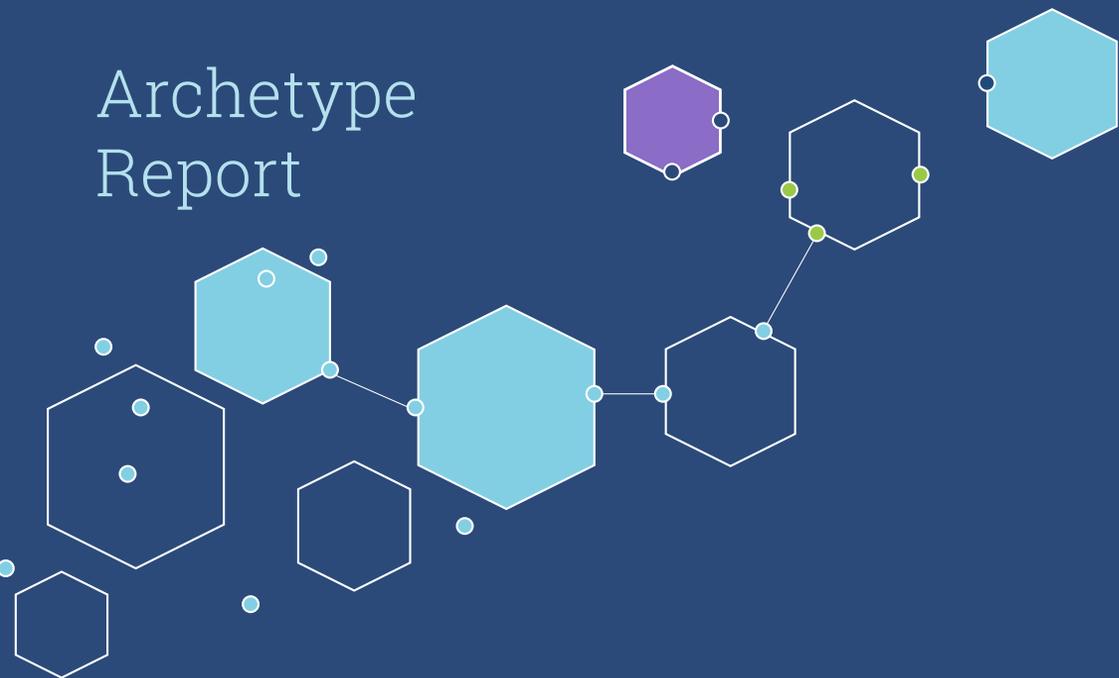


***ISG** Provider Lens™

Networks - Software Defined Solutions and Service Partners

Archetype
Report



A research report
aligning enterprise
requirements and
provider capabilities

June 2020

Customized reprint courtesy of:



**Business
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About this Report

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The research and analysis presented in this report includes research from the ISG Provider Lens™ program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers and analysis of publicly available market information from multiple sources. The data collected for this report represents information that was current as of March 2020. ISG recognizes that many mergers and acquisitions have taken place since that time, but those changes are not reflected in this report.

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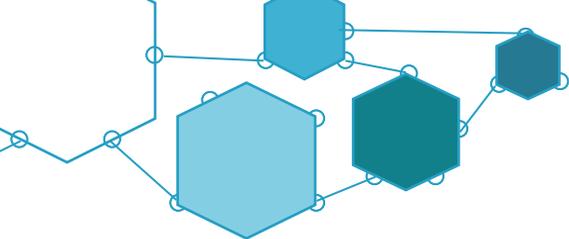
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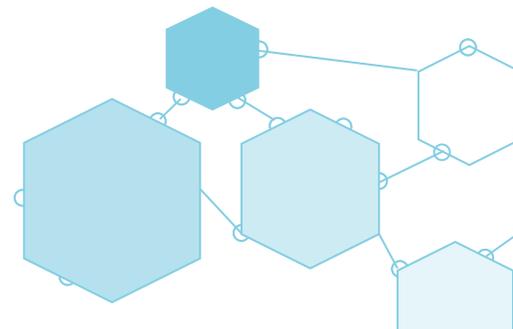
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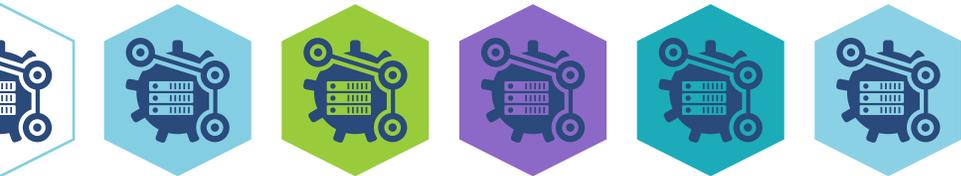
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EXECUTIVE SUMMARY

Managed wide area network (WAN) services, multi-protocol label switching (MPLS), among others form the backbone of the revenue generated through customer deployments by telcos and service providers worldwide. This, however, is changing rapidly. The software-defined network (SDN) and software defined WAN (SD-WAN) segments are evolving and rapidly capturing market share, as are other related network services such as network function virtualization (NFV), mobility (LTE/4G/5G) additional services and software-defined local area networks (SD-LAN), with their triggers and influences. This is driven primarily by cloud migration of information and communication technology (ICT) and the ongoing digital transformation of business processes. These changes enable businesses to meet the requirements of a dynamic world by increasing agility and flexibility, boosting customer satisfaction, strengthening competitive positioning and reducing overall network costs, allowing enterprises to reinvest these savings in advanced ICT, such as intent based networking with new strategies.



Many companies reviewed within this study are involved in early stage deployments or in advanced pilot projects and, in many cases, are converting these projects to production-level deployments; others have already completed this journey. Concurrently, new technology, methods and processes are under trial. This evolutionary rather than revolutionary approach, taken together with the relative newness of SDN leads ISG to note that significant volatility exists in the constellation of market providers. The volatility is set to continue and may even intensify during the remainder of 2020 as SDN continues to strengthen its hold in the enterprise landscape and more partnering or M&A between providers.

In our recently published ISG Provider Lens™ study on **Networks – Software Defined Solutions and Service Partners 2020**, we examined the requirements and capabilities of the provider landscape globally as well as in specific geographies within the following segments:

Managed WAN Services

Managed WAN services cover features and functionalities that carriers offer at the customer point of demarcation. It is 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 the means to outsource IT functions, and they purchase them along with consulting and professional services to assess, design and implement their networks. At a basic level, managed WAN services from carriers monitor and provide alerts on 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.

Managed SD-WAN Services

SD-WAN provides the benefits of SDN technology over traditional hardware-based networking. It is an overlay architecture with a networking foundation that is much easier to manage than legacy WAN and 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 flexible. The SD-WAN architecture reduces recurring network costs, offers network-wide control and visibility and simplifies the technology with zero-touch deployment and centralized management. The key aspect of SD-WAN architecture is that it can communicate with all network endpoints without the need for external mechanisms or additional protocols. Managed services providers have increasingly been active in supplying complete managed SD-WAN solutions to enterprises; they also offer them as white-label products for telco providers or integrators as a part of their broader strategic implementations.

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

SDN Transformation Services (Consulting & Implementation)

SDN and SD-WAN provide the benefits of SDN technology over traditional hardware-based networking and can be related to NFV. SD-WAN is driven by current business requirements to enable agility and flexibility, while simplifying network management, deployments and reducing costs. It is an overlay architecture with a networking foundation that is much easier to manage than legacy WANs; it moves the control layer to the cloud, thereby centralizing and simplifying network management. Providers have been increasingly active as advisors/consultants in this area and are also working as implementors, supplying complete or partial solutions to enterprises. Consulting companies, large vendors and managed network service providers have also been actively involved in offering SD-WAN packages in this area (independently or as a part of partnership/consortium deals).

This section covers all advisory/consulting, hardware and software, management/reporting tools, applications and services associated with delivering SD-WAN to enterprises (from consulting to delivery of managed SD-WAN services).

SD-WAN Equipment and Service Suppliers (DIY)

SD-WAN provides the benefits of SDN technology to traditionally hardware-based networking. It is easier to manage than legacy WANs, essentially centralizing and simplifying network management and easing deployment with a cloud-based control layer. This overlay design abstracts software from hardware, enabling network virtualization and making the network more flexible. 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. Providers 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.

Network Technologies Suppliers (Core to Mobile)

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

This section covers all vendors of SD core services that are purchased directly by either enterprises or service providers for specific enterprise projects. It includes those supplying solutions that can integrate into an enterprise wide SD-WAN strategy to the branch or remote office locations, incorporating Wi-Fi/wireless and LAN/SD-LAN solutions (including vCPE solutions).

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

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

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

All of the data gathered, and analysis undertaken during the process of creation of the Networks – Software Defined Solutions and Service Partners 2020 IPL study was used as direct input into this archetype report and helps shape the data inputs to the analysis ratings within this archetype.

Introduction

Networking and software-defined networking, solutions and services are high on many corporate agendas. The delivery of agile, flexible and cost-effective connectivity to support the roadmap of corporate business is fully supported by advisors and researchers that are concentrating on developing future safe and risk-reduced business models; these solutions and services are being delivered by a plethora of service providers globally. The transition from pilot deliveries of the solutions to commercial-scale deliveries, in conjunction with cloud adoption in ICT, is driving massive and rapid change throughout the enterprise community and the technology and service provider communities.

