Network — Software Defined Solutions and Services

A research report comparing service provider strengths and competitive differentiators
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Executive Summary

Rapid evolution toward end-to-end secure SD networks

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

Enterprises are evaluating various means to increase their agility, flexibility, competitiveness, delivery structures and remote working and continuity practices. A large part of this challenge is not only associated with technology use, but also with the transformation of established processes and traditional management practices. Enterprises are also analyzing how companies can achieve a sufficient degree of flexibility, speed and collaboration internally and across and outside of enterprise boundaries securely, while being able to master their challenges to deliver benefits.

SD networks—foundations for future safe networks.
Executive Summary

to themselves and their (ever more mobile) customers and users, including at the edge of the business and edge of the traditional network.

Enterprise agility goes far beyond traditional network abilities and provisioning capabilities in a constantly changing competitive environment. CEOs and chief technology officers (CTOs) must understand that software-defined networking works together with cloudification, intelligent edge and mobility strategies, along with digital business transformation areas such as AI, IoT, automation and collaboration. These collectively have a high influence on agility, flexibility, productivity and profitability across enterprises.

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

**Increasing flexibility and agility, while simplifying management:** Enterprises are increasingly focusing on improving the integration, automation, orchestration and management of network resources and processes. This has evolved to encompass software-defined networking. 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 trend is being driven by enterprises’ desire to seamlessly add applications and network resources to meet business and user goals more efficiently and securely without creating silos or depending on single vendors.

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

**Increasing security across networks, including cloud-based networks:** Network security has become a major point of concern across business units and enterprises, in line with the changes within modern networks and the expectations of full security from core to edge in all networks enabled or simplified by SD-networking, which is vital in provisioning cloud-based and hybrid networks.

**Consuming managed or co-managed service, while increasing customer satisfaction and sales:** The client experience can be enhanced by allowing them to consume via modern payment terms and conditions in a fully managed or co-managed manner, while retaining or enhancing the ability to respond quickly and seamlessly to customer enquiries and rapidly provide (often automatically) new services via SD networks. At the same time, this tends to boost sales and retain customers, while sinking staffing costs in the enterprise. This has become crucial to many enterprises.

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

Most telecommunication service suppliers and network service suppliers, as well as systems integrators, have an impressive portfolio of SD-WAN and other SD network solutions. These range from partial or function-specific solutions to complete end-to-end SD-WAN or SD network solutions, with many solutions differing based on the enterprise size, scope of offering, industry type, or desired reach and interaction between enterprises and customers or end users. Others have introduced other advanced SDN-based technological innovations such as intent-based networks that use AI/machine learning interactions and control, or edge intelligence and computing solutions, with SD-LAN or SD-wireless or wireless and mobile LAN (SD-WLAN or SD-WMLAN), sometimes coupled with enterprise 4G/5G mobility solutions inherently in use. This is further driven by the transition of many enterprises to cloud and multicloud environments, which are well supported by SD networks, from enterprise core to edge. Further change is apparent with the early implementation around fully ISEN environments (SASE), with strong growth forecasted over the next 12 to 24 months.

SD networks utilized in advanced next-gen network deployments and SASE.
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## Provider Positioning

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Introduction

Definition

This ISG Provider Lens™ study, Network — Software Defined Solutions and Services 2022, examines various kinds of global network offerings related to enterprise networks and software-defined networking. These include software defined wide area networks (SD-WAN), which include managed SD-WAN services, consulting and advisory services and implementation support. The study focuses on enterprise network technology and services supply, concentrating on providers of all technology and services related to networks that enterprises implement and operate themselves, (including full and partial SD-WAN solutions, OSS/BSS), covering all areas from the network core to edge-branch technology and services. The study also looks at edge technologies and services, including Internet of Things (IoT, universal/virtual customer premises equipment, or u/vCPE) and software-defined local area networks (SD-LAN) including the ones delivered through mobile and 4G/5G technologies and the service offerings related to these segments. In addition, the study will examine secure access service edge (SASE), which is a fast growing, overarching, secure and fully integrated network environment for businesses.

Enterprises are evaluating various means to increase their agility, flexibility, competitiveness, delivery structures and remote working and continuity practices. This is mainly due to the impacts of COVID-19 pandemic globally during 2020 and 2021. A large part of this challenge is not only associated with technology use, but also with the transformation of established processes and traditional management practices. Enterprises are also analyzing how companies can achieve a sufficient degree of flexibility, speed and collaboration internally and across and outside of enterprise boundaries, while...
being able to overcome their challenges, to deliver the benefits to themselves and their (ever more mobile) customers and users. Enterprises want to realize these benefits at the edge of the business and edge of the traditional network, in a highly secure manner. This adjustment and the speed at which it is realized are relevant and critical for the entire enterprise organization and value stream. Enterprises must understand that software-defined networking works together with cloudification, intelligent edge and mobility strategies, along with digital business transformation areas such as AI, IoT, machine learning and automation and collaboration. They also want to examine and potentially implement overarching strategies linking business goals, security and networking together into fully integrated architecture and systems such as SASE. These collectively have a high influence on agility, flexibility, productivity, security, customer/user satisfaction and profitability.

The report is an update following the spin-off between IBM and Kyndryl.
Scope of the Report

In this ISG Provider Lens™ quadrant study, ISG includes the following five quadrants on Managed (SD) WAN Services, SDN Transformation Services (Consulting and Implementation), Enterprise Networks Technology and Service Suppliers, Edge Technologies and Services and Secure Access Service Edge (SASE) solutions.

