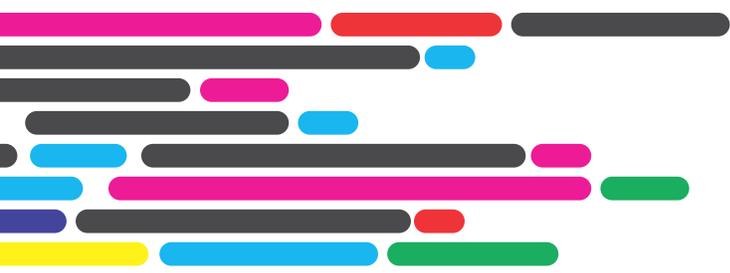


SD-WAN Implementations Are Beating Expectations

SD-WAN is quicker to implement, more flexible,
and less costly than legacy WAN options



ENTERPRISES CONSIDERING ADOPTION OF SOFTWARE-DEFINED WIDE-AREA NETWORKS (SD-WANS) SHOULD LEARN FROM THE EXPERIENCES OF EARLIER IMPLEMENTERS.

A new survey of more than 100 IT decision-makers (ITDMs) who have taken that path reveals that SD-WAN implementations have occurred faster than anticipated and outperformed expectations of key capabilities that are critical for driving digital transformations.

SD-WAN is one of the fastest-growing segments of the network infrastructure market, according to [market research](#), with a compound annual growth rate projected at more than 30% through 2023. The advantages of the technology are fairly widely understood: quicker to implement, more flexible, and less costly than legacy WAN options such as Multiprotocol Label Switching (MPLS). The survey indicates that SD-WAN’s speed of implementation matches, exceeds, or far exceeds that of WAN in almost all cases.

Digital drivers

The survey of the 100 ITDMs, conducted by IDG with Comcast Business, indicates that priorities have shifted away from cost issues, with almost 90% of the survey respondents expressing confidence that the technology will enable their digital transformation initiatives. They indicated that the most important drivers behind their adoption are high availability and automated failover; adoption of new, bandwidth-intensive applications; and cloud deployment plans (Figure 1).

Although simplified network management falls farther down the priority scale, that may be because it’s now viewed as a baseline capability: Almost half of the respondents, 48%, said the technology meets their expectations for simplified network management, and another 48% said that it exceeds or far exceeds their expectations.

“Simplifying network infrastructure is still top of mind for our customers,” says Jody Hagemann, director of product management for ActiveCore, the software-defined networking platform from Comcast Business. “In 2019 the No. 1 request we received from customers was for threshold base alerts to tell them when certain network conditions arise, such as latency issues and packet loss, and for choices in how they can be notified.”

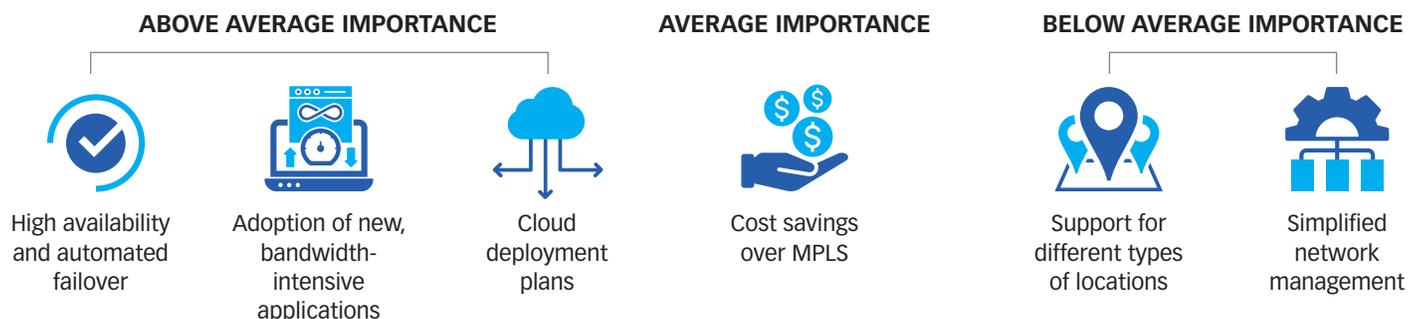
Also, less of a priority among the survey respondents was the possibility of achieving cost savings from MPLS infrastructure. “Achieving cost savings from MPLS has fallen way down the list for SD-WAN motivation,” Hagemann says. “Customers are telling us they are continuing to move applications to the cloud and need a way to interact with cloud-based applications. They cannot afford any downtime, so availability and automated failover always top the list of priorities.”

Outpacing expectations

The [static nature of legacy enterprise network architecture](#) is widely viewed as a drag on the digital transformation needs of enterprises for cloud access and intelligence at the network edge. But many organizations have been loath to tinker with centralized network infrastructure, because it is costly and time-consuming to modernize.

Today’s bandwidth demands are difficult to modify with a traditional router-based WAN at a time when business needs and technology solutions are evolving at a rapid pace. SD-WAN relies on software—instead of routers and other hardware—to direct and manage network traffic.

FIGURE 1: **TOP 3 DRIVERS FOR SD-WAN IMPLEMENTATION**



SD-WAN provides greater resilience and efficiency by routing data over the strongest available connection at any given time.



Rather than trying to tinker with older network hubs, most of those surveyed are using the newer technology to augment (48%) or complement (40%) them with a hybrid SD-WAN approach. Businesses with existing WANs with MPLS can keep those legacy systems and blend them into an SD-WAN hybrid solution, with the ability to assign applications that require real-time information to MPLS and send other applications to the public Internet, saving money while increasing speed. Just 12% of the survey respondents are using SD-WAN to actually replace existing network infrastructure.