The main factors that are driving this rapid change in enterprises are:

Assistance in cloud and multi-cloud migrations: Enterprises are increasingly focusing on migrating their IT and network operations into the cloud. SDN has been proven to assist with this, reducing complexity and enabling a low-risk migration to single or multi-cloud environments.

Increased need for flexibility and agility: Enterprises have become increasingly focused on improving the integration, automation, orchestration and management of network resources and processes, often as part of their overall digital transformation strategy. This has evolved to encompass NFV and has since led to software defined networking in a wider sense. This trend is being further driven by enterprise desire to seamlessly

add applications and network resources to meet business and user goals more efficiently and securely (often expressed as increasing flexibility and agility), without creating silos or depending on vendors.

Focus on customer satisfaction increased sales: The ability to respond quickly and seamlessly to customer enquiries and rapidly provide (often automatically) new services via the software-defined network helps enterprises to improve client experience and boost sales and repeat custom.

Need for cost reduction and improved usage efficiency: Enterprises can improve network efficiency while reducing 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, such as while using social media applications or 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.

Simplification of network management and planning and integrating it with other enterprise IT initiatives. SD-WAN, by moving its control layer to the cloud, can operate and be managed via a one touch or single-pane-of-glass fully integrated management and reporting tool, coupling in the use of policy and automation, in real time. Flow and

integration with other applications and IT services can be coordinated via this and policy-based management services, together with service level agreement/key performance indicators (SLA/KPI) based rules can be applied.

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

The aforementioned factors have been driving significant changes to networks and their operations in the past three to four years. Most telecommunication service suppliers, network service suppliers and many systems integrators now field an extensive portfolio of SD-WAN and other SDN solutions, ranging from partial or function-specific solutions to end-to-end SD-WAN solutions, with many offering differing SD-WAN solutions specific to enterprise size, scope of enterprise offering, industry type, or desired reach and interaction between enterprise and customer/user. Others have introduced SD-WAN implementations to reap benefits in a shorter term or prepare themselves for other advanced technological innovations, such as intent-based networks, using AI/ML interactions and control.

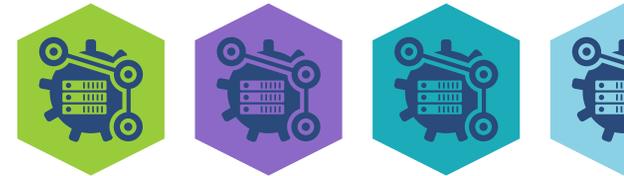
The presence of advanced connectivity infrastructure in many countries/regions worldwide, along with focus on replacement and upgrades of hardware-based controllers and switching methods, together with a high proliferation of 4G and increasing 5G pilot mobility solutions are assisting in the high market growth of SD-WAN and other SD-related networking solutions. This is further assisted with the migration of many enterprises to cloud and multi cloud environments, which SDN supports well.

This report uses research and analysis from ISG's long-running work with enterprise user clients and service providers, to examine key changes, approaches and buyers associated with networking and software defined networking services, and then map user requirements to provider offerings and capabilities.

Not every user enterprise has the same requirements. In this report, we use four buyer archetypes — as detailed in the sections that will follow — to identify and assess buyer-side requirements to derive business value versus provider-side offerings and capabilities. The assessment methodology has been developed and refined over several years of working with buyers to understand and articulate their service requirements, and from working with providers to understand how buyer requirements influence the development of and go-to-market strategies for suitable solutions.

The capabilities of 70 providers have been assessed in this report. Some service providers that are typically included in our work have not been included in this report either because they could not participate or declined from doing so. They may be included in future versions of this report, based on merit and willingness to provide current and relevant material.

Readers should not make any inferences based upon a service provider's absence from this report.



About This Research

This ISG Provider Lens™ report summarizes the relative capabilities of 70 Networking – Software Defined Solutions and Service Partners and their ability to address the requirements of our typical, frequently encountered categories of enterprise buyers (archetypes). Each archetype represents a unique set of business and technological needs and challenges.

Our research found no shortage of providers with capabilities adequate to satisfy the networking needs across most user archetypes. This is due in large part to two core realities regarding the archetypes:

- 1 The characteristics of each archetype are moving targets because, while the core requirements rarely change, the relative importance of different requirements can vary based on business and/or technological environment changes.
- 2 Most enterprises, especially larger firms, tend to include multiple archetypes. As each archetype's requirements evolve based on business and technological changes, so too does the presence and value of each archetype within the enterprise. Therefore, enterprises have an ongoing series of choices when it comes to services provider selection. They will need to strike a balance between optimal business value and relative cost of the provider engagement, integration and management. Market changes, new business models, fluctuating economic factors and other variables will continually add to and subtract from user needs. The assessment methodology has

been developed and refined over several years of working with buyers to understand and articulate their services requirements and from working with services providers to understand how those buyer requirements influence the development of suitable solutions and go-to-market strategies.

Where any revenues or monetary values are referenced, they are in in U.S. dollars (\$US) unless noted.

How to Use This Report

This report is intended to provide advice founded on ISG's experienced-based, proprietary assessment of services providers' relative suitability to the needs of the typical digital business transformation customer. This advice is then applied across each of the four archetypes as profiled. No recommendation or endorsement is indicated, suggested or implied. Clients must make the decision to engage with any provider based not only on their specific, current workplace needs, but also on other factors such as cost, culture and timing.

This report is organized as follows:

Client archetype descriptions. This section identifies and describes the most common user-side archetypes that we have identified in our ongoing research and analysis.

Assessments by archetype. These sections first detail each of the client archetypes, along with the types of service offerings that each typically requires to realize the most business value. Each archetype section includes our assessment of the relevant capabilities and positioning of the services providers surveyed and interviewed. It covers the relative suitability of the providers for each archetype based on the information they have provided to ISG. These assessments are developed using the data, analysis and comparative methodology described in the methodology section.

Methodology. In this section, we outline and explain how we developed and applied the data, analysis and insights provided in this report.

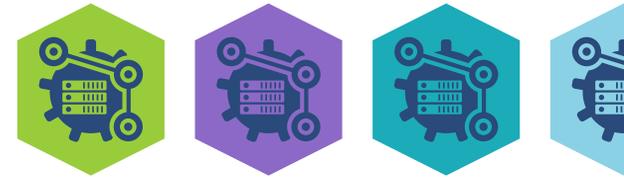
Please note: *This report presents service providers' known capabilities in the context of user enterprises' typical project needs (which are categorized as specific archetypes). This report is not meant to rank providers or to assert that there is one top provider with capabilities that can meet the requirements of all clients that identify themselves as a particular archetype.*

CLIENT ARCHETYPE DESCRIPTIONS

Client archetypes used in this report (and in our ongoing advisory and consulting engagements) represent the various types of clients ISG observes within this market, and how we classify them according to their relative service maturity and objectives. Each client archetype encapsulates the typical characteristics of a specific type of buyer that is looking to implement one or more process or functions. The use of archetypes enables us to assess providers repeatedly across multiple environments, industries, provider types and other variables within one service line.

The archetypes are not meant to be comprehensive examinations of all potential or likely client situations and requirements. They are meant to provide a simple, relevant and repeatable set of user-side requirements against which a similarly simple, relevant set of provider capabilities can be assessed.

The archetypes included in our reports are based on the most current marketplace knowledge regarding prevalent buy-side goals, resources, initiatives and requirements. Archetype characteristics are also developed and refined over time based on our advisory and consulting work with enterprise clients and service providers, and on our global business market research and advisory programs.





CONSERVATIVE

These clients are typically large-sized enterprises often in regulated industries. They are often highly silo'ed in their business units and IT and networking functions and these are not well aligned in all cases with overall business objectives. They often have their own data centers and some, but not necessarily comprehensive, experience in outsourcing or hosting their services to more specialised and highly secure managed service providers. They may have started the journey from legacy siloed solutions toward business focused and integrated solutions, with a clear aspiration and plan to have networks as a function, which together with the rest of IT enables business differentiation and performance/cost improvements (although they may not yet be at this stage). IT and networks groups will be seeking out new technology, including movement of some or all critical functions to the cloud, which demonstrates clear values or solves specific business issues. Cost and cost reduction, together with maintaining or improving quality and capability over current network models will be the big drivers for them. They will actively seek out multiple providers offering these cost saving/quality guarantees and shortlist them before making final supplier decisions from that short list based on pricing or cost of supply wherever possible. Such clients will have created a strategy for network transformation, including MPLS replacement or hybrid models and will be approaching these in bite-sized phases, (but may now be under pressure to accelerate the plan). Providers liaising with such enterprises must address legacy infrastructure, along with other considerations such as budgetary constraints and business rationale on any pilot or implementation project. Such clients will be seeking to conduct or may actively be conducting POC or pilot projects by business unit or in a siloed manner to justify cost/performance with deployment. These partial non SD network solutions may need to be brought together into a hybrid WAN model by utilizing MPLS heavily, which will need to operate efficiently and ensure all business as usual tasks, while SD networks have to be examined and migrated/integrated into this network at a later phase.