This ISG Provider Lens™ study offers ICT-decision makers:

- Transparency on the strengths and weaknesses of relevant providers
- A differentiated positioning of providers by segments
- Focus on regional market

Our study serves as the basis for important decision-making in terms of positioning, key relationships and go-to-market considerations. ISG advisors and enterprise clients also use information from these reports to evaluate their existing vendor relationships and potential engagements.

Provider Classifications

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

- **Midmarket**: Companies with 100 to 4,999 employees or revenues between US$20 million and US$999 million with central headquarters in the respective country, usually privately owned.

- **Large Accounts**: Multinational companies with more than 5,000 employees or revenue above US$1 billion, with activities worldwide and globally distributed decision-making structures.

The ISG Provider Lens™ quadrants are created using an evaluation matrix containing four segments (Leader, Product Challenger, Market Challenger and Contender), and the providers are positioned accordingly. Each ISG Provider Lens quadrant may include service providers that ISG believe has strong potential to move into the Leader quadrant. This type of provider can be classified as a Rising Star.

Number of providers in each quadrant:
ISG rates and positions the most relevant providers according to the scope of the report for each quadrant and limits the maximum of providers per quadrant to 25 (exceptions are possible).
Introduction

Provider Classifications: Quadrant Key

**Product Challengers** offer a product and service portfolio that reflect excellent service and technology stacks. These providers and vendors deliver an unmatched broad and deep range of capabilities. They show evidence of investing to enhance their market presence and competitive strengths.

**Leaders** have a comprehensive product and service offering, a strong market presence and established competitive position. The product portfolios and competitive strategies of Leaders are strongly positioned to win business in the markets covered by the study. The Leaders also represent innovative strength and competitive stability.

**Rising Stars** have promising portfolios or the market experience to become a Leader, including the required roadmap and adequate focus on key market trends and customer requirements. Rising Stars also have excellent management and understanding of the local market in the studied region. These vendors and service providers give evidence of significant progress toward their goals in the last 12 months. ISG expects Rising Stars to reach the Leader quadrant within the next 12 to 24 months if they continue their delivery of above-average market impact and strength of innovation.

**Not in** means the service provider or vendor was not included in this quadrant. Among the possible reasons for this designation: ISG could not obtain enough information to position the company; the company does not provide the relevant service or solution as defined for each quadrant of a study; or the company did not meet the eligibility criteria for the study quadrant. Omission from the quadrant does not imply that the service provider or vendor does not offer or plan to offer this service or solution.

**Contenders** offer services and products meeting the evaluation criteria that qualifies them to be included in the IPL quadrant. These promising service providers or vendors show evidence of rapidly investing in products/services and a follow sensible market approach with a goal of becoming a Product or Market Challenger within 12 to 18 months.

**Market Challengers** have a strong presence in the market and offer a significant edge over other vendors and providers based on competitive strength. Often, Market Challengers are the established and well-known vendors in the regions or vertical markets covered in the study.
Managed (SD) WAN Services
Managed (SD) WAN Services

Who Should Read This

This report is relevant to enterprises across all industries in the U.S. for evaluating providers that offer managed network services (primarily, enterprise SD-WAN or hybrid MPLS/IP WAN).

The quadrant report aims to highlight the network services and solutions proficiency of select providers, enabling enterprises to choose the right partner for network transformation.

ISG observes a demand among enterprises for managed WAN services to outsource their IT functions. They also want to purchase them along with consulting and professional services to assess, design and implement their enterprise networks in on-going operations.

Many enterprises struggle with digital transformation and may not have the right set of tools or resources. Service providers address this challenge by offering various service options ranging from physical management to monitoring and notifying to full management. They have extensive experience with managed takeovers (MTOs) where they can assume service management even if the underlying transport is not their own. Enterprises in the region are increasingly looking for managed SD-WAN services, and many of them are moving toward network-as-a-service infrastructure to augment their enterprise digital transformation efforts.

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

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.

Cybersecurity leaders should read this report to understand the current state of security capabilities associated with the providers of consulting and other SD-WAN transformation services.

Procurement professionals should read this report to learn more about managed SD-WAN service suppliers, as payment schemes for such services are often based on SLAs and KPIs being met, including levels of service and quality of service. Some providers also offer pay-as-you-consume or similar payment arrangements rather than traditional payment models.
This quadrant addresses the providers of enterprise WAN (primarily enterprise SD-WAN or hybrid MPLS/IP WAN) that deliver managed solutions and associated services to enable innovative and next-generation networking.

Dr. Kenn D Walters
Eligibility Criteria

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

Managed SD-WAN is a high growth segment in the U.S., followed by co-managed SD-WAN. A significant growth in integrating ever more complex security solutions (often from leading partners) has been observed this year, with many providers now marketing SD-WAN plus solutions, which in many ways come close to full SASE implementations.

From the 92 companies assessed for this study, 28 have qualified for this quadrant with nine being Leaders.

AT&T

AT&T 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 that cover the entire range of managed SD-WAN.

Comcast Business

Comcast Business offers managed SD-WAN, co-managed SD-WAN, managed SD-WAN OTT and multicloud connectivity, with security options — including proactive threat intelligence and hunting — covering both cloud and endpoint.

GTT

GTT offers a wide range of options within its managed SD-WAN portfolio. The company leverages its global, tier-1 IP backbone to transport client traffic between locations. Its SD-WAN continuously optimizes a client's network using AI capabilities to route traffic over the best available WAN circuit.

Kyndryl

Kyndryl was launched as a spin-off from IBM in November 2021. It is headquartered in New York, U.S., and operates in 60 countries. It offers a strong portfolio of proprietary solutions, as well as solutions from its extensive partner base, for the delivery of provider-agnostic SD-WAN.

