	● Not in	● Product Challenger	● Leader	● Leader
ATOS	● Not in	● Not in	● Not in	● Not in	● Contender	● Not in	● Not in
Belkin	● Not in	● Not in	● Not in	● Not in	● Not in	● Not in	● Contender
BT	● Leader	● Leader	● Product Challenger	● Not in	● Leader	● Product Challenger	● Leader
Cato Networks	● Not in	● Product Challenger	● Product Challenger	● Product Challenger	● Not in	● Product Challenger	● Product Challenger
Centrify	● Not in	● Product Challenger	● Not in	● Not in	● Product Challenger	● Not in	● Not in

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

	Managed WAN Services	Mobile Network (4G/5G) Additional (non-core) Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Services (DIY)	SDN Security Services	SD Network Technologies (Core)	SD Network Technologies (Mobile to Edge)
CenturyLink	● Leader	● Not in	● Leader	● Not in	● Product Challenger	● Not in	● Leader
China Telecom	● Contender	● Not in	● Not in	● Not in	● Not in	● Product Challenger	● Not in
Cisco	● Not in	● Not in	● Product Challenger	● Leader	● Product Challenger	● Leader	● Leader
Citrix	● Not in	● Product Challenger	● Not in	● Not in	● Product Challenger	● Not in	● Not in
Cloudgenix	● Not in	● Not in	● Not in	● Not in	● Not in	● Product Challenger	● Not in
Colt	● Product Challenger	● Not in	● Not in	● Not in	● Not in	● Not in	● Not in
Computacenter	● Not in	● Not in	● Product Challenger	● Not in	● Not in	● Not in	● Not in
Datto	● Not in	● Not in	● Not in	● Not in	● Contender	● Not in	● Not in
Dell EMC	● Not in	● Not in	● Market Challenger	● Leader	● Not in	● Leader	● Market Challenger
D-Link	● Not in	● Not in	● Not in	● Not in	● Not in	● Not in	● Market Challenger
DXC	● Not in	● Not in	● Not in	● Not in	● Product Challenger	● Not in	● Not in

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

	Managed WAN Services	Mobile Network (4G/5G) Additional (non-core) Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Services (DIY)	SDN Security Services	SD Network Technologies (Core)	SD Network Technologies (Mobile to Edge)
Ericsson	● Not in	● Not in	● Not in	● Product Challenger	● Not in	● Product Challenger	● Product Challenger
Extreme Networks	● Not in	● Product Challenger	● Product Challenger	● Product Challenger	● Product Challenger	● Product Challenger	● Product Challenger
Fortinet	● Not in	● Not in	● Not in	● Not in	● Product Challenger	● Not in	● Not in
GTT	● Product Challenger	● Not in	● Contender	● Not in	● Not in	● Not in	● Product Challenger
Harman	● Not in	● Not in	● Not in	● Product Challenger	● Not in	● Product Challenger	● Product Challenger
HCL	● Product Challenger	● Not in	● Product Challenger	● Leader	● Market Challenger	● Leader	● Not in
HPE	● Not in	● Not in	● Contender	● Contender	● Not in	● Contender	● Product Challenger
Huawei	● Not in	● Not in	● Not in	● Contender	● Not in	● Product Challenger	● Not in
IBM	● Leader	● Product Challenger	● Leader	● Leader	● Leader	● Leader	● Leader
Infosys	● Not in	● Not in	● Product Challenger	● Leader	● Product Challenger	● Product Challenger	● Product Challenger
Juniper	● Product Challenger	● Not in	● Leader	● Leader	● Not in	● Market Challenger	● Not in