The logo consists of a large, bold, dark blue letter 'A' with a smaller, light blue number '2' positioned to its right, partially overlapping the 'A'.

MODERATE

These clients may be mid- to large-sized enterprises, often with their own data centers and some, but not necessarily deep, experience in sourcing or hosting their services. They may still be on the journey from legacy siloed solutions toward business-focused and integrated solutions, with a clear aspiration and plan to have networks as a function, which together with the rest of IT enables business differentiation and performance/cost improvements (although they may not yet be at this stage). Such enterprises will typically be on the journey to becoming or may already be partially cloud-based. IT and network groups will be seeking out new technology that demonstrates clear values or solves specific business issues or compelled to do so by other business areas. Cost and cost reduction over current network models are big drivers for them and they will seek out best price/performance wherever possible, with the use of single to multiple competing supplier models. Furthermore, such clients will have a strategy roadmap for network transformation and will be approaching this in bite-sized phases, but may now be under pressure to accelerate the plan. Legacy infrastructure must be addressed by any provider as also budgetary constraints and business rationale for any pilot or implementation project. They are likely to be planning to conduct or may already be conducting proof-of-concept or pilot projects by business unit or in a siloed manner to justify cost/performance into deployment. These partial SD network solutions may need to be brought together and migrated into an overarching SD network state as a later phase. They will typically have their own significant ICT departments that would wish to maintain in the short term, and will not have any major organizational change in their current overall roadmap.

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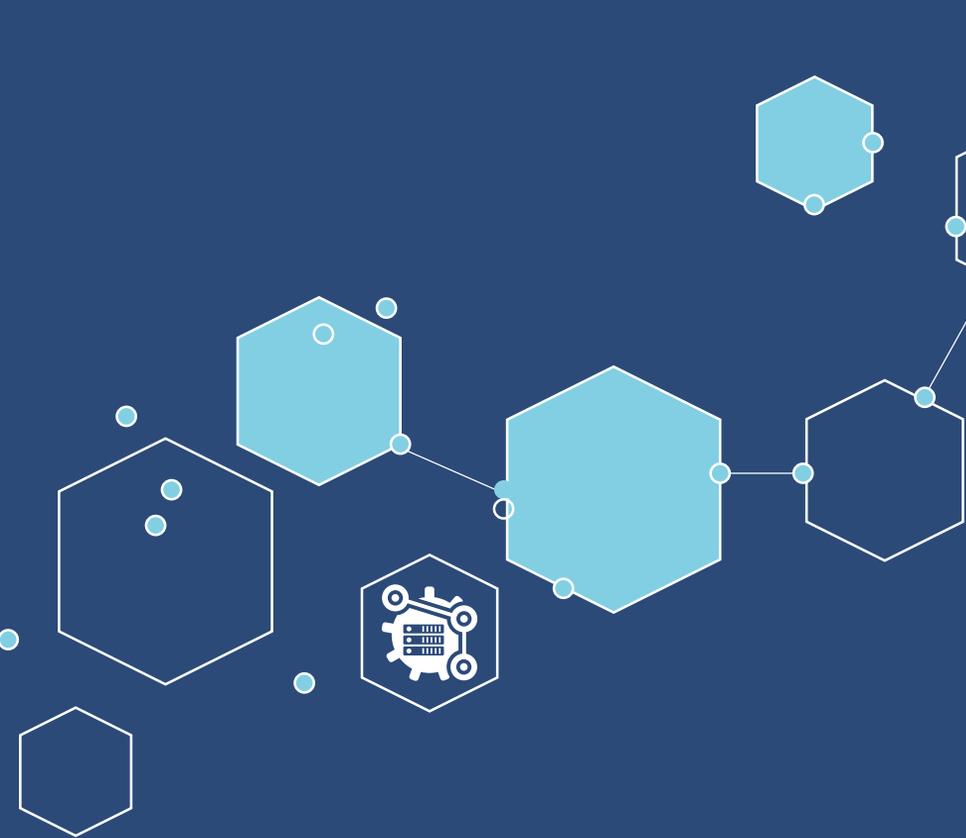
AGGRESSIVE ADOPTER

These clients may be mid to large-sized enterprises and have deep experience in outsourcing their services. They have evolved from legacy siloed solutions and do not have networks as a disjointed function, but rather a function, which, together with the rest of IT, enables business differentiation — often already or on the way to becoming cloud-based. Such enterprises will have data networks, and possibly voice networks, already dispersed. They may have their own small data centers or already host their services on a managed service basis. For these enterprises, the resource and hardware infrastructure is typically a single layer and the shift to managed services (when not already hosted) does not have a big cultural impact. They have created a strategy roadmap for network transformation and approach this in bite-sized phases, but may now be under pressure to accelerate the plan, migrating from MPLS-centric carrier plans toward IP-centric/MPLS hybrid-based solutions with advanced functionality. These clients will take best-of-breed solutions from across the market, which is vendor agnostic (where possible) and will look for a solution aimed at lowering costs while achieving business goals such as revenue increase, rapid service and transport delivery, improvement in customer service delivery and satisfaction together with enhanced security. They will typically have a solid portfolio of applications already running with new generation versions ready or with plans to launch over the new networking solution. Such clients are likely to conduct or may be already actively conducting proof-of-concept or pilot projects, as a minimum, and may be conducting live deployment trials with a view to moving these to a managed service environment in the mid-term.

A4

BLEEDING EDGE

These types of enterprises are small to mid-sized with fewer internal resources, typically digital natives and without significant legacy infrastructure to transform. Their chief information officers typically come from software development or digitally transformed enterprise backgrounds. Such enterprises are often not supported by dedicated sales/account teams from providers. They are likely past proof-of-concept trials and are actively seeking SD-WAN deployment to support newer, flexible networks, with ready to deploy or already cloud-based, disruptive applications. They typically are not looking for major support from their providers, but are looking for good price points for the purchase of equipment as ICT budget directly impacts overall company bottom line in a major way as it is seen as a cost center. Focus on increasing revenue is the driver behind their strategy, sinking costs and need to improve flexibility, agility, competitive positioning, and speed of reaction to competitive pressure. Furthermore, such enterprises are prepared, in some specific circumstances, to rapidly adopt disruptive or new solutions by means of proofs of concept or pilot projects, but, typically, will limit these to specific targeted solutions until proven. They do not see managed solutions as the primary option for these changes, preferring to adopt projects in-house and obtain pre-requisite skills in-house, utilizing advisory companies and vendor assistance, as required, to deliver projects and adapt their ICT roadmap, as required, to meet business goals.



Networks - Software Defined Solutions and Service Partners Archetypes



CONSERVATIVE

These clients are large-scale enterprises, often in regulated industries such as banking and finance that are completely risk averse. Such clients usually have legacy-heavy enterprise IT and networking function, with multiple silos, often disjointed from business, without automatic coupling of business needs with network delivery KPIs. For these organizations, enterprise IT and network functions are often perceived and budgeted as a cost center, and not a value generator. They undertake SD networking transformation slowly and cautiously, preferring to improve upon tried and trusted MPLS, wherever possible, and insist on POC and pilot deployments before any commercial roll-out decisions are made. Such enterprises typically have an environment of purchasing managed WAN, although they may have own ICT department and network functions and functionality that tend to be considered business confidential. They demand and expect the highest level of operational support from their providers. They are well versed in vendor selection and supplier relationships but are not necessarily well experienced in managed service provider partnering. Due to this, their natural inclination is to look at cost of solutions for WAN operations and support and they expect the solution to be made available from multiple competing vendors, usually picking the lowest possible price for an adequate solution from the offers available. Any offer to such clients must address legacy infrastructure and phased migration, as well as meet budgetary constraints and business case goals. These clients are often late adopters of SD-WAN or SD networking at an enterprise wide deployment level.

The typical characteristics of conservative clients include:

- Need to consolidate, modernize and manage enterprise IT and networks, often on an urgent basis in a legacy heavy environment.
- Have identified the need to migrate many network functions to a more vendor agnostic and inexpensive networking solution, while retaining overall control.
- View IT and networking as a cost center and prioritize cost reduction, without necessarily looking at additional business improvements beyond that.
- Seekers of advice and use cases on ways to transform in the short and mid-term, with short-term focus on projects with POC/pilot deployments, and by factoring in roll-out phases.
- Lack proactiveness and are hesitant in adopting SD networking due to perceived risk and disruption of business as usual.
- May have multiple small network solutions running in parallel to deal with perceived problems and deliver specific BU solutions, while not addressing overarching issues.

For SD networking, a conservative client will look for the following:

- Migration to the transformed ecosystem in manageable phases over time, without disrupting the legacy environment, which may be managed.
- Providers with deep experience and understanding of the client's industry, with references and use case examples.
- Providers that have both off-the-shelf and customizable solutions to meet enterprise needs based on well-known and global brand name networking solutions from within the provider and/or their partner pantheon.
- Advisory and consulting support on the specific network area, and short- and mid-term roadmap planning and strategy, with an understanding of how the two fit together and how migration from legacy to future state will occur while delivering cost savings and reducing risks.
- Solutions offering lowest price points to deliver required solution, with alternate finance or pricing models (vendor finance, BOT, risk/reward, etc), considered important.