Lumen

Lumen is accelerating its expansion in the managed SD-WAN market and is also focusing on the growing SASE marketplace. It has a formidable partnership ecosystem and delivers an extensive range of customized and industry-specific solutions.

NTT

NTT provides SD-WAN via its software-defined infrastructure (SDI) initiative, which is based on its managed network overlay services (MNOS) platforms, and the Cisco infrastructure with API management to enable easy multi-platform and vendor integration.

Orange Business Services

Orange Business Services' flexible SD-WAN offering 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 customized based on clients' requirements for a fully managed or co-managed service delivery.
T-Mobile

T-Mobile adopts an access-agnostic approach. Its sales and design/implementation process are highly advisory led. It works closely with clients to deliver customer-specific implementations and employs industry experts. T-Mobile’s managed SD-WAN solution (MNS Complete) is delivered either as a fully managed solution or for customer co-management.

Verizon

Verizon has built a large solution set of SD-WAN managed and co-managed services, using its own, extensive partner ecosystem of solutions and its own accelerators and tools, allowing secure connectivity over multiple network types. It is well positioned to grow continuously.

Wipro

Wipro’s managed SD-WAN services are part of its global Digital Network Services. The company ensures consulting-led delivery of both off-the-shelf and highly tailored specific solutions. It has a comprehensive portfolio, offering a wide range of advanced solution and service sets, tools and processes for its clients.
Managed (SD) WAN Services

**Overview**

Wipro’s managed SD-WAN services are part of its global Digital Network Services. The company ensures consulting-led delivery of tailored solutions. Its portfolio includes Wipro Designit, Insightix™, NetFactory, ServiceNXT, NetBox, #WANFreedom, Wipro SmartView for governance, Cloud Trust Security framework, Wipro HOLMES™ RPA/AI methods and toolsets, and partner solutions and products from companies such as VMware, Palo Alto Networks, Versa Networks, Riverbed, HPE and Cisco.

**Strengths**

- **Portfolio of managed SD-WAN based around advanced solution offerings:** #WANFreedom is an integration of multiple WAN tools and products that are bundled with single-pane-of-glass management. The company takes a vendor-neutral approach that gives client enterprises the freedom of choice for SD-WAN technology, type of links and ISPs. The NetFactory solution set is focused on delivering templated managed SD-WAN solutions for specific and cross-industry enterprises, which can be customized based on their needs. The SDx security solution is an end-to-end, highly secure SDN/SD-WAN system.

- **Network assessment mapped to transition:** Wipro Insightix™ measures maturity across 10 dimensions to assess the network readiness for the present, near future and future growth of the business. It gives a granular review of the network infrastructure, along with an expert analysis of the architecture, deployment and operational state of the network to support planning for SD transition.

**Caution**

Wipro’s vast portfolio of innovative SD-WAN solutions, including its plethora of additional tools, methods and services, can be daunting to clients, especially the new ones. Adding clear reference cases and examples of use cases and simplifying some of the additional features might help resolve this and assist in enhanced sales.

“Wipro delivers innovative and highly tailored SD network solutions in the U.S.”

Dr. Kenn D Walters

Wipro
SDN Transformation Services
(Consulting & Implementation)
Who Should Read This

This report is relevant to enterprises across all industries in the U.S. for evaluating providers of SDN transformation services that involve consulting and implementation.

The quadrant report aims to highlight the network service and solution proficiency of select providers that can handle network transformation, from consulting to implementation. ISG observes a demand among enterprises for SDN transformation services from third parties to transition from traditional networking to software-defined networking.

Regional enterprises are strengthening their network architectures with next-generation networks. This trend among enterprises is enabling them to move toward multilayer SD-WAN, to access dynamic network management tools, and promote advanced security and automate event management process.

Digital transformation leaders should read this report to understand how providers of SDN transformation services fit their digital transformation initiatives and how they compare to one another.

IT and network management leaders involved in strategy, architecture, operations and procurement should read this report to understand the relative positioning and capabilities of providers that can help them effectively consume SDN transformation services.

Cybersecurity leaders should read this report to understand the current state of security capabilities associated with the providers of consulting and other SD-WAN transformation services.

Procurement professionals should read this report if they are dealing with consulting and advisory services and not just equipment.
This quadrant analyzes providers of advisory or consulting and implementation services associated with delivering software-defined networking and SD-WAN to enterprises, from initial advisor consulting to service delivery and rollout.

Dr. Kenn D Walters
Definition
Traditionally, modifications or new installations of IT devices in a data center and its external WAN networks involved making changes to each network component, which is time consuming. This rigid architecture is increasingly being challenged by current business requirements for more agility, flexibility, automation and security. Private, public, hybrid and multicloud networking, explosive mobile application usage in the workplace, IoT, Industry 4.0, big data, infrastructure as a service (XaaS) and intent-based AI and machine learning networking solutions all require a flexible network environment that can accommodate changes quickly with minimum human intervention. Software-defined networking provides many of these benefits compared with traditional hardware-based networking and is closely related to network function virtualization (NFV), cloudification strategies and digital transformation undertakings. By moving the control layer to the cloud and, therefore, centralizing and simplifying network management using its overlay architecture, SD-WAN is much easier to manage when compared to legacy WANs and addresses today’s digital transformation-driven business needs more effectively.

Suppliers in this area have been increasingly active as advisors or consultants for implementation, supplying complete or partial solutions to enterprises. They might also act as brokers and project managers to ensure combined coalition deliveries as planned. Consulting companies, large vendors and managed network services providers have also been actively involved in offering SD-WAN packages in this area, independently or as a part of partnership or consortium deals.