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

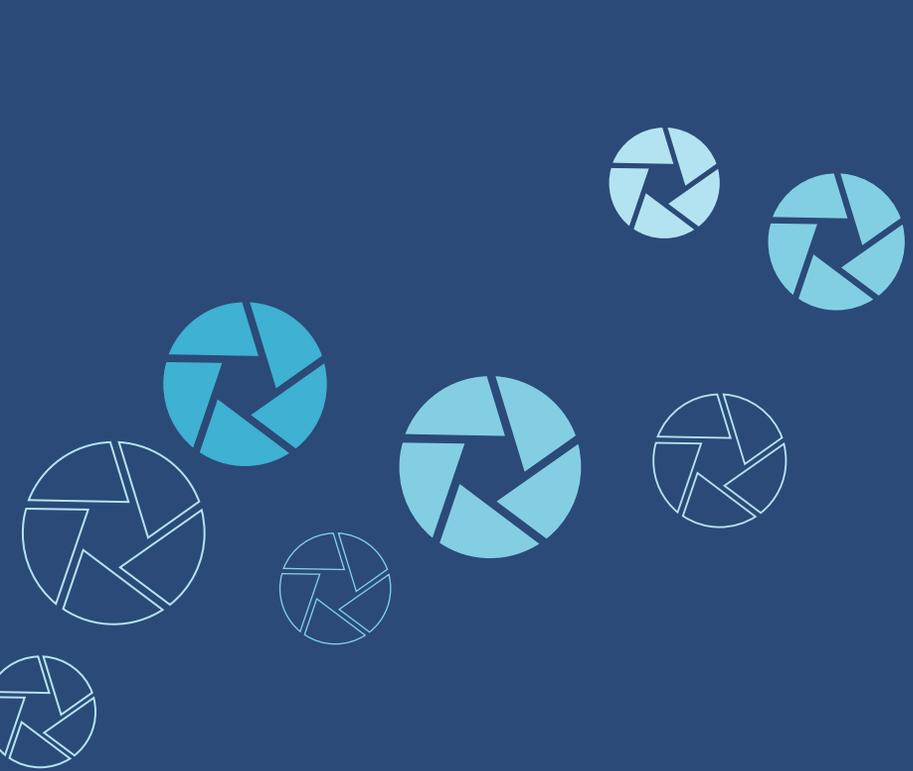
	Managed WAN Services	Mobile Network (4G/5G) Additional (non-core) Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Services (DIY)	SDN Security Services	SD Network Technologies (Core)	SD Network Technologies (Mobile to Edge)
Logicalis	Rising Star	Not in	Contender	Not in	Not in	Contender	Not in
Masergy	Market Challenger	Market Challenger	Not in	Market Challenger	Leader	Not in	Not in
Microsoft	Not in	Product Challenger	Not in	Not in	Product Challenger	Not in	Not in
NTT	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Market Challenger	Product Challenger	Product Challenger
Nuage Networks (Nokia)	Not in	Product Challenger	Product Challenger	Product Challenger	Not in	Contender	Not in
Orange Business Services	Leader	Leader	Leader	Leader	Leader	Not in	Leader
PCCW	Market Challenger	Product Challenger	Not in	Not in	Not in	Market Challenger	Not in
Pica8	Not in	Contender	Not in	Not in	Not in	Not in	Not in
Prodapt	Not in	Not in	Product Challenger	Not in	Not in	Not in	Not in
Riverbed	Not in	Not in	Not in	Product Challenger	Not in	Not in	Not in
Silver Peak	Not in	Product Challenger	Product Challenger	Product Challenger	Not in	Not in	Not in

Network - Software Defined Solutions and Services - Quadrant Provider Listing 5 of 5

	Managed WAN Services	Mobile Network (4G/5G) Additional (non-core) Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Services (DIY)	SDN Security Services	SD Network Technologies (Core)	SD Network Technologies (Mobile to Edge)
SingTel	● Product Challenger	● Leader	● Product Challenger	● Not in	● Not in	● Product Challenger	● Not in
Sprint	● Product Challenger	● Product Challenger	● Product Challenger	● Product Challenger	● Not in	● Not in	● Not in
Swisscom	● Market Challenger	● Product Challenger	● Product Challenger	● Not in	● Not in	● Not in	● Not in
Symantec	● Not in	● Not in	● Not in	● Not in	● Leader	● Not in	● Not in
Talari Networks	● Not in	● Not in	● Not in	● Product Challenger	● Not in	● Product Challenger	● Not in
TCS	● Product Challenger	● Product Challenger	● Product Challenger	● Product Challenger	● Product Challenger	● Not in	● Product Challenger
Tech Mahindra	● Leader	● Not in	● Leader	● Not in	● Not in	● Not in	● Product Challenger
Telstra	● Product Challenger	● Not in	● Product Challenger	● Not in	● Not in	● Not in	● Not in
Telus	● Contender	● Not in	● Not in	● Not in	● Not in	● Not in	● Not in
TP-Link	● Not in	● Not in	● Not in	● Not in	● Not in	● Not in	● Contender
Trend Micro	● Not in	● Not in	● Not in	● Not in	● Product Challenger	● Not in	● Not in