Conservative clients will require a provider to at least offer the following:

- Vision focus and experience in helping clients with either a large legacy setup or clients that are in the initial stages of SD networking transformation journey within comparable or same industry, and on a similar scale.
- Roadmap and strategy for migration as well as project management competency, relating these to real-world examples to phase plan transformations from MPLS only solutions, including POC and pilot releases to prove the efficacy of the solutions.
- Comprehensive portfolio of own solutions plus solutions from the ecosystem of its partners, all with demonstrable references and use cases.
- Work with the client to create new metrics and KPIs to demonstrate the benefits and ROI of new solutions and manage and track them.
- Keen to obtain lowest price points and financing/payment options for the supply of managed services and solutions in comparison with other bids.

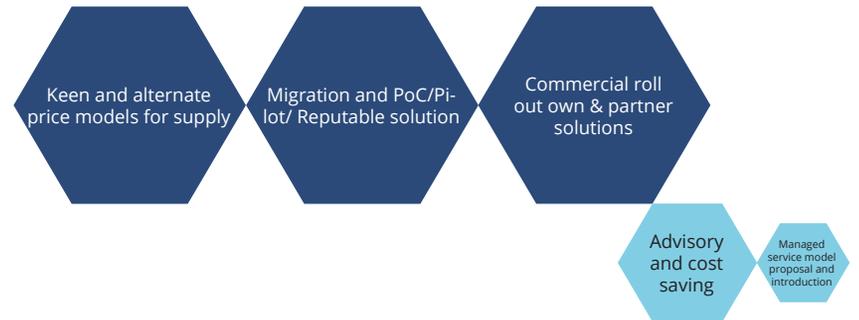
A Conservative Client Objectives

- Advisory offering to enable integration of existing legacy infrastructure with new SD networking considering cost reduction goals, both short and mid-term.
- Migration of existing solutions to new state based reputable solutions, including PoCs and pilots built in as assurance.
- Introduce as commercial roll-out, the piloted, effective new technologies and solutions, by considering legacy infrastructure as required and in tandem with objectives, then support this implementation.
- Reduce costs by increasing efficiency with new technology solutions that meet business requirements and are offered with alternative pricing that reduce costs including that of operations.
- Use alternative payment/pricing models, such as BOT, risk/reward and goal-based to design effective managed service propositions for mid-term deployments, against effective KPIs.



Fig 1 Conservative Influence of Provider Capabilities

■ Increase in future influence ■ Decrease in future influence



Size based on relative current importance in the archetype profile

Fig 2 Conservative Leaders

● Score 4 out of 4
◐ Score 3 out of 4
◑ Score 2 out of 4
◒ Score 1 out of 4

Of the 36 services providers included in our research, we found eight that stand out above the others as matching the conservative archetype based on our assessment of their capabilities as described in the methodology section in the appendix. These eight, referred to as archetype leaders, and their relevant capabilities are presented in Figure 2, and briefly examined in the following sections.

Note: The service providers listed are arranged in alphabetical order. No ranking is implied.

AI	Advisory Vision Capabilities/ State mapping	Migration and implementation capabilities	Commercial roll-out combined solution capabilities	Innovative supply/ pricing options	Innovative managed service options
Apcela	◐	◐	◐	◐	◐
AT&T	●	●	●	●	●
HCL	◑	◑	◑	●	●
IBM	●	●	●	●	●
NTT	◐	◑	◑	●	●
TCS	●	●	●	◐	◐
Tech Mahindra	●	●	●	●	●
Wipro	●	●	●	●	●

OTHER NOTEWORTHY PLAYERS – CONSERVATIVE

Some other providers scored high in or more areas that are important for the conservative client. However, they were not categorized as Leaders for this archetype because they did not rate high in enough categories.

Noteworthy providers (services providers with a high score in one or more categories) for conservative clients are:

Fig 3 Other Noteworthy Players – Conservative



Advisory Vision Capabilities/ State mapping	Migration and implemen-tation capabilities	Commercial roll-out combined solution capa-bilities	Innovative sup-ply/ pricing options	Innovative managed service options
Colt	Colt	Cato Networks	Aryaka	Aryaka
Extreme Networks	Ericsson	Colt	China Telecom	China Telecom
Juniper	Extreme Networks	Extreme Networks	Infosys	Extreme Networks
Nuage Networks	Infosys	Infosys	Juniper	Infosys
Orange Business Services	Nuage Networks	Nuage Networks	Masergy	Juniper
Telefonica	Telefonica	Talari	Orange Business Ser-vices	Masergy
Deutsche Telekom	Deutsche Telekom	Telefonica		Orange Business Services
VMware	VMware	Deutsche Telekom		
	Talari	VMware		

A2 MODERATE

These clients may be mid- to large-sized enterprises often with their own data centers and some, but not necessarily deep, experience in sourcing or hosting their services. They may still be on the journey from legacy siloed solutions toward business-focused and integrated solutions, with a clear aspiration and plan to have networks as a function, which, together with the rest of IT, enables business differentiation and performance/cost improvements, although they may not yet be at this stage. Such clients will usually be on the journey to becoming or may already be partially cloud-based. IT and networks groups will be seeking out new technologies that demonstrate clear values or solve specific business issues; when forced to adopt by other business areas such clients may be acquiring skill sets and knowledge on new technologies and methods to add to in-house expertise. Cost reduction over current network models will be the big driver for these clients and they will seek best price/performance wherever possible, by using single to multiple competing supplier models. Furthermore, they would have created a roadmap for network transformation and will be approaching this in bite-sized phases, (but may now be under pressure to accelerate the plan). Any provider liaising with such clients must address legacy infrastructure and other issues such as budgetary constraints and business case rationale for any pilot or implementation project, together with skill transfer programs. These clients are likely to seek or may already be actively conducting proof-of-concept or pilot projects potentially by business unit or in a siloed manner to cost/performance justify continuance into deployment trials. These partial SD network solutions may need to be brought together and migrated into an overarching SD network state as a later phase.

The typical characteristics of moderate clients include:

- Technology is viewed as important, but just a means to achieve the business end. Hybrids of new and older technology are acceptable if they can assist in short-term mandatory cost reduction and performance improvement required by business.
- Long-term strategic transformation to meet business requirements and help maintain a technical edge can be considered as a secondary stage of migration/integration.
- Proofs of concept or pilots will be required before commercial deployment decisions are taken, and will need to demonstrate promised benefits.
- Legacy and potentially siloed technology solutions must be considered within any short-term planning or deployment activities.
- Single to multiple competing supplier models of delivery will be considered. The primary goal will be one of financial and business advantage and will involve cost savings in the immediate term. Supplier lock-in prevention will be considered as important but will be secondary to the primary goal.

For SD Networking, a moderate client will look for the following:

- Providers that can advise on mapping the short- and mid-term requirements for networking, taking into account legacy infrastructure to deliver high benefits and cost reductions/efficiencies.
- Partners that have a vision on implementing SD networking-based environments and solutions, including hybrid and legacy inclusion, with references and use cases.
- Technology solutions that can be considered advanced but stable, are easy to integrate if multi-vendor, and can be scaled and integrated into the SD networking whole as a secondary step.
- Expertise in delivering the network as a managed service, with advanced KPIs integrated into a comprehensive managed IT whole, if required.
- Keen solution pricing, or flexible pricing options for the solution (such as performance or goal-based), delivering guaranteed savings to the enterprise, while increasing flexibility and overall capabilities.

Moderate clients will require a provider partner to at least offer the following:

- Capabilities to assess the existing IT and networking environment and roadmap, along with the consulting capabilities to allow a focus on short- and mid-term transformation to SD networking, delivering the biggest benefits as defined by business.
- Experience is delivering SD network proofs of concept and pilots to demonstrate effectiveness, and, after receiving approvals, scaling them rapidly into enterprise-wide solutions or managed service solutions.
- Own capabilities and strategic partnerships with leading SD networking technology and solution providers, with references and demonstrable experience that are preferably industry specific and involve similar sized enterprises.
- A flexible pricing model for solutions delivered as a purchase/install option rather than a managed solution. Such a model should look at alternate purchase options such as vendor financed, BOT contracts, pay per use and partial buy/move to managed.
- A risk sharing, profit sharing, results/goal based or similar alternative to traditional pricing model, where clients opt for a managed services delivery solution, with effective and applicable KPI templates available.