Eligibility Criteria
1. Scope of product or service portfolio
2. Ability to deliver consulting for strategizing right through to deploying technology, including providing support in all integration and implementation areas
3. Understanding of overall market and contributions to the same
4. Scope of partnerships and offerings and management capability for the needed orchestration within a customer project
5. Stability and roadmap planning capabilities
6. Reference customer or solutions post pilot or commercial deployment
7. Competitiveness of offering and types of commercial terms
Observations

Consulting or advisory-led engagements are effectively the norm in the highly complex enterprise- and industry-specific areas of SD networking, coupled with transformation and future state technology planning, which meets enterprises’ business roadmap goals. Many of the providers assessed within this quadrant employ advanced methods and processes to enable smooth planning of transitions to be translated at low risk into reality, which is a major market demand.

From the 92 companies assessed for this study, 26 have qualified for this quadrant with nine being Leaders and one Rising Star.

Apceala

Apceala has strong expertise in delivering advisory and consulting services for complete transformation programs in the U.S. It integrates its customer-centric approach with its industry expertise, backed by advanced technology and solutions.

AT&T

AT&T’s enterprise engagements are led by advisory and transformational consultants. It has a vast array of business and technology streams in the networking space. This has evolved over time to form a distinct focus and provisioning areas in SDN, SD-WAN and access.

Comcast Business

Comcast Business leverages experienced advisors in its customer engagement teams to ensure that client requirements are addressed, and their expectations are met through planned implementation.

IBM

IBM has retained its consulting unit, Global Business Services, which generates around $16 billion in revenue. It has not included this unit within the Kyndryl spin off. The consulting practice was formerly the Global Technology Services unit, including networks and edge advisory and outsourcing.

Juniper

Juniper has completely embraced the multivendor, agnostic supplier concept. Juniper Global Services aims at helping enterprises align AI with people, process and technology. Its Professional Services unit focuses mainly on automation, core and edge, data center and security.

Kyndryl

Kyndryl’s consulting methodology is technology led and practitioner assisted. The company brings together networking services and technology capabilities to demonstrate infrastructure agility.

Lumen

Lumen has an extensive partnership ecosystem and offers consultancy services to support the delivery of a wide range of client- and industry-specific solutions, including advanced embedded security solutions and managed operations.
Orange Business Services

Orange Business Services has a highly skilled advisory/consulting team for SD solutions. The team can combine or integrate MPLS, security, mobility and internet services with application visibility services, including AI orchestration, and its NextGen Hub products.

Verizon

Verizon Enterprise, with its strong consultative approach and a team of experts in this area, assists enterprises that are undergoing transformation in SD networks. It offers highly competitive, multiple pricing options and usage types for its supplied solution sets.

Wipro

Wipro’s strong advisory and transformational consulting expertise is supported by an extensive portfolio of innovative products, tools and services. Its Insightix™ assesses, measures network maturity and presents transformation roadmaps.

Tech Mahindra

Tech Mahindra (Rising Star) offers industry-specific advisory services, tools and processes, along with advanced managed services, engineering services and support. It uses cutting-edge automation and optimization solutions to address complex networking requirements of various cross-section of enterprises.
Overview

Wipro’s Digital Network Practice offers SD network consulting and transformation services for SDN data center networks, multicloud connect, SD-LAN and SD-WAN, together with advanced SD-WAN and SASE. The company ensures consulting-led delivery of both off-the-shelf and highly tailored specific solutions. Wipro’s Insightix™ is a digitized framework used for consulting and assessing current state and provides a short-term and long-term transformation roadmap aligned with business goals.

Strengths

Innovative and extensive advisory and solutions offering: Wipro’s vast advisory and transformational consulting expertise is backed by an extensive portfolio of innovative products, tools and services, along with its Insightix™. It includes #WANFreedom, covering the SD-WAN service definitions with a vendor neutral approach. Additionally, the Wipro NetFactory Model enables the network rollout to occur with a factory-assembly-line-like approach.

Automated benchmarking assessments assuring transformation: Wipro’s Insightix™ is an integral part of Wipro consulting. It enables benchmarking-led assessment of roadmap for the customer, assuring a successful and de-risked network transformation.

Managing and orchestrating with SLAs and client business goals: Wipro’s MDO is a single dashboard to orchestrate the business intent, with application performance across multiple network domains, performance dashboards and security reports. MDO connects not just access network domains, but also the SD-WAN, data center SDN and cloud.

Caution

Wipro is continuing to build industry-specific knowledge across the finance services, manufacturing and energy, retail, medical and chemical industries in the U.S. Maintaining and expanding these verticals with adequate local staffing remains a challenge for Wipro and many other providers in a resource-intensive marketplace. Internal training and promotional programs have become ever more vital during 2022.
Enterprise Networks Technology and Service Suppliers
Who Should Read This

This report is relevant to enterprises across all industries in the U.S. for evaluating suppliers of SD-WAN equipment and services.

In this quadrant report, ISG lays out the current market positioning of enterprise network technology and service suppliers in the U.S. and how they address the key challenges that enterprises face in the region.

Enterprises in the U.S. are moving toward vendor-agnostic, cost-optimized SD-WAN services that come with an integration architecture and are demonstrating a growing trend towards co-managed solution. They are also looking to build a highly programmable network fabric that spans data center, SD-WAN, multicloud and branch/edge networks.

IT and network management leaders involved in strategy, architecture, operations and procurement should read this report to understand the relative positioning and capabilities of SDN technology suppliers.

Cybersecurity leaders should read this report to understand the current state of security capabilities associated with providers of consulting and other SD-WAN transformation services.

Digital transformation leaders should read this report to understand how SDN technology suppliers fit their digital transformation initiatives and how they compare to one another.