Network - Software Defined Solutions and Services - Quadrant Provider Listing 6 of 6

	Managed WAN Services	Mobile Network (4G/5G) Additional (non-core) Services	SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Services (DIY)	SDN Security Services	SD Network Technologies (Core)	SD Network Technologies (Mobile to Edge)
T-Systems	● Product Challenger	● Leader	● Leader	● Not in	● Leader	● Not in	● Not in
Verizon	● Product Challenger	● Leader	● Leader	● Not in	● Not in	● Not in	● Product Challenger
Versa	● Not in	● Not in	● Not in	● Not in	● Not in	● Product Challenger	● Not in
Vmware	● Not in	● Not in	● Not in	● Leader	● Product Challenger	● Not in	● Not in
Vodafone	● Product Challenger	● Leader	● Product Challenger	● Not in	● Leader	● Leader	● Leader
Wipro	● Leader	● Not in	● Leader	● Not in	● Rising Star	● Not in	● Not in
ZTE	● Not in	● Not in	● Not in	● Not in	● Not in	● Not in	● Contender



Network - Software Defined Solutions and Services Quadrants

MANAGED WAN SERVICES

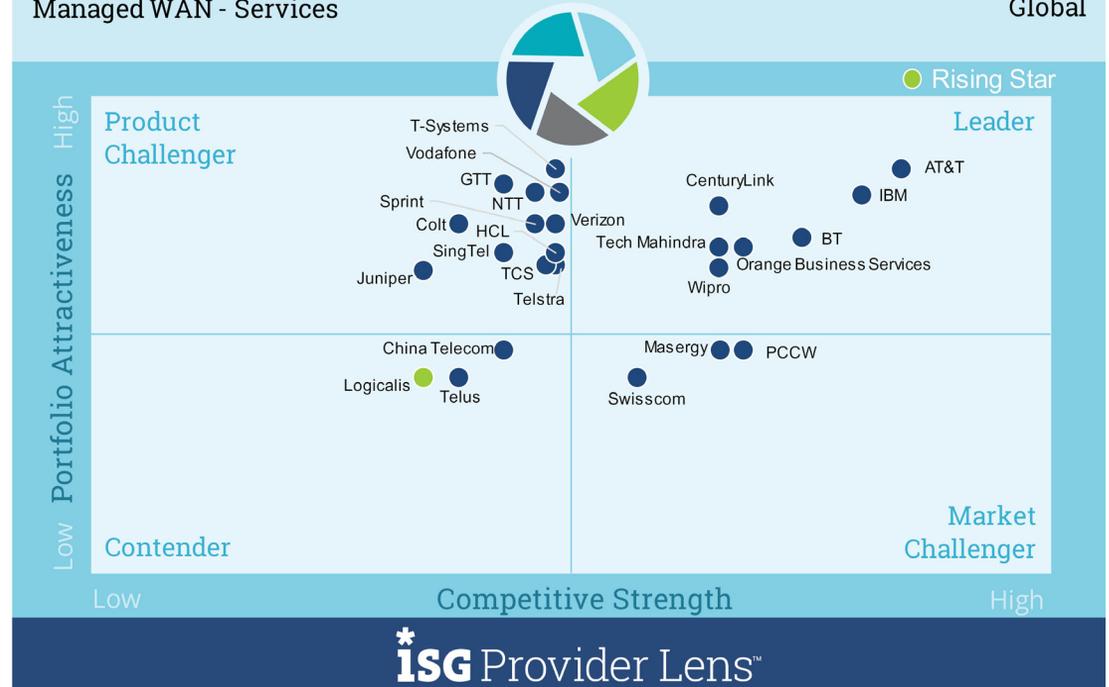
Definition

Managed WAN services are increasingly described as traditional in light of the SD-WAN offensive globally. They cover the features and functionality that carriers offer in their network and at the customer point of demarcation. They are a collection of value-added services (VAS) that include monitoring and reporting, security and outsourced customer premise equipment (CPE) functions. Many enterprises choose managed WAN services 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, managed WAN services offer monitoring and alerts during critical problems such as network outages. They also include configuration management, proactive troubleshooting and trouble resolution, service-level agreement (SLA) management, on-the-ground equipment installation, hardware support and the overall lifecycle management.