A2 Moderate Client Objectives

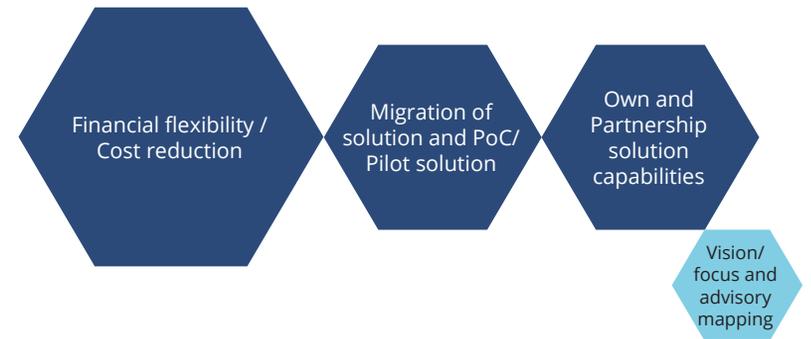
- Advisory offering integration of existing strategy plan with new SD network planning taking into account legacy state and cost reduction goals, both short and mid-term.
- Migration of existing solutions to new state, including advice on improvement of those solutions or additional solutions to meet initial and mid-term business objectives, with proofs of concept and pilots built in as assurance steps.
- Introduce the piloted effective new technologies and solutions as commercial roll-out, by considering legacy infrastructure as required, against plan objectives.
- Reduce costs by efficiency increases with new technology solutions that meet business requirements but are priced/offered with alternative pricing thereby reducing costs including that of operations if purchased by an enterprise, or use alternative payment/pricing models, such as risk/reward or goal based, wherever possible, if delivered as a managed service against effective KPIs.



Fig 4

Moderate Influence of Provider Capabilities

■ Increase in future influence ■ Decrease in future influence



Size based on relative current importance in the archetype profile

Fig 5 Moderate Leaders

● Score 4 out of 4 ◐ Score 3 out of 4 ◑ Score 2 out of 4 ◒ Score 1 out of 4

Of the 36 services providers included in our research, we found eight that stand out above the others as matching the moderate archetype based on our assessment of their capabilities as described in the methodology section in the appendix. These eight, referred to as archetype leaders, and their relevant capabilities are presented in Figure 5, and briefly examined in the following sections.

Note: The service providers listed are arranged in alphabetical order. No ranking is implied.

A2	Advisory & mapping capabilities	Migration and implementation capabilities	Combined solution capabilities	Innovative supply/pricing options
AT&T	●	●	●	●
CenturyLink	◐	●	●	●
IBM	●	●	●	●
TCS	●	●	●	◐
Tech Mahindra	◐	●	●	●
Verizon	●	●	●	●
Vodafone	●	●	●	◐
Wipro	◐	●	●	●

OTHER NOTEWORTHY PLAYERS – MODERATE

Some other providers scored high in or more areas that are important for the moderate client. However, they were not categorized as Leaders for this archetype because they did not rate high in adequate number of categories.

Noteworthy providers (services providers with a high score in one or more categories) for Moderate clients are:

Fig 6 Other Noteworthy Players – Moderate



Advisory & mapping capabilities

Apcela
Cato Networks
HCL
Juniper
Orange Business Services
Telefonica

Migration and implementation capabilities

Apcela
BT
Cato Networks
Colt
Extreme Networks
HCL
Infosys
Juniper
NTT
Nuage Networks
Orange Business Services
Telefonica
Telstra

Combined solution capabilities

Apcela
Cato Networks
Colt
Extreme Networks
HCL
Infosys
Mphasis
Nuage Networks
Prodapt
Telefonica
Telstra

Innovative supply/pricing options

Aryaka
BT
Colt
Dell Technologies
GTT
Infosys
Juniper
Masergy
NTT
Orange Business Services
PCCW
Deutsche Telekom

A3 AGGRESSIVE ADOPTER

These clients may be mid to large-sized enterprises and have deep experience in sourcing their services. They have evolved from legacy siloed solutions and will not have networks as a disjointed function, but rather a function that, together with the rest of IT, enables business differentiation — often already or on the way to becoming cloud-based and potentially delivered as a managed service. Such clients will have data networks (and possibly voice networks) already dispersed. They may have their own small data centers or may already host their services as a managed service. Resource and hardware infrastructure typically is a single layer that will not suffer a major impact if shifted to managed services (where it is not already hosted). These enterprises will have a definitive roadmap for network transformation, and will be approaching it in bite-sized phases (but may now be under pressure to accelerate the plan) — migrating from MPLS centric carrier plans towards IP centric/MPLS hybrid-based solutions, with advanced functionality. These clients will take best-of-breed solutions from across the market, which is vendor agnostic and will look for a solution aimed at lowering costs while achieving business goals such as revenue increases, rapid service and transport delivery, improvement of customer service delivery and satisfaction. They will, typically, have a solid portfolio of applications already running, with new generation versions ready or planned to launch over the new networking solution. They will likely seek to conduct or may already be actively conducting POC or pilot projects and may be undertaking live deployment trials.

The typical characteristics of aggressive adopter clients include:

- While the planning horizon varies by project, Aggressive Adopters usually take a short term implementational view based on a three-year strategy plan, with a roadmap of phased realization.
- Technology is viewed as important, but just a means to achieve the (business) end. Hybrids of new and older technology are acceptable if they can assist with long-term strategic transformation, meet business requirements and help maintain technical edge.
- Proofs of concept or pilots can be rolled out by business unit, as required, before being merged with a longer-term strategic whole if this approach allows business advantage in the short term.
- Best of breed and where possible future safe vendor-agnostic technology solutions will be favored over big name, but vendor lock-in solutions.
- Ease of working with local and international supplier (where applicable) will be preferred, where it will be important for the provider to be recognized in the market and have reference cases and support in the chosen locations/geographies.

For SD Networking, an Aggressive Adopter client will look for the following:

- Partners that have a vision on implementing SD networking-based environments and solutions, with references and use cases.
- Technology solutions that can be considered advanced, but stable, and where possible, vendor agnostic
- Expertise in delivering the network as a managed service, integrated into a comprehensive managed IT whole, if required.
- Expertise in creating financial models that link with business models and outcomes, and in establishing new KPIs and other metrics for managing them.

Aggressive Adopter clients will require a provider partner to at least offer the following:

- Capabilities to assess the existing IT and networking environment and roadmap, along with the consulting and expert advice on transformation requirements to SD networking and integration within the strategic plan.
- Experience in delivering SD network PoCs and pilots and successful scaling into enterprise-wide managed service solutions rapidly.
- Own capabilities and strategic partnerships with leading SD networking technology and solution providers, with references that are industry specific and with similar-sized enterprises
- With agile and innovative solutions, backed by continuous improvements in its managed operations during the contract period, with experience of structuring its operational managed contracts accordingly.
- Risk sharing, profit sharing, results-based or other similar alternatives to the traditional pricing model, where clients pay for services provided.

A3 Aggressive Adopter Client Objectives

- Integrate existing strategy plan with new SD networking planning with proofs of concept and pilots built in as assurance steps
- Migration of existing solutions to new state, including advice on improvement on those solutions or additional solutions possible.
- Enable more flexible and agile technology and application delivery to support business and customer.
- Move to managed service model, as a cost control and flexible strategy. as soon as feasible.
- Use alternative payment/pricing models, such as risk/reward, wherever possible.



Fig 7

Aggressive Adopter Influence of Provider Capabilities

■ Increase in future influence ■ Decrease in future influence



Size based on relative current importance in the archetype profile

Fig 8 Aggressive Adopter Leaders

● Score 4 out of 4 ◐ Score 3 out of 4 ◑ Score 2 out of 4 ◒ Score 1 out of 4

Of the 36 service providers included in our research, we found eight that stand out above the others as matching the aggressive adoption archetype based on our assessment of their capabilities as described in the methodology section in the appendix. These eight, referred to as archetype leaders, and their relevant capabilities are presented in Figure 8, and briefly examined in the following sections.

Note: The service providers listed are arranged in alphabetical order. No ranking is implied.

	Migration & Implementation expertise	Consulting / Advisory on roadmap	Solution and Partnership Pantheon	Pricing supply contract flexibility	Smooth operations as managed service
AT&T	●	●	●	●	●
IBM	●	●	●	●	●
NTT	◐	◐	●	●	●
Orange Business Services	◐	◐	●	●	◐
TCS	●	●	●	◑	◐
Tech Mahindra	◐	◐	●	●	●
Verizon	●	●	●	●	●
Wipro	●	◐	●	●	●

Orange Business Services

Orange Business Services covers a large range of network services worldwide. It has an extremely skilled cohort of advisory/consulting experts for software defined solutions, who may solicit expertise from across the company's various business services, including MPLS, SD-WAN, security, mobility and internet services, which may be integrated or combined with optimization and application visibility services.

The company's new strategy focused on SD networks, including co-innovation with Dell Technologies, and including AI orchestration and its NextGen Hub, takes care of multi-vendor and multi-network type integration and management. Orange Business Services delivers managed and co-managed solutions as well as network transition from pure DIY to co-managed states.

Orange Business Services offers large coverage through its core network and partnerships. It adopts a highly collaborative, open, and consultative approach with its clients. It provides full compatibility with flexible SD-WAN, which is an automated, intelligent, global solution with on-demand virtualized services. It is centrally orchestrated for end-to-end performance and control; this may be coupled with NextGenHub to allow fast scalability and flexibility of transport and AI Orchestration across solutions to bring power into easy to manage (or co-manage) solutions.



Business Services

OTHER NOTEWORTHY PLAYERS – AGGRESSIVE ADOPTER

Some other providers scored high in or more areas that are important for the aggressive adopter client. However, they were not categorized as Leaders for this archetype because they did not rate high in adequate number of categories.

