Questions posed by: Cybera
Answers by: Brandon Butler, Senior Research Analyst, Enterprise Networks

Q What are the challenges of managing distributed WAN environments that have led to a rise in popularity of SD-WANs?

A Today’s enterprise WANs are undergoing the most significant advancements that the market has seen in more than a decade. The driving force behind these changes is that demands on the WAN have increased significantly in recent years. The rise in organizations leveraging cloud-based applications — both infrastructure as a service and software as a service — has created a desire among many organizations to provide more direct connections to these cloud-based platforms. Organizations are also looking to simplify and optimize the management of multiple WAN connections to their branch and remote offices.

Furthermore, there are more users and devices than ever on the WAN. It’s not uncommon for employees in branch offices to each have multiple connected devices, while numerous pieces of networked equipment — WiFi controllers, phones, point-of-sale machines — rely on WAN connectivity. Traditional WANs have struggled to keep pace because fundamentally they were not designed for these cloud and mobile-centric environments.

WAN architectures used to be simple: An organization would connect its branch offices back to a corporate datacenter where all the company’s apps were hosted. Today’s world is very different though. Essential business applications are increasingly spread across multiple locations, including the corporate datacenter and multiple public clouds.

In recent years, the SD-WAN market has emerged. SD-WAN technology uses a controller to manage hybrid WANs and provide intelligent WAN path selection. This creates numerous benefits, including the ability to manage multiple connection methods, have centralized application-based policy controls, implement application and network performance monitoring, and conduct dynamic path selection based on application requirements.

The advent of SD-WAN has created a groundswell of interest in the technology, especially among organizations that have a large distributed footprint of branch offices. A 2018 IDC survey of enterprise WAN decision makers found that one-third had already deployed SD-WAN, with another 42% planning to deploy the technology in the next 12 months.
Q How should organizations think about deploying an SD-WAN? What are the pros and cons of a managed SD-WAN versus a do-it-yourself (DIY) SD-WAN?

A One challenge with traditional WAN management platforms has been day-one deployment and management. Setting up a new branch or remote office site could be a cumbersome process, requiring technical onsite staff to deploy a purpose-built router, download and install software capabilities, configure WAN links, and set policies. Ongoing day-two management sometimes requires staff to be onsite, or remotely log in to each site, to install upgrades, implement feature enhancements, and make policy changes.

SD-WAN has ushered in a new management stack that includes nearly zero-touch provisioning of network connectivity to a new branch site or an existing branch site. A preloaded appliance can be shipped to a site, plugged in, and preprogrammed to automatically connect to a cloud-based management platform to receive security and policy settings.

Organizations still have choices though: This process can be managed by a service provider or done in a DIY manner in which WAN links and software settings are configured and maintained by the customer. Organizations that have the resources and IT staff to maintain the deployment and control of an SD-WAN environment may opt for a DIY model. Organizations that have many distributed sites that need to be spun up quickly and managed centrally may opt for a managed service approach.

Q What cost savings should enterprises expect from deploying SD-WANs?

A One benefit of SD-WANs is the potential to more efficiently manage a distributed WAN environment and get better performance for the same cost as or a lower cost than that of existing WAN services. Potential cost savings is one of the biggest driving factors that have led the SD-WAN market to be one of the fast-growing segments of the IT market.

SD-WAN savings can be broken down into two major categories: hard savings and soft savings. Hard savings are actual reductions in cost, whereas soft savings are efficiencies gained by using the technology. The most prominent hard savings related to SD-WANs come from new connectivity contracts, including the potential reduction in use of MPLS and/or incorporating new, less expensive connectivity options, such as broadband or cellular for primary or backup connections.
SD-WANs enable a variety of soft savings, too, such as ensuring quality of service connections to cloud platforms or other hosted applications, centrally managing and ensuring comprehensive security across the WAN, and ensuring high-availability connections to WAN sites as well as ease of management related to cloud-managed SD-WANs.

IDC’s recent Software-Defined WAN (SD-WAN) Survey found that nearly a quarter of respondents anticipate SD-WAN cost savings of 20–39%. Almost all respondents expected to receive at least some cost savings from deploying SD-WANs.

Q What sort of network visibility and monitoring tools will be needed when using an SD-WAN?

A While the management and automation capabilities of SD-WANs represent a significant improvement over previous-generation, hybrid WAN management platforms, IT administrators may want additional control in some areas, such as visibility and monitoring. An SD-WAN solution is only as good as the performance it’s providing for end users, so management tools with integrated monitoring help ensure high levels of service for WAN users and applications.

Visibility and monitoring tools can have other benefits, such as the following:

» Ensuring that application- and user-based policy controls are being implemented correctly
» Monitoring for security vulnerabilities and automatically stopping them
» Validating that service-level agreements (SLAs) on network traffic are being met
» Optimizing performance for traffic that is experiencing latency
» Keeping a historical record of network performance

Managed SD-WAN services provide some inherent benefits when it comes to visibility and monitoring. Because these systems act as a centralized point where all WAN traffic is managed, they can provide both a high-level holistic view of the WAN environment and a granular historical context of traffic patterns on the WAN, user performance metrics, and security incidents that have been flagged. A robust monitoring platform integrated directly into the SD-WAN platform can help organizations ensure they’re getting the most out of their SD-WAN deployments.

Q How will SD-WAN technology evolve into the future?

A As more organizations adopt SD-WANs, enterprises and vendors are looking toward the future of this technology. One key expected advancement will be deploying virtualized network functions (VNFs) in branch office locations. VNFs are software-based versions of network applications that may have previously been delivered in a purpose-built hardware appliance. The deployment of VNFs at the branch office will lead to the evolution of the software-defined branch (SD-branch) market.
SD-branches running VNFs on generic hardware could yield numerous benefits. VNFs reduce overhead management of hardware equipment, are more easily scalable, and can be centrally controlled. Examples of VNFs include virtualized routers for enabling SD-WAN and security functions such as next-generation firewalls or unified threat management platforms. Both session border controllers (SBCs) that ensure voice and video traffic optimizations and wireless local area networking (WLAN) controllers can be implemented as VNFs.

While SD-branches will be important in the future, the technology is still in the early days of development. In the meantime, organizations of all sizes are realizing significant benefits from using SD-WAN capabilities today.
Traditional WANs Weren’t Built for Modern Business Requirements
Too many organizations find themselves choosing between network cost and performance — primarily because they still rely on legacy WANs that were never designed for a digital business world.

They often spend too much of their IT budget just to maintain those WANs, sacrificing the performance or security upgrades that could modernize their business. The result is a network that lags behind in terms of simplicity, security, scalability, and cost-effectiveness.

In contrast, a secure SD-WAN can save organizations both time and money. Especially in distributed enterprises, a cloud-based SD-WAN can help them:

» Easily connect and manage multiple remote business locations
» Extend datacenter security policies to remote sites
» Slash costs through virtualization and hardware reduction

To learn more about the business value of SD-WAN, visit [www.cybera.com](http://www.cybera.com).

About the analyst:

Brandon Butler, Senior Research Analyst, Enterprise Networks
Brandon Butler is a Senior Research Analyst with IDC’s Network Infrastructure group covering Enterprise Networks. In this role, he is responsible for market and technology trends, forecasts, and competitive analysis in Ethernet switching, routing, wireless LAN, and adjacent emerging segments such as SDN and SD-WAN.