Network - Software Defined Solutions and Services
Managed WAN - Services

2019
Global



Source: ISG Research 2019

MANAGED WAN SERVICES

Definition (cont.)

Managed WAN services cover the scope of services and functionalities of various network solutions, including core solutions such as the MPLS protocol for IP-VPN services and multiple access technology. WAN services allow end customers to access resources for network operation centers (NOCs), disaster recovery, active fault clearance and customer portals.

Traditional managed WAN services, often based on MPLS, have come under increased pressure due to the growing prominence and prospects of SD-WAN which would continue over the next two years. MPLS is the most widely used WAN technology in companies with distributed locations and is being developed continuously. Today, it is possible to prioritize types of applications depending on their respective jitter, packet loss and deceleration to allow a performance boost in individual applications based on customer requirements or

policies. While MPLS VPNs provide certain advantages in connecting locations, they are an expensive medium when it comes to connecting mobile devices, especially with the growth of traffic that is not business critical. Mobile usage is also exploding due to the internet of things (IoT), the growing mobile workforce and the addition of decentralized locations within enterprises. In addition, enterprises are demanding networks to provide more flexibility and business-oriented SLA metrics such as performance per application and quality of experience. Such demands are causing a strain and affecting the smooth functioning of traditional WAN services and managed services. These newer flexibility and metric requirements require a more flexible infrastructure compared to what MPLS networks provide, making SDN increasingly relevant.

ISG does not expect MPLS networks to be replaced by alternate software-driven networks any time soon. Instead, these networks would be increasingly complemented by SD-WAN technologies during 2019–2021.

MANAGED WAN SERVICES

Eligibility Criteria

- Product/service portfolio coverage, completeness and scope
- Ability to deliver and manage all hardware and software aspects
- Management capability for the orchestration and control of the overall architecture
- Stability and roadmap planning
- Reference customer/site volume in deployment
- Competitiveness of offerings and commercial terms

Observations

- **AT&T** has a vast array of business and technology streams in the networking space and has a large client base in managed WAN services. The company is also a leading proponent of SDN/SD-WAN, making it well positioned in migration programs.
- **BT** has a strong global backbone with a commitment to continue delivering traditional managed WAN services as well as SDN/SD-WAN services and managed services for its domestic and international client base.
- **CenturyLink** has capabilities to extend management into IT infrastructure and application management in three services tiers in a complimentary manner for network management. It has been ranked consistently as one of the best-performing managed WAN companies on a global level.
- **IBM** has a strong portfolio of its own network, service and security solutions. It has also built a world-class partner ecosystem of major players in the managed network, SDN, SD-WAN, multi-cloud network and multi-network integration space. These assets, together with IBM's consulting and project management abilities, facilitate the delivery of a comprehensive, provider-agnostic solution for enterprises.

MANAGED WAN SERVICES

Observations (cont.)

- **Orange Business Services** covers a large area of managed network services. These include MPLS and SD-WAN and internet services, which can be integrated or combined with managed security, WAN optimization and application visibility services. They can be provided either on appliance or on virtual network functions (VNFs) as well as on various levels of service management. Orange Business Services also offers multi-sourcing integration (MSI) as a service.
- **Tech Mahindra** is globally known for its managed WAN and SD-WAN offerings at competitive price points with advanced service delivery. The company leverages its experience in traditional WAN services and SD-WAN transition programs to develop a strong portfolio of off-the-shelf framework offerings. It also has a strong consulting-led practice focused on customizing offerings to address the needs of each client.
- **T-Systems** provides high-quality services throughout Europe and many other international markets. It covers over 180,000 sites with more than 2,500 networks, delivering a four-fold redundancy at a platform level. The firm offers high-quality secure solutions that are custom packaged for specific industry verticals and enterprises.
- **Wipro's** managed network services are consulting led, covering both off-the-shelf and highly tailored client-specific solutions. These include Wipro Digital's Designit, ITIL integrated service platforms, governance via Wipro SmartView, Cloud Trust Security framework, Wipro HOLMES™ RPA/AI methods and toolsets and Wipro WANTAGE. It also offers partner solutions and products from companies such as Riverbed and Cisco.
- Rising Star **Logicalis** has an extensive portfolio of managed and hosted managed services that encompass the end-to-end management of multi-vendor, multi-technology ICT environments. It enables customers to take a flexible approach to IT operations and major transformation projects that are available on a global basis.

