ISG Provider Lens™

2019

Network — Software Defined Solutions and Services 2019

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Table of Contents

Definition

This ISG Provider Lens™ study examines the different kinds of global network offerings related to software-defined networking. These include SDN, SD-WAN, SD-WAN (DIY) equipment and service supply, and associated security, core-branch, branch-edge (including SD-LAN) and mobility service offerings. The study also looks at the more traditional managed wide area network (WAN) market offerings. For users, both traditional WAN and software-defined markets are extremely important.

Existing managed WAN services, multi-protocol label switching (MPL) and similar products still form the backbone of revenue generation and most of the customer deployments in many telco and service providers worldwide. This situation, however, is rapidly changing. SDN and software-defined WAN (SD-WAN) are evolving and have a rapidly expanding market presence. Several other related network services, such as network function virtualization (NFV), mobility (LTE/4G/5G) services, and software-defined local area networks (SD-LAN) are also witnessing a similar trend. This is primarily driven by the ongoing digital transformation of business processes, organizations and business models to meet the agility and flexibility requirements in a dynamic, globalized world, resulting in boosted customer satisfaction and opportunity, and lower network costs.

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

The ISG Provider Lens™ study offers IT-decision makers:

- Transparency of strengths and weaknesses of relevant providers
- Differentiated positioning of providers by segments
- Focus on several markets, including global, U.S., Germany, U.K., and Nordics.

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

Quadrant Research

As part of this ISG Provider Lens™ quadrant study, we are introducing the following seven quadrants under Network — Software Defined Solutions and Services 2019.

Network - Software Defined Solutions and Services 2019	
Managed WAN Services	Mobile Network (4G/5G) Additional (non-core) Services
SDN Transformation Services (Consulting & Implementation)	SD-WAN Equipment and Service Suppliers (DIY)
Network Technologies Suppliers (Core)	Network Technologies Suppliers (Mobile to Edge)
SDN Security Services	

Managed WAN Services

Managed WAN services cover the features and functionality that carriers offer in their WANs and at the customer point of demarcation. They are a collection of value-added services that include monitoring and reporting, security and outsourced customer premise equipment (CPE) functions. Many enterprises perceive managed WAN services as a way to outsource IT functions, and they purchase them along with consulting and professional services to assess, design and implement their enterprise networks. At a basic level, managed WAN services from carriers offer 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 CPE software is up-to-date and configured correctly; and overall lifecycle management.

This section covers all major suppliers of managed WAN services to enterprises.

Eligibility criteria:

- Product/Service 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
- Stability and roadmap planning of the provider
- Reference customer / site volume in deployment
- Competitiveness of offering and commercial terms

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

Fifth-generation mobile networks or wireless systems (commonly known as 5G) are the next telecommunications standards beyond the current LTE (long-term evolution)/4G technology operating in the millimeter wavebands (28, 38 and 60 GHz). 5G is designed to provide higher capacity than the current 4G, allowing a higher density of mobile broadband users 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 the Internet of things (IoT). In this segment, we cover 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 either as discrete solutions or as modules that will integrate with or are reliant on SDN or SD-WAN. We do not cover the core licensed mobile telephony/data services exclusively.

This section covers all suppliers of these additional services that make use of SD systems via LTE/4G or 5G delivery.

Eligibility criteria:

- Product/Service portfolio coverage and scope
- Ability to deliver as a value-added service within a 4G/5G environment utilizing SD methods
- Understanding of overall market area and innovations / contributions to that area
- Scope of partnerships and offerings integration into a coherent solution delivery to customer
- Stability and roadmap planning of the provider
- Reference customer / solutions in POC/ post pilot / commercial deployment
- Competitiveness of offering and types of commercial terms

SDN Transformation Services (Consulting & Implementation)

SDN and SD-WAN provide the benefits of SDN technology to traditionally hardware-based networking and can be related to network function virtualization (NFV). 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 thereby centralizing and simplifying network management. This overlay design abstracts software from hardware, enabling network virtualization and making the network more elastic. The SD-WAN architecture helps to reduce 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 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 advisors/consultants in this area and also pose as implementation enactors, enabling managed services provision and supplying complete solutions to enterprises. Consulting companies, large vendors and managed network services providers have been actively involved in offering SD-WAN as managed services packages in this area (independently or as part of partnership/consortium deals).