Procurement professionals should read this report to learn more about SDN technology suppliers because packaging and pricing models deviate from traditional networking solutions.
This quadrant analyzes providers of software-defined networking core to edge technology and services purchased by enterprises for own operations, including SD-WAN DIY projects, management systems and end-device control, from the central core to distributed locations.

Dr. Kenn D Walters
Definition

SD-WAN is virtual and allows enterprises to bundle multiple WAN technologies and connections such as MPLS, broadband internet, 4G/long-term evolution (LTE) and ethernet and provision them as overall bandwidth. SD-WAN determines the path for transmitting data packets and the medium to be used; if a connection has excess load, another path is taken automatically. The virtual connections consist of multiple paths that are used simultaneously, along with core network functionality. 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, allowing ease in branch and remote set-up and management, together with secure enterprise policy-driven communications.

Eligibility Criteria

1. Product portfolio coverage, focus areas, completeness of modular delivery and integration with broader solutions
2. Ability to deliver equipment and service to customers, including requisite training
3. Ability to deliver value-added services within a modern enterprise environment, using software defined methods
4. Understanding of overall market area, technology environment and evolutions, and contributions to the same
5. Scope of partnerships and offerings and management capability of a customer project
6. Openness of offering to avoid vendor lock-in
7. Reference customer or solutions post proof of concept or pilot in commercial deployment
8. Competitiveness of offerings and types of commercial terms such as shared risk models
Observations

The supply of solutions or partial solutions directly to enterprises for their management and operation is still a high growth segment in the overall market. However, the trend is toward supply of fully managed, or increasingly, co-managed solutions, with some previous DIY operators moving back toward suppliers via the co-managed route. This quadrant is saturated with all supplier types, from carriers and service providers to system integrators, all focusing on extensive partner ecosystems.

From the 92 companies assessed for this study, 27 have qualified for this quadrant with nine being Leaders.

Apcela
Apcela offers SD-WAN services and hardware as an integrated offering for a global WAN, distributed security, and private connectivity to public cloud and SaaS providers with SD-WAN design, selection, deployment and management.

AT&T
AT&T leverages its experience with the newest technologies and discrete solutions, along with its own solutions, in the SD-WAN space. Additionally, it has a large ecosystem of partners to efficiently serve SD-WAN clients’ specific needs.

Cato Networks
Cato Networks delivers a global, cloud-based SD-WAN with in-built network security stack for all enterprise locations (including SD-WAN at the edge), cloud resources and mobile users.

Cisco
Cisco offers a broad array of infrastructure hardware and software, management and automation capabilities. The primary solution offerings in SD-WAN fall around the Cisco SD-WAN (Viptela) and Cisco Meraki (SME/branch focused) product ranges.

Juniper
Juniper is a well-known network equipment and solutions supplier for many carriers and service providers in the U.S. The company has fully embraced the multivendor, agnostic supplier network concept and multi-delivery channel networks as part of its main business.

Kyndryl
Kyndryl builds a highly programmable network fabric that spans data center/cloud (SDN data center) through to Edge by integrating capabilities to provide the best solution to meet client-specific needs.

Orange Business Services
Orange Business Services offers a strong portfolio of advanced SD-WAN, SASE and other SD networking solutions. The firm’s strategy, covering AI orchestration and its NextGen Hub, resolves any issues associated with multivendor and network integration and management.
Verizon has a vast range of products and services that are highly relevant from both in-house and its extensive partner ecosystem, which fully addresses the current enterprise needs in this segment, while preparing for advanced SASE type networks.

VMware has integrated its SD-WAN branch hardware and software with its NSX data center network virtualization software. It has an end-to-end secure solution that solves enterprises’ central, branch networking and security challenges, backed by AI analytics.

Wipro offers SDN consulting and transformation services for SDN data center networks, multicloud connect, SD-LAN (wired and wireless) and SD-WAN. It has an extensive portfolio of its own products and services and partner solutions and products.
Overview
The Digital Network Practice of Wipro offers SDN consulting and transformation services for SDN-data center network, multicloud connect, SD-LAN (wired plus wireless) and SD-WAN. It has an extensive range of its own portfolio of products and services and partner solutions and products from several leading brand partners. The company ensures consulting-led delivery of both off-the-shelf and highly tailored specific solutions.

Strengths
Vast portfolio range of solutions and services: Its portfolio includes Wipro digital Designit, Insightix™, NetBox, #WANFreedom, netFactory, ServiceNXT, Cloud Trust Security framework, Wipro HOLMES™ RPA/AI methods and toolsets and partner solutions from a large ecosystem. The #WANFreedom offering is a vendor neutral approach that gives enterprises the freedom of choice for SD-WAN technology, type of links and ISPs. NetBox is a branch SD network solution preconfigured and ready to deploy. The NetFactory Model enables the network rollout with a factory assembly line approach on time and within budget.

Operations monitoring and orchestration: Wipro’s MDO is a single dashboard to orchestrate the business intent, with application performance across multiple network domains, and with a blueprint-based standardization of network across various parts of the network, containing performance dashboards and security reports. MDO connects not just access network domains, but also the SD-WAN, data center SDN and cloud.

Caution
Wipro’s vast portfolio can be daunting to enterprise clients, especially the new ones. Creating easy-to-understand scenarios linked to products, coupled with references and use cases to explain how the various available options can be brought together, might help clarify how the range of products can be used and consumed and enhance sales.

"Wipro has a vast scale of advanced options available for enterprises and has proven references.”
Dr. Kenn D Walters
Edge Technologies and Services
Who Should Read This

This report is relevant to enterprises across all industries in the U.S. for evaluating providers that deliver technologies and services in the highly important network edge space. These cover hardware and software, management or reporting tools, and applications and other services associated with the network edge.