AT&T

 Overview

AT&T caters to all enterprise sizes, including those that are undergoing NFV/SDN transformation or are retaining more traditional network infrastructures. The company uses a managed network services and automation strategy with a service-centric approach for network management and integrating heterogeneous infrastructures and support models. 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 managed WAN spectrum in a modular and flexible manner.

 Strengths

Quality staff: AT&T has highly experienced consultants and technologists who are focused on networks and network management services. Its multinational and multidisciplinary teams can be quickly brought in for specific client projects.

Long and successful track record: AT&T has a vast array of business and technology streams in the networking space along with a large client base in managed WAN services. It is a strong competitor in the SDN/SD-WAN area and has its own portfolio, making it well positioned to fend off other suppliers.

Standardized managed services portfolio: AT&T leverages its experience with the newest technologies and discrete solutions in the SDN and SD-WAN space to serve managed WAN clients. The company is thus able to improve its overall service delivery while reducing costs and improving performance.

 Caution

AT&T should provide clarity on maintaining its client base for managed WAN and not de-emphasize its value. It should also focus on guiding the market in SD-WAN and SDN migration and conversion. This is a delicate balance to strike.

Enterprises (both medium and large) are increasingly adopting SDN to achieve more business flexibility and agility as well as to lower costs. AT&T should cater to a wider variety of enterprise sizes to overcome the perception that it is purely focused on large enterprises.



2019 ISG Provider Lens™ Leader

AT&T has a comprehensive managed network/WAN portfolio with excellent reference clients. It also has extensive capabilities in SD-WAN migration.

BT



Overview

BT is a longstanding leader in the managed WAN and network services space. It provides consulting, managed services, cloud, network, and enterprise improvement services and technology to its vast enterprise customer base. The company offers most of these services via the integration of pre-existing business units into focused transformational delivery teams under the Global Services banner. It has an extensive partner constellation as well as its own products and services, often provided via an integrated ecosystem of delivery. Some of its services are BT Connect Acceleration, BT UC, BT Branch UC, Connect Cisco SD-WAN, Connect Meraki SD-WAN, Connect Intelligence IWAN, Connect Intelligence InfoVista, Connect Intelligence Riverbed and Agile Connect. The company has a solid migration base for clients that are moving from traditional managed WAN to SD-WAN.



Strengths

Experienced resource mix: BT has highly experienced business and solution consultants as well as technology practitioners to advise and formulate delivery for client-specific projects. It has a mix of its own and partner solutions to deliver highly capable managed WAN solutions to different client sizes.

Proven results: The company has a wide, global range of reference projects in managed WAN services as well as in many industry types and focus areas.

Model flexibility: BT offers both in-house solutions and partner solutions off the shelf. It also provides highly customized solutions to meet specific client requirements.



Caution

BT has a larger portfolio than many of its competitors. However, due to the absence of a mobile arm, the company is believed (in some markets) to be holding back its fully converged services offerings, unlike some of its global competitors, especially with the market buzz around 5G.

The firm is believed to be more focused on EMEA instead of being a truly global player.



2019 ISG Provider Lens™ Leader

BT is a strong global provider of managed WAN services and has strong SD-WAN migration capabilities.

CENTURYLINK

Overview

CenturyLink has been ranked consistently as one of the top-performing managed WAN companies globally. It has a string of acquired companies such as Qwest, Time Warner Telecom, Global Crossing and Level 3. In the past year, the company has made various announcements on ethernet, ethernet-LAN, SD-WAN, wavelengths, security services, unified communications and collaborations (UCC) services VPN, VoIP and other internet applications, including access extensions. It has a wide infrastructure network in more than 60 countries, served by a staff of 47,000, along with an extensive partner network.