This section will cover all advisory/consulting, hardware and software, management/reporting tools, applications and services associated with delivering SD-WAN to enterprises (from consulting to managed SD-WAN services delivery, incorporating the 2018 SDN IPL segment focused specifically on managed SD-WAN).

Eligibility criteria:

- Product/Service portfolio coverage, completeness and scope
- Ability to deliver in consulting and implementational areas
- Understanding of overall market area and contributions to that area
- Scope of partnerships and offerings, management capability for the needed orchestration within a customer project
- Stability and roadmap planning of the provider
- Reference customer / solutions in post pilot / commercial deployment
- Competitiveness of offering and types of commercial terms

SD-WAN Equipment and Service Suppliers (DIY)

SD-WAN provides the benefits of SDN technology to traditionally hardware-based networking. It 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 thereby centralizing and simplifying network management. This overlay design abstracts software from hardware, enabling network virtualization and making the network more elastic. SD-WAN architecture helps to reduce 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 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 solutions to enterprises for their DIY (enterprises' own and non-managed) implementations and are increasingly partnering with licensed telco/service providers in their delivery packages in this space.

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

Eligibility criteria:

- Product/Service portfolio coverage, completeness and scope
- Ability to deliver equipment and service to customer, inclusive of prerequisite training
- Understanding of overall market area and contributions to that area
- Scope of partnerships and offerings, management capability for the needed orchestration within a customer project
- Openness of offering to avoid vendor lock-in
- Completeness of customer support and assistance post delivery
- Stability and roadmap planning of the provider
- Reference customer / solutions in post pilot / commercial deployment
- Competitiveness of offering and types of commercial terms

SDN Security Services

An SD-WAN is a logical overlay network that encompasses any WAN transport — public, private, 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, that 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 of security services for the network is that SD-WAN unifies secure connectivity over all transports while supporting transport independence. There's no need to use or 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 variety of security capabilities, can enhance its inherent security capabilities by the addition of advanced security systems added as discrete overlays, services or applications and can be managed both automatically and at central and local levels.

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

Eligibility criteria:

- Product/Service portfolio coverage/focus, completeness and scope
- Understanding of overall security and specifically SDN / SD-WAN and additional focus areas
- Scope of partnerships and offerings, management capability for the needed orchestration to deliver integrated product
- Completeness and pro-activeness of customer support and advisory post delivery
- Third party accreditation of solution / test results and confidence delivery
- Stability and roadmap planning of the provider
- Reference customer / solutions in post pilot / commercial deployment
- Competitiveness of offering and types of commercial terms

Network Technologies Suppliers (Core)

SDN 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 between the network control plane and underlying data forwarding plane, including both physical and virtual devices. It is related to NFV but is fundamentally different 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 virtual LANs (VLANs), routed subnets and firewall access control lists (ACLs). An SDN-based network virtualization application supports the arbitrary assignment of IP/MAC addressing schemes while simultaneously automating network configuration tasks and enforcing 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 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, since all the underlying network hardware is addressable through a common abstraction protocol. Such a protocol 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 workloads assigned according to attributes, like 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 purchased either directly by enterprises or by service providers for specific enterprise projects.

Eligibility criteria:

- Product portfolio coverage, focus areas, completeness of broader solutions
- Ability to deliver equipment and service to customer, inclusive of prerequisite training
- Understanding of overall market area, technology environment and evolutions and contributions to that area
- Scope of partnerships and offerings, management capability for the needed orchestration within a customer project
- Openness of offering to avoid vendor lock-in
- Completeness of customer support and assistance post delivery
- Stability and roadmap planning of the provider
- Reference customer / solutions in post pilot / commercial deployment
- Competitiveness of offering and types of commercial terms

Network Technologies Suppliers (Mobile to Edge)

SDN technology enables improvements in network agility and automation while substantially reducing the cost of network operations when compared to traditional network deployments. Using an industry standard data plane abstraction protocol (such as OpenFlow) allows the use of any type and brand of data plane devices, since all the underlying network hardware is addressable through a common abstraction protocol. Such a protocol allows the dynamic and automatic provisioning of virtual network segments and virtual routing services on both physical and virtual networking devices. Additionally, all edge components may be managed and dealt with in the same manner as core and SD-WAN components, with software defined capabilities then allowing access to include the branch and edge functionality, 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 (SDMNs) and software-defined local area networks (SD-LANs) that includes both wireless (SD-WLAN) or mobile (SD-WMLAN).