In this quadrant report, ISG lays out the current market positioning of edge technologies and services providers in the U.S. and how they address the key challenges that enterprises face in the region.

ISG observes a growing demand for edge computing and smart robotics, remote diagnosis, asset optimization, connected product integration and smart construction applications. The adoption of edge computing will increase in various industries as it combines real-time processing, hardware optimization capabilities and ubiquitous connectivity for IoT systems to maximize the efficiency of machines and the throughput of the entire process. Edge computing is broad enough to support many submarkets, but it will evolve from supporting thousands of custom patterns to merely dozens, with cloud providers taking an important role all the way to the edge or complementing edge solutions. Enterprises in the U.S. are looking to prioritize a distributed cloud-based solution as the default and future-proof edge offering by relying on partnerships and ecosystems over a single-vendor approach.

Digital transformation leaders should read this report to understand how providers of SDN transformation services fit their digital transformation initiatives and how they compare to one another.

IT and network management leaders involved in strategy, architecture, operations and procurement should read this report to understand the relative positioning and capabilities of providers that can help them effectively consume SDN transformation services.

Cybersecurity leaders should read this report to understand the current state of security capabilities associated with providers of consulting and other SD-WAN transformation services.
This quadrant analyzes providers delivering technologies across hardware and software, management and reporting tools and applications and offering services associated with edge network technology to enterprises across multiple verticals.

Dr. Kenn D Walters
**Definition**

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

Edge components may be managed in the same manner as core and SD-WAN components. Software-defined capabilities include branch and edge functionalities, along with all customer premises equipment (uCPE or vCPE) and associated software-defined mobile networks (SDMNs) and SD-LANs that include both wireless (SD-WLAN) or mobile (SD-WMLAN). SD capabilities also cover IoT and IIoT sensors and devices and control/security devices.

**Eligibility Criteria**

1. Product portfolio coverage, focus areas and completeness of modular or area solutions, together with integration into broader solutions
2. Ability to deliver requisite training and education to clients, if required, with proof of concept or studio
3. Understanding of overall market, technology environment and evolutions and contributions to the same, together with industry-specific knowledge and experience
4. Scope of partnerships and offerings and management capability of disparate providers and solutions within a customer project
5. Reference customer or solutions in proof-of-concept or pilot deployments or commercial deployments
6. Competitiveness of offerings and types of commercial terms
Observations

Edge (edge compute, network edge, branch edge and remote edge) has witnessed continuous explosive growth and has accelerated exponentially during the global pandemic, with the rise of remote working and today’s common hybrid working models. The expansion of IoT, SD-WLAN or SD-MWLAN makes this quadrant one of the fastest accelerating in terms of both overall YoY growth and enterprise proliferation across industry verticals.

From the 92 companies assessed for this study, 23 have qualified for this quadrant with eight being Leaders and one Rising Star.

Apcela

Apcela has secure edge infrastructure that encompasses connectivity SD-WAN overlay, cloud onRamp and security at the edge of cloud. SD network and security IaaS functions are fully available on the Arcus platform, along with network and security monitoring and management.

AT&T

AT&T’s Network Edge solution set brings high-performance cloud computing to the edge of the client network, integrating and scaling seamlessly with AT&T’s optimized 5G and fiber network services and extending client applications to the edge.

Extreme Networks

Extreme Networks develops and delivers highly innovative AI-based solutions for edge and wireless network infrastructure equipment and solutions based on SD networks and cloud, including cloud-to-edge principles to provide value additions to enterprises.

HPE Aruba

HPE Aruba is a leading WAN edge company focused on developing unique WAN edge products and solutions for the enterprise SD-WAN market, primarily via channel partners.

Lumen

Lumen offers a complete edge computing solution, which can be built by combining Edge Bare Metal and Lumen® Edge VM with Lumen® Edge Private Cloud and Lumen® Dynamic Connections to create an edge ecosystem that is designed to cover the needs of all next-gen apps and services.

Orange Business Services

Orange Business Services brings industry leading partners, combined with deep technical knowledge from in-house consultants, to create value-added edge solutions in various technologies, including uCPE, SDMNs and SD-LAN, and IoT and IIoT.

T-Mobile

T-Mobile has high visibility and competent offerings within the SD, mobile and edge networks space, many of which are considered as VAS solutions for 4G/5G mobile network users. These cover authentication, device management and endpoint security solution areas.
**Verizon**

Verizon has a comprehensive portfolio of core and edge SD networking technologies and services, including virtualized network services, Intelligence Edge, SDN 2.0, CX platforms and containers in the application edge.

**Wipro**

Wipro (Rising Star) has an extensive portfolio of its own products and services and from leading brand partner companies. Wipro’s Edge Cloud offerings bring unique value proposition to enterprises. Its Boundaryless Universal Edge (BLUE) is a comprehensive and innovative offering.
Wipro

Overview
Wipro has an extensive portfolio of its own products and services and partner solutions from leading brand partner companies. Its Edge Cloud offerings bring unique value proposition to meet edge requirements with best-of-the-breed solutions using hyper-converged infrastructure-based programmable infrastructure platforms, supporting virtual machines and container ecosystems, coupled with autonomous operations in an agile way.

Strengths
- **Edge Cloud solution set:** Wipro’s Edge Cloud offerings bring unique value proposition to meet edge requirements with best-of-the-breed solutions using hyper-converged infrastructure-based programmable infrastructure platforms, supporting virtual machines and container ecosystems, coupled with autonomous operations in an agile way.
- **BLUE Holistic edge framework:** BLUE is Wipro’s holistic framework that addresses the different aspects to delivering robust and production grade edge services. Wipro brings in a range of accelerators with the BLUE framework, including a ready-to-adopt, end-to-end cloud-based solution, reference architecture, reusable components, and shared services, including data center, container platform, cloud exchange and security services integration that are tuned to address the complete lifecycle.
- **BLUE ROBO management and orchestration:** BLUE brings together a range of capabilities into a single framework to seamlessly manage and orchestrate 5G edge application services and telco workload across core, edge and remote office/branch office (ROBO) sites.