Strengths

Network management: CenturyLink offers three service sets with design and implementation for different levels of WAN management depending on the depth and skill set required. Managed services provide 24/7 monitoring throughout the year. Advanced managed services allocate a dedicated resource to monitor, manage and remediate contracted fault and performance criteria. Customer managed services offer a fully outsourced network management solution.

IT and data center management: CenturyLink uses three service tiers of network management to extend into IT infrastructure and application management in a complimentary manner.

Client and end-customer centric: The company has implemented a slew of new tools and methods to enhance customer experience for clients and end users. It incorporates artificial intelligence, fault and engineering fix information, order and remedial management, and billing and usage systems.

Caution

CenturyLink has a strong foothold in Europe and the Americas but lacks a deep presence in APAC and Africa. The company has been investing heavily to improve its position and gain strong client references over the next two years.

Despite its significant experience in acquisitions, CenturyLink faces some risk in its expansion plans and absorption capabilities while penetrating the markets in APAC and Africa.



2019 ISG Provider Lens™ Leader

CenturyLink is a highly capable managed WAN services provider with extensive experience and capabilities for further migration to SDN/NFV.

IBM

 Overview

IBM has been at the forefront of enterprise network and digital transformation with its managed service offerings, led by IBM Global Technology Services (GTS) with additional focus from the telecom and media and entertainment divisions. The firm has a strong portfolio of its own solutions and a large, well-qualified partner ecosystem in the managed services and managed WAN markets, enabling it to deliver comprehensive, provider-agnostic solutions for enterprises. Solutions may be full, partial, hybrid, fully secure or an MPLS replacement and can be delivered as a variety of managed service offerings.

 Strengths

Strong constellation of own and partner solution offerings: With a strong portfolio of its own solutions and a partner ecosystem of leading players in the managed services and managed WAN space, IBM has been able to deliver comprehensive, provider-agnostic solutions. The firm has demonstrated an ability to deliver multi-provider networks based on open standards and zero vendor lock-ins, thereby maximizing investment protection.

Multiple solutions options to suit client: Solutions may be full WAN, partial WAN, hybrid private/public cloud enabled, fully/highly secure, or an MPLS replacement. They could also involve datacenters and IT infrastructure and can be delivered in a variety of managed service types and options.

Unrivaled global coverage, portfolio and innovation: IBM has an almost unrivaled global footprint. The firm has a well-established network and technology infrastructure and offers integration and operations services globally. It was one of the first suppliers to offer a network as a service (NaaS) delivery and pricing model and is continuing to innovate in this area.

 Caution

IBM appears to be positioned strongly in the large to high-end mid-market enterprise segments. The utilization of the NaaS model could turn the entire mid-sized enterprise segment into a potential client base. The firm may be able to achieve this by remodeling its sales channel costs and approach.

While prioritizing its strategy for SDN and SD-WAN, IBM should avoid raising concerns among its existing managed WAN clients or destabilizing the base.



2019 ISG Provider Lens™ Leader

IBM is a robust and world-leading provider with a vendor-agnostic managed WAN and network proposition and high innovation.

ORANGE BUSINESS SERVICES

Overview

Orange Business Services covers a large panel of managed network services worldwide (including MPLS, SD-WAN, internet services), which can be integrated or combined with managed security, WAN optimization and application visibility services. These can be provided either on appliance or on VNF and on various levels of service management. MSI takes care of multi-vendor and multi-network type integration and management. Orange Business Services provides consulting services, access sourcing, Orange certification programs, and process simplification services. It has a web portal to support managed network services for quotes, orders and self-service. The firm has 25,000 employees, 4 regional operation centers in more than 60 countries, and over 3,000 multinational enterprise customers.

Strengths

Excellent coverage and partnership constellation: Orange Business Services has a wide network coverage and many partnerships. It enables full compatibility with Flexible SD-WAN through virtual SD-WAN gateways, enabling easy migration from traditional managed WAN to SD-WAN.

Feature-rich advanced solutions: Orange Business Services offers a full set of access, continuity, and advanced features and architectures (for e.g., always-on, dual, dual load balancing with ME, LL, SDSL, ADSL, internet, 3/4G, sub-VPN, multiple VPN, multicast, voice and video connectivity).

Global and local data center and next-gen hub delivery: The company offers enhanced cloud connectivity with dedicated or hybrid networking. It is flexible to any underlying network, Orange MPLS network, internet with SD-WAN overlay and ethernet services.