Noteworthy providers (services providers with a high score in one or more categories) for aggressive adopter clients are:

Fig 9 Other Noteworthy Players – Aggressive Adopter



Migration & Implementation expertise	Consulting / Advisory on roadmap	Solution and Partnership Pantheon	Pricing supply contract flexibility	Smooth operations as managed service
Apcela	Cato Networks	Apcela	BT	BT
Cato Networks	CenturyLink	Cato Networks	China Telecom	Cato Networks
CenturyLink	Extreme Networks	CenturyLink	GTT	CenturyLink
Colt	HCL	Extreme Networks	PCCW	Extreme Networks
Extreme Networks	Infosys	HCL	Sprint	Infosys
HCL	Telefonica	Infosys	Telefonica	Juniper
Infosys	Deutsche Telekom	Prodapt	Telstra	Sprint
Telefonica	Vodafone	Telstra	Deutsche Telekom	Telefonica
Vodafone		Vodafone		

A4 BLEEDING EDGE

These types of enterprises are small to mid-sized, with fewer internal resources, typically born digitally, without significant legacy infrastructure to transform. Their CIOs typically come from software companies or digitally transformed enterprise backgrounds. They typically do transformations or ICT adoptions in house with own staff, utilizing external companies to deliver, as needed, on a project basis. They are often not supported by dedicated sales/account teams from suppliers. Such companies are likely past proof-of-concept trials and are actively seeking SD-WAN deployment to support newer, managed networks, with ready to deploy or already cloud-based, disruptive applications. They typically are not looking for major support from their providers, but are looking for good price points for the purchase of equipment as the ICT budget directly impacts overall company bottom line in a major way as it is seen as a cost center. Focus on increasing revenue is the additional driver behind their strategy, sinking costs, coupled with the need to improve flexibility, agility, competitive positioning and speed of reaction to competitive pressure. They are prepared, under specific circumstances, to adopt disruptive or new solutions, relatively rapidly, by means of POCs or pilot projects, but will typically limit these to specific targeted solutions until proven.

The typical characteristics of bleeding edge clients include:

- New service or development requirements originate from the business or customer side and must be deployed as rapidly and efficiently as possible at attractive network fulfillment price points.
- The solution ecosystem is an aggregation of the latest technologies and applications driven by business objectives.
- There is a focus on agility, flexibility and speed in deploying new capabilities to support a rapidly changing business landscape through the network.
- IT organizations may be primarily outsourced, and cloud based. They are not dependent on own staff support or personnel.
- Smaller and more adaptive in terms of organization and technologies deployed. High security levels are built in and expected. Ease of local management is expected.

For SD networking, a bleeding edge client will look for the following:

- Highly competitive pricing for solutions, customized to suit specific business needs and IT capabilities.
- Highly automated IT management and support systems that make extensive use of self-service and single-pane-of-glass features.
- Highly automated provisioning and service/microservice provisioning over the network.
- Consolidated IT in a nearshore or on-site location, with flexibility to support proximity of user as required.
- Services and solutions that operate in the cloud, wherever possible and appropriate, and are vendor agnostic and device agnostic (fixed, mobile, wired, wireless, etc.).

Bleeding edge clients will require a solution provider partner to at least offer the following:

- Agility, flexibility and innovation in technology and services backed by attractive pricing.
- A partner that has a vision and demonstrable experience with SD networking and solutions aimed at improving return on investment (ROI) or business differentiation.
- A partner with agile and innovative solutions, backed by continuous improvement and organic and/or inorganic growth of its portfolio
- A provider that can demonstrate the speed at which it can respond to market changes, and with reference projects and use cases at live clients.
- A partner with a portfolio of similar size and industry solutions and a dedicated SD networking practice.

A4 Bleeding Edge Client Objectives

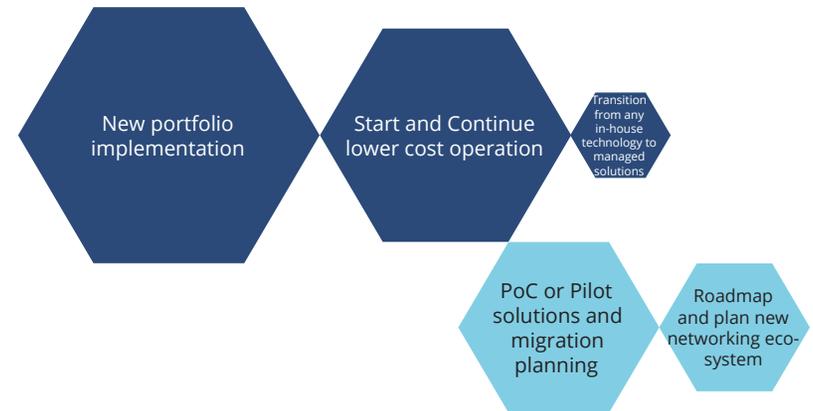
- Establish a roadmap and plan new networking and IT delivery ecosystem while sinking costs.
- Implement POC or pilot potential solutions.
- Move from in-house to more cloud-based and managed SD networking solutions.
- Deploy new selected solution rapidly.
- Start journey of flexible and agile IT linked to business objectives without vendor dependencies (operations).



Fig 10

Bleeding Edge Influence of Provider Capabilities

■ Increase in future influence ■ Decrease in future influence



Size based on relative current importance in the archetype profile

Fig 11 Bleeding Edge Leaders

● Score 4 out of 4 ◐ Score 3 out of 4 ◑ Score 2 out of 4 ◒ Score 1 out of 4

Of the 36 service providers included in our research, we found eight that stand out above the others as matching the bleeding edge archetype based on our assessment of their capabilities as described in the methodology section in the appendix. These eight referred to as archetype leaders, and their relevant capabilities are presented in Figure 11, and briefly examined in the following sections.

Note: The service providers listed are arranged in alphabetical order. No ranking is implied.

A4	Roadmap and plan new networking ecosystem	POC or pilot solutions and migration planning	Transition from any in-house technology to managed solutions	Implement new portfolio	Start and continue lower-cost operation
AT&T	●	●	●	●	●
CenturyLink	◐	●	●	◐	●
Extreme Networks	●	◐	●	●	●
IBM	●	●	●	●	●
Orange Business Services	◐	◐	●	◑	◐
Tech Mahindra	◐	●	●	◐	◐
Verizon	●	●	●	●	◐
Wipro	◐	●	●	●	●

Orange Business Services

Orange Business Services covers a large range of network services worldwide. It has a skilled cohort of advisory/consulting resources for software defined solutions. These skilled groups may call upon expertise from across Orange Business Services, including MPLS, SD-WAN, security, mobility and Internet services, which may be integrated or combined with WAN optimization and application visibility services. The new strategy focused on SD networks, and including co-innovation with Dell Technologies, together with AI orchestration and its NextGen Hub, takes care of multi-vendor and multi-network type integration and management. Orange Business Services delivers managed and co-managed solutions as well as network transition from pure DIY to co-managed states.

Orange Business Services offers expansive coverage through its core network and partnerships. It provides full compatibility with flexible SD-WAN, which is an automated, intelligent global solution with on-demand virtualized services. It is centrally orchestrated for end-to-end performance and control; this may be coupled with NextGenHub to allow fast scalability and flexibility of transport and AI Orchestration across solutions to bring power into easy to manage (or co-manage) solutions.

The company adopts a highly collaborative, open and consultative approach. It functions as a trusted advisor to guide small-to-medium enterprises and large enterprise clients in their commercial rollouts.



Business Services

OTHER NOTEWORTHY PLAYERS – BLEEDING EDGE

Some other providers scored high in or more areas that are important for the bleeding edge clients. However, they were not categorized as leaders for this archetype because they did not rate high in adequate number of categories.

Noteworthy providers (services providers with a high score in one or more categories) for bleeding edge clients are:

Fig 12 Other Noteworthy Players – Bleeding Edge



Advisory Vision Capabilities/ State mapping

Colt
 Apcela
 Cato Networks
 HCL
 Infosys
 Juniper
 NTT
 Nuage Networks
 Silver Peak
 TCS
 Telstra
 Deutsche Telekom
 Vodafone

Migration and implemen-tation capabilities

Colt
 Apcela
 BT
 Cato Networks
 Juniper
 NTT
 Nuage Networks
 Silver Peak
 Sprint
 TCS
 Telstra
 Deutsche Telekom

Commercial roll-out combined solution capa-bilities

Cato Networks
 Apcela
 Cisco
 HCL
 Infosys
 Juniper
 NTT
 Nuage Networks
 Silver Peak
 Vodafone

Innovative sup-ply/ pricing options

Aryaka
 Apcela
 Cato Networks
 Cisco
 HCL
 Prodapt
 Vodafone

Innovative managed service options

Aryaka
 Cato Networks
 Cisco
 HCL
 Infosys
 Juniper
 Nuage Networks
 Prodapt
 Silver Peak
 TCS
 Telstra
 Vodafone

SERVICE PROVIDERS ACROSS ARCHETYPES

	Conservative	Moderate	Aggressive Adopter	Bleeding Edge
Apcela	*	✓✓✓	✓✓	✓✓✓✓
Aryaka	✓✓	✓		
AT&T	*	*	*	*
BT		✓✓	✓✓	✓
Cato Networks	✓	✓✓✓	✓✓✓✓	✓✓✓✓
CenturyLink		*	✓✓✓✓	*
China Telecom	✓✓		✓	
Cisco				✓✓✓
Colt	✓✓✓	✓✓✓	✓	