Caution
Wipro’s vast portfolio of innovative solutions can be confusing for enterprises to fully grasp. This is also true of its powerful edge offerings. Adding clear use-case scenarios regarding the integration of some of the products and options would enable the clients to leverage more available options and might rapidly increase sales.
Secure Access Service Edge (SASE)
**Who Should Read This**

This report is relevant to enterprises across all industries in the U.S. for evaluating service providers of enterprise SASE.

In this quadrant report, ISG lays out the current market positioning of SASE services providers in the U.S. and how they address the key challenges that enterprises face in the region.

SASE is a complex proposition for enterprises, and providers are helping them address this challenge with a simple and flexible managed SASE solution. As several enterprises are moving to a hybrid or remote workforce model, SASE has become critical.

The SASE solutions offered by service providers tend to address security, cyberthreat problems and next-generation software-defined networks. Local enterprises are looking for SASE solutions to provide remote workers with the flexibility and performance needed to perform their duties and offer the assured experience of a high-bandwidth application that was hosted in their enterprise with high security.

**IT and network management leaders** involved in strategy, architecture, operations and procurement should read this report to understand the relative positioning and capabilities of providers that can help them effectively consume SASE services.

**Cybersecurity leaders** should read this report to understand the current state of security capabilities associated with the providers of consulting and other SASE services delivery.

**Digital transformation leaders** should read this report to understand how providers of SASE services fit their digital transformation initiatives and how they compare to one another.

**Procurement professionals** should read this report to learn more about SASE services suppliers because payment schemes for such services are often based on SLAs and KPIs being met, including levels of service and quality of service. Some providers also offer pay-as-you-consume or similar payment arrangements rather than traditional payment models.
This quadrant analyzes SASE solutions offered to enterprises as overarching integrated networks and security solutions from the enterprise core to edge, fully integrated with other enterprise business systems as appropriate for enterprises’ roadmaps.

Dr. Kenn D Walters
Secure Access Service Edge (SASE)

Definition

Enterprises are increasingly focused on migrating their information and communications technology and network operations into the cloud, while enhancing security in all touchpoint areas. Software-defined networks have been proven to assist with this by reducing complexity and enabling a reduced risk migration to single or multicloud environments for enterprises. Network security has become a major point of concern across business units and enterprises, in line with the changes within modern networks and the expectations of full security from core to edge in all networks. Security as a service or enhanced DIY security has been and continues to be a rapidly growing area. However, many enterprises perceive such solutions to not cover all possible touchpoints or evolve fast enough.

Considerable proposal, design and concept modeling work has been done in the area of integrated secure enterprise networks (ISEN), which has evolved into SASE, the currently accepted term in this space. Major components of SASE include SD-WAN, cloud access security broker (CASB), next generation firewall (NGFW) and firewall-as-a-service (FWaaS), zero trust network access (ZTNA), and secure web gateways (SWG). SASE encomasses secure and integrated access from the data center (which may encompass network function virtualization), through to branch or edge, including SD-LAN or its wireless or mobile variant.

Suppliers in this area have been increasingly active as advisors or consultants for implementation, supplying complete proofs of concept, pilots and solutions to enterprises. Large vendors and managed network services providers have also been actively involved in offering SASE.

Eligibility Criteria

1. Product portfolio coverage, focus areas, completeness of solutions, fully integrated broader solutions linking to data centers or other enterprise IT applications and systems
2. Membership or affiliation (including inputs) with global SASE technical and trade groups
3. Ability to enable clients to reuse the existing network and information and communications technology solutions, instead of just rip and replace
4. Ability to deliver training and provide both proofs of concept or studio simulations and testing for a client
5. Industry-specific knowledge and experience mapped to client type
6. Scope of partnerships and offerings and management capability for the needed orchestration within a customer project
7. Reference customer or solutions in pilot moving into commercial deployment
8. Competitiveness of offerings and types of commercial terms
Observations

The definition of integrated secure enterprise networks (ISEN) has been around for a number of years but has been made more popular by the coined term, SASE, more recently. SASE has lacked consistent agreement on its detailed constituent components for some time, but has now reached general consensus, thus bringing it from the pilot and proof-of-concept domain into many actual commercial rollouts, backed by strong solution offerings from highly reputable providers. It is one of the highest growing areas of the overall enterprise transformation and networks business currently and is expected to accelerate in terms of growth in the coming years.

From the 92 companies assessed for this study, 22 have qualified for this quadrant with eight being Leaders and one Rising Star.

AT&T

AT&T combines leading managed SD-WAN services, cybersecurity capabilities and the power of 5G to deliver advanced SASE solutions, while AT&T Cybersecurity Consulting offers an end-to-end SASE advisory service.

Cato Networks

Cato Networks delivers a next-generation secure networking SASE architecture that eliminates the complexities, costs and risks associated with legacy IT approaches based on disjointed point solutions.

Cisco

Cisco’s SASE architecture combines networking, connectivity, security and observability capabilities into a single offering. Its SASE approach is perceived to deliver simplicity, visibility and efficiency.

Lumen

Lumen delivers a wide range of client- and industry-specific solutions such as advanced embedded security solutions and managed operations, including SASE, via its Lumen Platform.

T-Mobile

T-Mobile’s managed SD-WAN solution (MNS Complete) in the SASE space is added to its dedicated cybersecurity offering to create a SASE architecture-compliant solution set for enterprises.