This segment will look at all main vendors and service providers (such as telcos) supplying stand-alone or solutions which can integrate into a wider enterprise wide SD-WAN strategy, to the branch or remote office locations incorporating WiFi/Wireless and LAN/SD-LAN solutions, including vCPE, SDMN and SD-LAN-specific vendors.

Eligibility criteria:

- Product portfolio coverage, focus areas, completeness of broader solutions
- Ability to deliver equipment and service to customer, inclusive of prerequisite training
- Understanding of overall market area, technology environment and evolutions and contributions to that area
- Scope of partnerships and offerings, management capability for the needed orchestration within a customer project
- Openness of offering to avoid vendor lock-in
- Completeness of customer support and assistance post delivery
- Stability and roadmap planning of the provider
- Reference customer / solutions in post pilot / commercial deployment
- Competitiveness of offering and types of commercial terms

Archetype report

This strategic report supports improved awareness, knowledge and decision making on the capabilities and positioning of IT and business service providers. The new ISG Provider Lens™ Archetype studies provide a means to align sets of ISG-identified client requirements with known provider capabilities.

The report will identify four to six archetypes that represent buyer characteristics and buying requirements for IT or BPO service lines:

- Globally focused.
- Represent ISG Advisor perception of client buying patterns.
- Non-prescriptive nor rank based.
- Help align buy-side needs with provider-side capabilities to reduce costs for both sides.

Figure 1: Sample ISG Provider Lens™ Study Provider Listing

Traditional Archetype Leaders	Staff Augmentation Focus	T&M Pricing Focus	Packaged Technology Capabilities	Custom Development Focus
A	◕	●	◕	◐
B	◕	◕	◕	◐
C	●	◕	◕	◕
D	●	●	●	◔
E	◕	●	●	◔
F	◕	◕	◐	●
G	●	●	◐	◕
H	◕	◕	◔	●

● Score 4 out of 4 ◕ Score 3 out of 4 ◐ Score 2 out of 4 ◔ Score 1 out of 4

Research production disclaimer:

ISG collects data for the purposes of writing research and creating provider/vendor profiles. The profiles and supporting data are used by ISG advisors to make recommendations and inform their clients of the experience and qualifications of any applicable provider/vendor for outsourcing work identified by the clients. This data is collected as part of the ISG FutureSource process and the Candidate Provider Qualification (CPQ) process. ISG may choose to only utilize this collected data pertaining to certain countries or regions for the education and purposes of its advisors and not to produce ISG Provider Lens™ reports. These decisions will be made based on the level and completeness of information received directly from providers/vendors and the availability of experienced analysts for those countries or regions. Submitted information may also be used for individual research projects or for briefing notes that will be written by the lead analysts.

Schedule

The research phase falls in the period between **February and June 2019** during which the survey, evaluation, analysis and validation will take place. The results will be presented to the media in **August 2019**.

Milestones	Beginning	End
Survey phase	February 18, 2019	March 15, 2019
Sneak previews	June 24, 2019	
Content provisioning	August 05, 2019	
Press release	August 12, 2019	

Refer to the link below to view/download the Provider Lens 2019 Research Agenda :
https://isg-one.com/docs/default-source/default-document-library/isg-provider-lens-annual-plan-2019.pdf?sfvrsn=c323cc31_0

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Do you need any further information?

If you have any questions, please do not hesitate to contact us at isglens@isg-one.com.

Partial list of companies being invited for the survey

Are you in the list or do you see your company as relevant provider that is missing in the list? Then feel free to contact us to ensure your active participation in the research phase.

1&1

1000° DIGITAL

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Acuative

Aerohive Networks

Akamai

Alcatel-Lucent

Allied Telesis

ALTRAN

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América Móvil (KPN & Telekom Austria)

Apcela

AppSphere

Arista

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