- * = Leaders
- ✓ = Noteworthy Providers (number of check marks indicates the provider receiving full Harvey balls and also indicates the degree of alignment with the client archetype)
- = Other Providers (the service provider did not qualify for a leader or a noteworthy mention for the client archetype)

NOTE: All Service Providers evaluated for this report have the abilities to service all four archetypes, only those with the best fit to the capability requirements were identified as Leaders or Noteworthy Providers

SERVICE PROVIDERS ACROSS ARCHETYPES

	Conservative	Moderate	Aggressive Adopter	Bleeding Edge
Dell Technologies		✓		
Ericsson	✓			
Extreme Networks	✓✓✓✓	✓✓	✓✓✓✓	*
GTT		✓	✓	
HCL	*	✓✓✓	✓✓✓	✓✓✓✓
IBM	*	*	*	*
Infosys	✓✓✓✓	✓✓✓	✓✓✓✓	✓✓✓
Juniper	✓✓✓	✓✓✓	✓	✓✓✓✓
Masergy	✓✓	✓		

- * = Leaders
- ✓ = Noteworthy Providers (number of check marks indicates the provider receiving full Harvey balls and also indicates the degree of alignment with the client archetype)
- = Other Providers (the service provider did not qualify for a leader or a noteworthy mention for the client archetype)

NOTE: All Service Providers evaluated for this report have the abilities to service all four archetypes, only those with the best fit to the capability requirements were identified as Leaders or Noteworthy Providers

SERVICE PROVIDERS ACROSS ARCHETYPES

	Conservative	Moderate	Aggressive Adopter	Bleeding Edge
Mphasis		✓		
NTT	*	✓✓	*	✓✓✓
Nuage Networks	✓✓✓	✓✓		
Orange Business Services	✓✓✓	✓✓✓	*	*
PCCW		✓	✓	
Prodapt		✓	✓	✓✓
Silver Peak				✓✓✓✓
Sprint			✓✓	✓
Talari	✓			

- * = Leaders
- ✓ = Noteworthy Providers (number of check marks indicates the provider receiving full Harvey balls and also indicates the degree of alignment with the client archetype)
- = Other Providers (the service provider did not qualify for a leader or a noteworthy mention for the client archetype)

NOTE: All Service Providers evaluated for this report have the abilities to service all four archetypes, only those with the best fit to the capability requirements were identified as Leaders or Noteworthy Providers

SERVICE PROVIDERS ACROSS ARCHETYPES

	Conservative	Moderate	Aggressive Adopter	Bleeding Edge
TCS	*	*	*	✓✓✓
Tech Mahindra	*	*	*	*
Telefonica	✓✓✓	✓✓✓	✓✓✓✓	
Telstra		✓✓	✓✓	✓✓✓
T-Systems	✓✓✓	✓✓	✓✓	✓✓
Verizon		*	*	*
VMware	✓✓			
Vodafone		*	✓✓✓	✓✓✓✓
Wipro	*	*	*	*

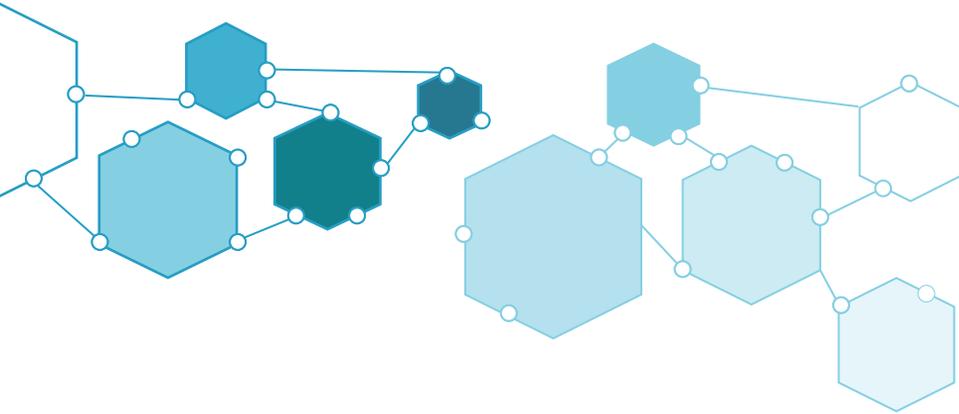
- * = Leaders
- ✓ = Noteworthy Providers (number of check marks indicates the provider receiving full Harvey balls and also indicates the degree of alignment with the client archetype)
- = Other Providers (the service provider did not qualify for a leader or a noteworthy mention for the client archetype)

NOTE: All Service Providers evaluated for this report have the abilities to service all four archetypes, only those with the best fit to the capability requirements were identified as Leaders or Noteworthy Providers

GUIDANCE

This research report has highlighted the multiple archetypes that ISG sees in the software defined networking buyer market. It is clear from our research that as SD networking progresses and becomes more prevalent in enterprises (as well as with service providers), it is becoming increasingly relevant to both the drive to cloud and to hybrid cloud transformation in ICT, as well to the overall digital transformation journey, thus delivering upon the mandate of increasing business agility while decreasing time to deliver new

services and overall technology/usage costs. Organizations that have already advanced on the cloud and outsourced IT/network journey see SD networking as simply another milestone in that journey and as an enabler for further advanced services and solutions. The ones that are still dependent (to some extent) on legacy equipment and networks with larger in-house IT/networking departments and resources, view it as a disruption and revolution. As a result, the archetypes in this study not only categorize the current and near future scenarios for enterprises, they also aid in differentiating between the various types of issues or opportunities they are intending to solve. The archetypes are not meant to be exhaustive, comprehensive examinations of all potential or likely client situations and requirements, but are meant to provide a simple, relevant, and repeatable set of user-side requirements against which a similarly simple, relevant set of provider capabilities can be assessed. In this report, we have detailed different buyer behaviour based on our understanding of current enterprise needs in SD networking. The characteristics of each archetype create a moving target because, while the core requirements rarely change, the relative importance of requirements vary based on business and/or technological changes. Multiple archetypes may be, and often are, present in many larger-scale enterprises, where one business unit's needs and goals may be justifiably different from that of another. As the requirements of each archetype evolve and adapt based on business and technological change, so too does the focus and value of each archetype.



Enterprise Leadership Actions

Enterprise decision-makers face ever-increasing challenges to ensure their technology is delivering the agility and services required by the business, and at the best cost point, for continued growth and success. This is increasingly true in a market that is ever more competitive and rapidly adopting new methods, solutions, technology sets and organizational paradigms within the networking ecosystem for and overall enterprise digitalization. Increasingly, business leaders are working closely with ICT and technology departments to find the right mix of advanced and competitively positioned solutions, for specific business requirements, while also saving on capital expenses and operational expenses (including personnel costs), wherever possible. They are doing so by means of piloting proposed solutions, often at provider test labs, or as a parallel pilot solution in the enterprise, then examining renting what they need through managed services/aaS offerings or alternative pricing models that can be hosted either on-premises or in the cloud. Critically, ICT executives must ensure that each solution set meets the business and therefore customer needs and preferences, while being fully supported by stable technology, processes, and methods. This is true irrespective of the archetype or combination of archetypes. However, the pace of change and technology advancement does not remove the requirement to answer some basic questions, as presented below.

Is there sponsorship and agreement from C-suite and stakeholders on the new roadmap?

Effective and successful transformation of the network and all services related to it does not happen as a purely ICT department program, but involves many different aspects of an enterprise. Sponsorship from executives across the entire enterprise helps to ensure that the solutions under consideration meet their requirements and deliver associated benefits (which can be mapped and linked to SLAs/KPIs). A roadmap must be constructed with pilot trials and demonstrations measured against benefits, with a commercial level roll out planned in phases, by anticipating unplanned changes required by customers or business conditions, as those change during implementation. This roadmap must be regularly reviewed at stakeholder and C-suite level, as a living document in a form that all levels of the business can understand.

Supplier/partner models: Can suppliers be chosen to fulfil parts or the entire roadmap?

- Based on the roadmap, can suppliers be found that offer differing pricing and delivery models, are flexible and able to work with the enterprise as trusted longer-term partners, (aaS, DIT or managed service), or are only vendors of “solution as projects” (systems integrator/vendor) available?
- Will purchased solutions, (systems integrator/vendor), rented solutions (aaS), self-management on the enterprise’s own infrastructure in-house, (DIY), management by a supplier, (managed service), or a mix of these options (for example, co-managed services), be the preferred model(s) chosen to fulfil the roadmap?
- Is there an actual or implied vendor lock-in with a solution, or is vendor neutrality assured by either open interfacing according to global standards, or multiple vendor supply availability in every area of the offered solution(s)?
- Has enough evaluation time been allocated? No off the shelf or one size fits all solution will fit all enterprises. It is vital that enough time is taken to fully undertake evaluations and competitive supplier selection processes during the roadmap’s execution. Avoid big bang or rip-and-replace solutions unless certain that this is required.

Does the solution being considered meet the business needs AND allow for easy implementation of changes?