Caution

Orange Business Services is positioning itself as a provider of next-gen SDN services. It has demonstrated strong operational skills for complex, global deployments and should continue to be diligent in handling its existing managed WAN clients or destabilizing the base while promoting this strategy.

The SME marketplace has many small and new companies that have a strong local presence, particularly in APAC. This may erode the price point of the supply of managed services.



2019 ISG Provider Lens™ Leader

Orange Business Services has a clear strategic roadmap along with highly developed technologies and services to ensure a smooth transition from managed WAN to SD-WAN.

TECH MAHINDRA

Overview

Tech Mahindra employs 115,000 people and has generated \$4.8 billion in revenue globally. The company is a major business and technology consulting organization and is a strong player in global telecommunications. It provides managed WAN and SD-WAN offerings at competitive price points with advanced service delivery. The firm has leveraged its experience from many SD-WAN transition programs to develop a strong portfolio of off-the-shelf framework offerings. It also has a strong consulting-led practice that is focused on customizing solutions for specific client requirements. Tech Mahindra has a vast partner network and has made many strategic acquisitions and partnerships over the last three years to deliver robust managed network propositions.

Strengths

Managed service offerings in multiple industry types: Tech Mahindra has a comprehensive portfolio of industry specific as well as more generic managed network propositions. It has a team of highly experienced consultants and practitioners who are focused on providing managed network services in different industry sectors.

Strong portfolio and partnership offerings: Tech Mahindra has innovative solutions and products such as VNF Xchange and netOps.ai. The company also offers best-of-breed solutions from partners such as AT&T FlexWareSM, Silver Peak and Rakuten, for managed network clients.

Technical competence: The company's strength lies in consulting and its own technologies. It has decades of experience in delivering to telecom service providers globally. The firm has extensive expertise in managed networks and efficiency-boosting transition programs that make use of established methods and cloud/multi-cloud environments to deliver at a full-enterprise scale. Tech Mahindra works with other technology, software and provider companies to enable smooth deployments. It has many reference projects worldwide.

Caution

Changing the core focus from telco and engineering to enterprise and managed services can impact delivery methods and team deployments unless care is taken to ensure momentum and equal servicing of both client categories with adequate staffing availability.



2019 ISG Provider Lens™ Leader

Tech Mahindra efficiently delivers managed network services and transition programs in innovative ways, assisted by highly effective products.

T-SYSTEMS

Overview

T-Systems provides high quality services throughout Europe (100 percent coverage) and many other international markets. It covers more than 180,000 sites, utilizing more than 2,500 networks to deliver four-fold redundancy at a platform level. The company has a global reach of more than 180 countries and territories and has over 2,400 global points of presence (POPs), including 1,200 in Europe. Managed networks fall under its enterprise network services division. T-Systems offers custom and packaged solutions to specific industry verticals along with enterprise-wide packages.

Strengths

Planned and implemented advancements: T-Systems has adopted the SAFe, Tribes, Squads approach. It is engaged in delivering technology and service programs such as MPLS cloud connect, secure internet cloud connect, next-generation networks and ethernet access. The firm has planned to add more cloud solutions, gateways and automation this year.

Strong partner network: T-Systems has made many strategic partnerships with networks providers, including BT, Telefonica and PCCW as regional partners and ngena as a group association. It also has a strategic supplier arrangement with Viptela. Through this partnership ecosystem, the company is committed to delivering high quality and secure managed services.

Well-communicated on-roadmap: The firm's network portfolio is clearly structured, and its innovation initiatives are well funded. Its portfolio upgrades are strategically planned and executed, and the roadmap is shared with industry observers.

Caution

T-Systems has a larger portfolio than many of its competitors. However, it must provide visibility with respect to its offerings and improve specific use cases from its vast reference base for new and potential clients.



2019 ISG Provider Lens™ Leader

T-Systems provides a comprehensive enterprise managed service portfolio. It also has a vast international network and an excellent strategy roadmap for future development.