Verizon

Verizon’s Advanced SASE merges SD-WAN capabilities with comprehensive network security services to create a unified, cloud-delivered service model that supports the secure access needs of enterprises.
**Wipro** provides holistic services, leveraging SASE and zero-trust security frameworks, while measuring maturity of services on a continuous basis. It has strategic alliances with SASE product vendors and offers joint solutions as required.

**VMware**

**VMware’s** (Rising Star) SASE platform converges SD-WAN and cloud networking and cloud security to deliver flexibility, agility, security and scalability for enterprises of all sizes. The VMware SASE platform is offered as a service.
Secure Access Service Edge (SASE)

Wipro

Overview
In the U.S., Wipro has 40 facilities across 23 states, including delivery centers in Dallas, Indianapolis, Tampa and Atlanta. It provides holistic services leveraging SASE and zero-trust security frameworks, while measuring maturity of the services on a continuous basis. Wipro has strategic alliances with SASE product vendors and offers joint solutions as required. Wipro’s integration platforms help build a cohesive architecture with heterogenous security tools for enterprise.

Strengths
Secure remote access: Wipro provides assessment and advisory services to help customers migrate to zero trust-based dynamic services to access corporate resources securely. It provides managed services for remote access and leverages platforms to monitor and identify risks and remediate operational issues.

Secure internet access: Wipro offers assessment of internet access security and maturity of controls to protect organizations from web-based attacks and threats. Transformation of technologies and deployment of new security tools are provided, while managing the lifecycle of infrastructure.

Enterprise defense using SASE: Wipro helps establish the business case for migration of all possible security controls to SASE, with an integrated architecture in SD-WAAN and zero-trust security model. It leverages its framework, which connects all the components of network, internet gateways and secure access mechanism to provide security services through SASE. The managed services for SASE with all technologies are provided, leveraging reporting and automation platforms.

Caution
Entering into the rapid growth, but highly competitive, segment of SASE is a huge challenge for Wipro. Wipro has all of the required offerings and experience to sustain itself and grow as a Leader in this quadrant. However, its vast portfolio of innovative SASE solutions can be confusing for enterprises to fully grasp. An increased number of clear reference and use cases and potentially a step-by-step usage and deployment guide are a needed addition to its promotion channels.

“Wipro brings a strong portfolio of innovative solutions together as a powerful SASE offering.”
Dr. Kenn D Walters
Appendix
The ISG Provider Lens 2022 – Network — Software Defined Solutions and Services 2022 analyzes the relevant software vendors/service providers in the US market, based on a multi-phased research and analysis process, and positions these providers based on the ISG Research methodology.

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The research and analysis presented in this report includes research from the ISG Provider Lens program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers and analysis of publicly available market information from multiple sources. The data collected for this report represents information that ISG believes to be current as of June 2022, for providers who actively participated as well as for providers who did not. ISG recognizes that many mergers and acquisitions have taken place since that time, but those changes are not reflected in this report.

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

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The study was divided into the following steps:

1. **Definition of Life Network — Software Defined Solutions and Services 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. **Use of Star of Excellence CX-Data**
6. **Detailed analysis & evaluation of services & service documentation based on the facts & figures received from providers & other sources.**
7. **Use of the following key evaluation criteria:**
   - * Strategy & vision
   - * Tech Innovation
   - * Brand awareness and presence in the market
   - * Sales and partner landscape
   - * Breadth and depth of portfolio of services offered
   - * CX and Recommendation
Dr. Kenn D Walters  
**Distinguished Lead Analyst**

Dr. Kenn Walters is a highly skilled senior executive with over 40 years of experience in directing and managing major transformational technology projects, research and development programs, as well as extensive experience within providers and in global industry research and management consultancy. For ISG, Kenn has written over 100 articles as a distinguished lead analyst for ISG Insights in areas such as digital transformation, cloud managed networks, SD networking, SDN and digital disruptors. He and is a Distinguished lead analyst and author for multiple regions in the Provider Lens™ reports, (https://isg-one.com/research/isg-provider-lens) in such areas as Networks – Software Defined Networking, Digital Business Software and Services, Contact Center as a service and CC CX. He holds bachelor’s, master’s and doctorate degrees in computer science and communications systems.

Jan Erik Aase  
**Partner and Global Head – ISG Provider Lens**

Mr. Aase brings extensive experience in the implementation and research of service integration and management of both IT and business processes. With over 35 years of experience, he is highly skilled at analyzing vendor governance trends and methodologies, identifying inefficiencies in current processes, and advising the industry. Jan Erik has experience on all four sides of the sourcing and vendor governance lifecycle - as a client, an industry analyst, a service provider and an advisor. Now as a research director, principal analyst and global head of ISG Provider Lens™, he is very well positioned to assess and report on the state of the industry and make recommendations for both enterprises and service provider clients.
ISG Provider Lens™

The ISG Provider Lens™ Quadrant research series is the only service provider evaluation of its kind to combine empirical, data-driven research and market analysis with the real-world experience and observations of ISG’s global advisory team. Enterprises will find a wealth of detailed data and market analysis to help guide their selection of appropriate sourcing partners, while ISG advisors use the reports to validate their own market knowledge and make recommendations to ISG’s enterprise clients. The research currently covers providers offering their services across multiple geographies globally.

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Founded in 2006, and based in Stamford, Conn., ISG employs more than 1,300 digital-ready professionals operating in more than 20 countries—a global team known for its innovative thinking, market influence, deep industry and technology expertise, and world-class research and analytical capabilities based on the industry’s most comprehensive marketplace data. For more information, visit www.isg-one.com.