



I D C A N A L Y S T C O N N E C T I O N



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Benefits of a Fully Featured SD-WAN

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Within the realm of digital transformation (DX), IDC has observed the rapid ascent of the software-defined WAN (SD-WAN) in the context of how the network must transform to support evolving application needs. As organizations move toward hybrid IT models that include the connection of myriad public cloud- and private cloud-based applications (including SaaS) to a growing array of network endpoints, there is a pressing need to ensure efficient, secure, and cost-effective connectivity of mission-critical applications at remote locations, including branch offices. IDC believes that SD-WAN can solve many challenges with regard to WAN connectivity in today's emerging DX environment, allowing remote offices to reap the benefits of DX in a cost-effective, secure, and manageable way.

The following questions were posed by Cisco to Rohit Mehra, vice president of IDC's Network Infrastructure group, and Nolan Greene, senior research analyst in IDC's Network Infrastructure group, on behalf of Cisco's customers.

- Q. How has the role of the branch network changed in recent years, and what does this mean for the WAN?**
- A. As networked devices and applications have become mission critical across all verticals, there has been a major rise in the networking capabilities needed at the branch level. The branch typically has had minimal on-premise IT infrastructure and ability compared with corporate headquarters and major offices. Instead, the branch relies on MPLS links to connect to headquarters and/or datacenters in order to access business applications. However, in the DX era, cloud-hosted, SaaS-based business applications have revolutionized many business functions; consequently, we are seeing fast adoption of these applications. This, alongside the proliferation of remote workers, has led to a complex web of connections and applications to and from the branch, many of which need direct internet access rather than routing to other corporate locations. In many cases, legacy WAN architectures have not been able to provide adequate support for the changing needs of the enterprise branch, prompting many in enterprise IT to seek WAN architectures that address DX requirements.

Q. What specific needs and pain points does SD-WAN address?

A. SD-WAN primarily addresses the optimization of branch access to mission-critical business applications, including unified communications and collaboration (UC&C) and SaaS applications, doing so in a dynamic and automated manner. DX strategies rely upon a complex roster of next-generation business applications and tools, but many organizations find that their legacy WAN connections create bottlenecks that degrade application performance and reduce business agility. Additionally, through security and access policies that "follow the user," SD-WAN addresses concerns about the security of data traveling through the WAN over the public internet and into remote locations, including branch offices, warehouses, and auxiliary offices. Aside from security and reliability, legacy WAN architectures sometimes mean costly connectivity that is also not ideally efficient because of a lack of prioritization rules. All applications and internet access would be prioritized equally, meaning non-work-related internet usage (including personal social media use) could be compromising the bandwidth allocated to web-based ERP/CRM. SD-WAN has the ability to optimally leverage multiple methods of connecting remote sites to public, private, or hybrid cloud, including transport options such as internet, DSL/cable, MPLS, and 4G/LTE. At the same time, SD-WAN can best match individual users, applications, and connectivity types while providing security and access policy enforcement.

Q. What should enterprise IT consider when choosing an SD-WAN solution?

A. Besides evaluating an SD-WAN solution for the capabilities discussed previously, IT departments should consider several other factors. First, examine the branch's virtualization needs. What are the requirements of the applications running over the SD-WAN? It is important to implement sufficient virtualization capacity while avoiding wasteful overprovisioning of virtual machines. Given how dynamic application requirements are in the DX era, deploying a virtualization infrastructure with elastic provisioning is recommended. On the technology side, consider the ability to simplify VPN capabilities and automate the deployment and management of a branch network as branch locations often do not have as many IT staffing resources as a larger office. Some SD-WAN solutions offer robust analytics capabilities, and that is something to look for, to eliminate any blind spots in the network over which corporate data traverses. Network analytics can provide data on critical metrics such as application performance, path status, latency, jitter, and packet loss, among others. This can provide enterprise IT the ability to detect anomalies and take corrective action. In some cases, analytics may enable self-healing capabilities.

Additionally, enterprise IT should seek the ability to balance performance, latency, policy, and security needs for public and private cloud applications in today's hybrid IT environment. Therefore, it is important to consider a solution's WAN optimization and intelligent connectivity capabilities as well as a solution's ability to provide application visibility. It is also important to consider the range of security tools a solution offers. Next-generation firewalls and end-to-end encryption of all data pipes are prominent features to evaluate given the sensitive nature of the data that travels over the WAN, especially from public cloud-hosted applications over the Internet.

Aside from technology, evaluate potential SD-WAN vendors and service providers in terms of their specific toolsets with regard to verticals, organization size, and the level of support services provided to end customers, either directly or via service providers and/or systems integrators. Working through a service provider of choice or with a vendor or its value-added reseller is always a key decision point for enterprise IT.

Q. What are the potential problems with choosing a solution based solely on low price?

A. As with any technology, there are often feature and/or service trade-offs when choosing a lower-priced (or higher-priced) solution. Pricing is obviously an important consideration with regard to SD-WAN, but it is better to think of this aspect in terms of total cost of ownership (TCO) and return on investment (ROI) as opposed to comparing sticker or entry-level prices. Integration with existing infrastructure and applications is a key aspect to deploying SD-WAN, coupled with the transport options it supports for dynamic path optimization. Another aspect to consider is the broader ecosystem the solution supports in terms of IT infrastructure (hardware/software) and related applications, including service chaining and life-cycle management of the individual components. Look for examples where the solution has been successfully deployed. Solution scalability is another aspect to look into because the WAN needs of the distributed enterprise continue to evolve, and new requirements come up frequently. With DX continually shifting network requirements through the addition of new applications and devices, enterprise IT needs to be able to respond quickly without service interruption. A fully featured, dynamic SD-WAN solution can provide the scalability and the flexibility that are imperative for DX.

Q. Is there flexibility in SD-WAN deployment models available today?

A. With cloud, mobility, and Internet of Things (IoT) continuing to drive a majority of the application and WAN needs for the foreseeable future, enterprise IT must evaluate the flexibility of any WAN-related solution, including SD-WAN. There is a burgeoning ecosystem of SD-WAN solutions geared toward different customer priorities and use cases, including those that leverage existing investments in Layer 3 (WAN) and areas such as WAN optimization. These solutions run the gamut of purpose-built on-premises hardware, software that runs on virtual machines on industry-standard hardware, and cloud-based platforms. Similar to what we are seeing with other networking technologies, SD-WAN can be consumed as a cloud-managed service through a managed service provider. As with other networking technologies, enterprise IT should undertake a careful evaluation of current and future needs to help in the selection of an optimal solution that provides dynamic, scalable performance in a cost-effective and secure set of capabilities.

ABOUT THE ANALYSTS

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