WIPRO

Overview

Wipro is an internationally renowned company with 171,500 employees in 57 countries, serving 1,115 global clients via 14 global delivery locations. Its managed network services portfolio is part of Cloud and Infrastructure Services (CIS) — Wipro's fastest-growing division, which includes its focused segment, Business Services Management. The firm follows a consulting-led approach to deliver off-the-shelf solutions and highly tailored client-specific solutions. Some of these include Wipro digital's Designit, ITIL integrated service platforms, Wipro SmartView for governance, Cloud Trust Security framework, Wipro HOLMES™ RPA/AI methods and toolsets and Wipro WANTAGE. It also offers partner solutions and products from companies such as Riverbed and Cisco.

Strengths

Wipro WANTAGE: Wipro offers innovative enterprise WAN optimization as a pay-as-you-grow model with comprehensive lifecycle services to enable one-day realization of cost savings with zero upfront investment. It incorporates primary/secondary data centers, headquarter/branch offices and mobile workers.

Wipro Insightix™ for existing network assessment and maturity, mapped to transition: This solution measures the maturity across 10 dimensions to assess the network readiness for the present, near future and future business growth. It provides a granular review of the network infrastructure with an expert analysis of the network's architecture, deployment and operational state.

Addressing the lifecycle: Wipro Digital Experience Platform, Wipro Integrated Agile DevOps Platform (WID) and the ServiceNXT initiative are aimed to ease the incorporation of managed services and prepare enterprises for a software-defined transition.

Caution

Wipro offers a plethora of tools and processes to clients in managed networking. It should provide unified and comprehensive models as enablers for new clients.

The market demand for additional industry-specific solutions and expertise may push Wipro to invest heavily in a retraining program to ensure that it has adequate knowledge for each vertical.



2019 ISG Provider Lens™ Leader

Wipro produces highly innovative solutions backed by expertise, toolsets, methods and processes, including AI and RPA.

RISING STAR: LOGICALIS

Overview

Headquartered in the U.K, Logicalis designs, builds and supports ICT solutions for customers throughout Europe, North and South America, Asia Pacific and Africa. Its primary focus for its 6,000 employees worldwide is the provision of workspace communication and collaboration, data center and cloud services, security and network infrastructure, data and information strategies and professional and managed services. Its managed services operation centers, based on ITIL best practices, are in the U.S., U.K., Germany, Argentina, Brazil, China and Malaysia. The firm has annualized revenues of \$1.7 billion, has operations in 25 countries and serves more than 10,000 customers worldwide.

Strengths

Extensive portfolio: Logicalis has an extensive portfolio of managed and hosted managed services that encompass the end-to-end management of multi-vendor, multi-technology ICT environments. It enables customers to take a flexible approach to IT operations and major transformation projects.

Good partner ecosystem and excellent reference cases: The company has developed a large partner network of solution and service providers. It also has many reference customers in the enterprise, provider and carrier segments.

Caution

Not all enterprises consider Logicalis as a full-service, full spectrum core-to-edge provider on a global level but more of a local or regional managed services provider. The company must change this image to enable deeper penetration into the multi-national enterprises market



2019 ISG Provider Lens™ Rising Star

Logicalis is an increasingly important company in the managed WAN space globally with its combination of strong tools, NOCs and capabilities.



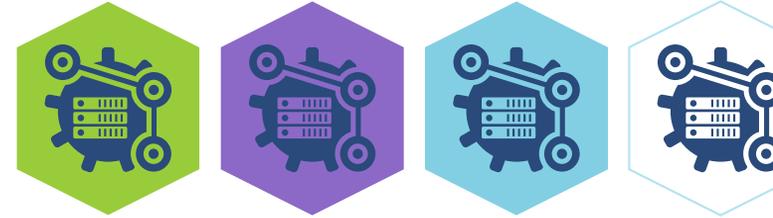
Methodology

METHODOLOGY

The ISG Provider Lens™ 2019 - "Network - Software Defined Solutions and Services" research study analyses the relevant software vendors and service providers in the Global 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 Network - Software Defined Solutions and Services
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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Jan Erik Aase is a director and principal analyst for ISG. He has more than 35 years of collective experience as an enterprise client, a services provider, an ISG advisor and analyst. Jan Erik has overall accountability for the ISG Provider Lens™ reports, including both the buyer-centric archetype reports and the worldwide quadrant reports focused on provider strengths and portfolio attractiveness. He sets the research agenda and ensures the quality and consistency of the Provider Lens™ team.

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