Most enterprise success stories and use cases of effective transformation involve companies that had a definitive road map with implementations according to that plan. Most involve a journey of change, DIY and then often aaaS or managed service adoption to fulfil fully all requirements. In almost all cases, inflection points were planned during the journey where new requirements or technology changes could be incorporated, without slowing the overall delivery. Open interfaces and multiple vendor suppliers to each strategic sub area of the solution become vital, even if the overall solution is to be delivered as a managed service. It is particularly important for enterprises to insist on being involved in test lab evaluation tests of new or promised functionality, so they can check the deliverables and outcomes to their specific expectations, before these new elements go live in their commercial deployment.

Provider Leadership Actions

Regardless of whether a provider is looking to supply a solution or product set directly to an enterprise to manage, (DIY or systems integrator) or if a provider is assisting an enterprise toward a NaaS or managed network option, some points remain the same. A clear portfolio offering and consultative approach to the enterprise is key to understanding its needs and mapping them to the ability to deliver upon those needs, either from organic resources and capabilities or from a partner ecosystem. The most successful case studies of network transformation or NaaS includes this approach. Successful case studies also have undertones of industry knowledge, with the provider demonstrating a clear understanding of the enterprise's industry, together with capability statements of how the offered portfolio fulfills the enterprise requirements within that industry. Key issues to be addressed and assessment to be made in order to raise rate of a successful engagement include:

Active participation when possible in enterprise roadmap creation or modification and serve wherever possible as trusted partners and change agents.

Being perceived as a partner of the enterprise, actively seeking the best solution for the enterprise needs, rather than a simple vendor only interested in selling whatever product they currently have, is vital. Updating or modifying the enterprise roadmap together with the enterprise as a trusted partner is critical for long-term success.

Ensure offerings are flexible, vendor agnostic and deliver upon enterprise requirements.

Enterprises are frequently requesting vendor agnostic and open solutions, especially in regard to networks and network services, often based on their experiences with vendor or carrier lock-ins for long periods when solutions they were forced to use were no longer fit for the intended purpose. Recognizing this and respecting it, while reassuring the enterprise and demonstrating that this is not the case with the proposed solution, is fast becoming an important requirement. Offering as-a-service or value based/alternate pricing solution supply, without long term lock-in for the enterprise is now seen as a key aspect of solution delivery and in enterprise reassurance during solution selection.

Plan for change, innovation or evolution.

Any implementation should have checkpoints and update phases built into the project plan to allow for technology and service changes as they become available and stable and to ensure that an enterprise client receives the latest SD networking features and functionality available in the market, wherever possible. Proactive intervention to advise the client should be a part of regular delivery in the overall implementation process.

Offer customized solutions and industry variants.

Providers able to offer both industry knowledge and customized solutions specific to individual enterprise requirements have a clear advantage. The days of a one-size-fits-all approach for networks or areas such as SD-WAN are fast disappearing. Each archetype may need a separate delivery model, which may be significantly different depending upon industry and the enterprise size/type within that industry.

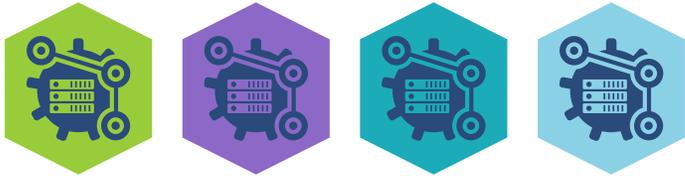
Remember, each archetype may value solutions differently.

Success or value of solution in each archetype is defined differently, and the archetype-specific definition will impact both key performance indicators and how value is perceived (and priced), and may impact positioning as a trusted partner supplier for long-term engagement with the enterprise. Understanding what an enterprise is looking to achieve and how it maps to the archetypes defined here, will help ensure success in overall delivery and enhance the perceived value of the delivery.

Consult and advise the customer openly.

Each archetype addresses a different challenge and different set of perceptions, and an opportunity might involve a mix of archetypes. A provider needs to define the delivery to the customer not just as a solution they can offer directly, but advise on possibilities they should consider, thereby acting as a trusted partner, even if it involves solutions delivery from other providers. A provider must be prepared to act as a systems integrator in this regard, if necessary, to improve the client solution, and possibly gain overall management or integration of additional value, as well as overall relationship long term assurance.

Appendix



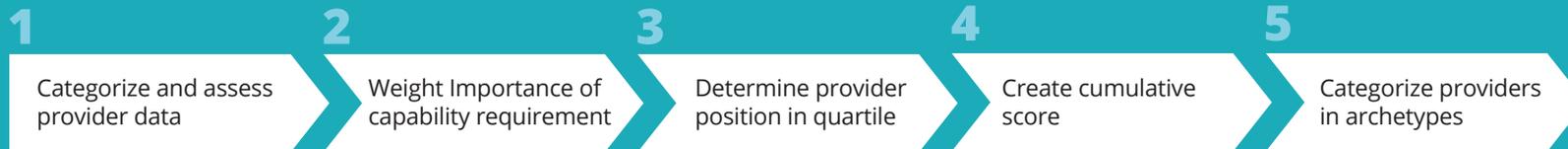
APPENDIX

Methodology

As previously noted, this report uses five archetypal sets of buy-side client requirements to assess the relative suitability of digital business transformation services providers. Data regarding the providers' capabilities and positioning was provided to ISG via briefings, ISG advisor interviews and surveys of service providers, including client references if appropriate and from secondary public and subscription sources.

Digital business transformation services providers (SPs) shared their data across different digital business transformation service dimensions through the research initiatives noted above. These dimensions cover their technological competency, preferred engagement models, scope of work performed, service capability, functional expertise and industry and regional presence.

Report Methodology



Methodology Details

- 1** The data provided by the services providers were categorized and assessed according to the digital business transformation services requirements described for each of the client archetypes. In cases in which provider descriptions and data were not worded as precisely as our archetype requirements, our digital business transformation services analysts relied on their expertise and experience to classify provider capabilities.
- 2** Each archetype capability requirement was weighted based on its relative importance to that archetype's typical requirements. Weightings for each archetype's requirements add up to a total of 100 percent. Specific weightings are not disclosed in this report. The relative importance of each capability requirement is depicted in illustrations at the beginning of each archetype section using differently sized "hexagon" icons.
- 3** Once the relative ability of each services provider was assessed for each of the archetype requirements, each provider was then positioned in a relevant quartile (for example, top 25 percent, second 25 percent and so on). The top quartile was awarded a numerical "capability score" of 4/4; the second quartile earned a score of 3/4, the third quartile earned a score of 2/4, and the fourth quartile earned a score of 1/4. Those with no capabilities to meet the archetype requirements were not included in the assessment.
- 4** Provider capability scores from Step 3 were then multiplied by the weightings developed for each client archetype requirement in Step 2. The results for each provider were then totaled to develop a cumulative score for each service provider. These cumulative scores are not disclosed in this report.
- 5** The cumulative scores were then used to identify the services providers most well suited for each archetype's requirements. These providers are listed alphabetically and briefly profiled in each archetype section. Where relevant, additional services providers with noteworthy capabilities are also mentioned (for example, providers that may have scored well on a specific requirement but not across all the requirements for that archetype).

Please note: This report simply presents services providers' known capabilities in the context of user enterprises' typical project needs. This report is not meant to rank providers or to assert that there is one top provider with abilities that meet the requirements of all clients that identify themselves with a particular archetype.

Fig 13 Provider Capability Scores as Harvey Balls

Score	Harvey Ball representation
Score 4 out of 4	
Score 3 out of 4	
Score 2 out of 4	
Score 1 out of 4	

The cumulative score for each of the selected services providers against each archetype requirement is represented using Harvey Balls. For example: if a provider is assessed with a score of 4 out of 4, then a full Harvey Ball is used to represent their capability against that requirement. Similarly, if a provider is assessed a score of 1 out of 4, then a one-quarter Harvey Ball is used, as shown in below.

Additional Relevant Networks - Software Defined Solution and Service Providers

The capabilities of 70 providers were assessed in this report. Some services providers that are typically included in our work are not included in this report. Some of the companies that were not included were not able to participate and others declined. Providers that do not offer a full portfolio of digital business transformation services have not been included in the study. They may be included in future versions of this report, based on merit and on the services providers' willingness to provide current and relevant materials. Readers should not make any inferences about a services provider's absence from this report.

Other Relevant Service Providers	Headquarters Country
Alcatel-Lucent	France
Arvato Systems	Germany
Atos	France
CANCOM	Germany
Citrix	USA
Cloudgenix	USA
Colt	UK
Dell Technologies	USA
Ensign Communications	UK
Etisalat	Abu Dhabi
FatPipe	India

Fortinet	USA
Fujitsu	Japan
Global Cloud Xchange	Hong Kong
HPE	USA
Huawei	China
KPN	Holland
NetApp	USA
O2	Spain/UK
Optus	Australia
PCCW	China (Hong Kong)
Riedel Networks	Germany
Riverbed	USA
SK Telecom	S. Korea
Symantec	USA
Telekom Austria	Austria
Telenor	Norway
Telus	Canada
Turkcell	Turkey
UST global	USA
Versa Networks	USA

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ISG Provider Lens™ Archetype Report: Networks - Software Defined Solutions and Service Partners

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