These solutions offer greater resilience and efficiency by routing data over the strongest available connection at any given time, so organizations are able to leverage multiple types of commercially available Internet connections, including broadband, fiber optic, and Long-Term Evolution (LTE) wireless. SD-WAN provides greater resilience and efficiency by routing data over the strongest available connection at any given time. In the survey, intelligent WAN selection ranked as equal to security as the most important benefits of SD-WAN.

The technology is also proving to offer a quick implementation process that enables organizations to bypass many legacy

networking issues. Two-thirds of the respondents in the IDG survey said their implementations had been completed within three months or less, and only 14% indicated that they'd needed longer than six months. That kind of track record is broadening expectations of what can be achieved.

"This is moving so quickly we are starting to see customers on their second SD-WAN solution," says Hagemann. "Some perhaps adopted solutions that were limited in their use cases but now are looking for more-comprehensive network-based SDN solutions that give them flexibility and choice."

Quick implementation is accompanied by better-than-expected results, with 50% of the respondents indicating that their expectations were exceeded or far exceeded in delivering key benefits (Figure 2). The ability to customize the SD-WAN with the features they wanted was the clear winner in achieving expectations, according to the survey, followed by centralized orchestration and augmentation of MPLS.

Overall, more than 96% of the respondents indicated that their implementations met or exceeded expectations, and larger companies were significantly more likely to fall into the "far exceeds" category than smaller companies (Figure 3). That may well be because larger companies generally have greater IT resources that are better equipped to stand up a proof of concept across two or three sites and oversee a full-scale rollout.

Some organizations such as retail chains and quick service restaurants can rely on standard configurations across hundreds or even thousands of sites. Others may have different requirements at different sites, which adds more complexity to organization-wide implementation.

FIGURE 2:

HOW WELL OR POORLY DOES SD-WAN MEET YOUR EXPECTATIONS ON EACH OF THE FOLLOWING?

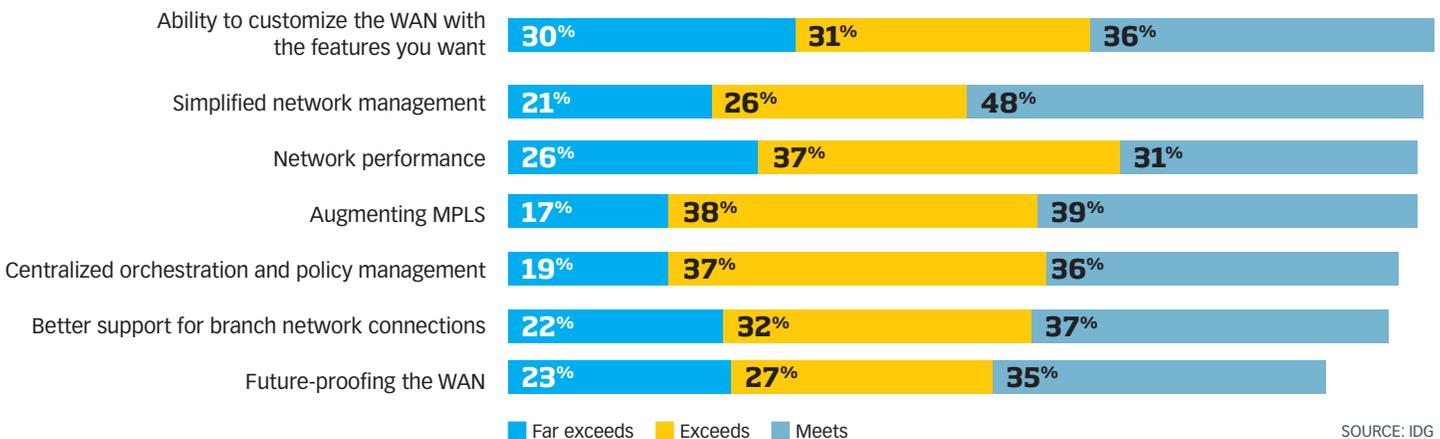
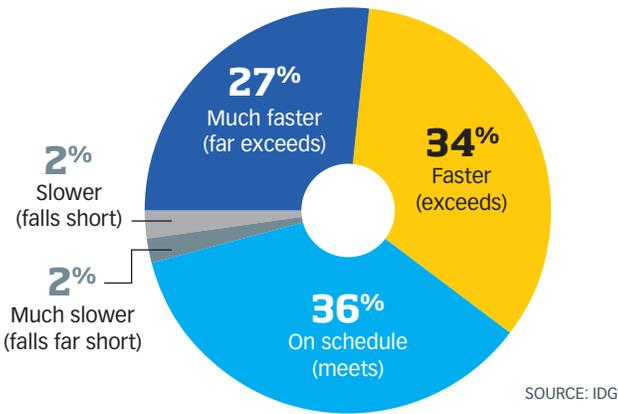


FIGURE 3: HOW TIME TO IMPLEMENT SD-WAN RATES VS. EXPECTATIONS



Hagemann stresses that it is almost inevitable that organizations will identify desired configuration changes from the day the network design is finalized until the actual go-live point. In large part, this results from realizing the need to incorporate various IP addresses and network address translation (NAT) rules that may have been in place for years but that may not be evident to planners as they begin the process.

That may explain why only a few have pursued a do-it-yourself approach, which was typical of early SD-WAN solutions. An

overwhelming majority (90%) indicated that they had taken a managed services approach to implementation. However, when it came to purchasing the solution, a majority of the respondents indicated, they did so from an established vendor, whereas 23% said they had selected a new or emerging vendor; only 10% had chosen to purchase their SD-WAN solution from a managed service provider.

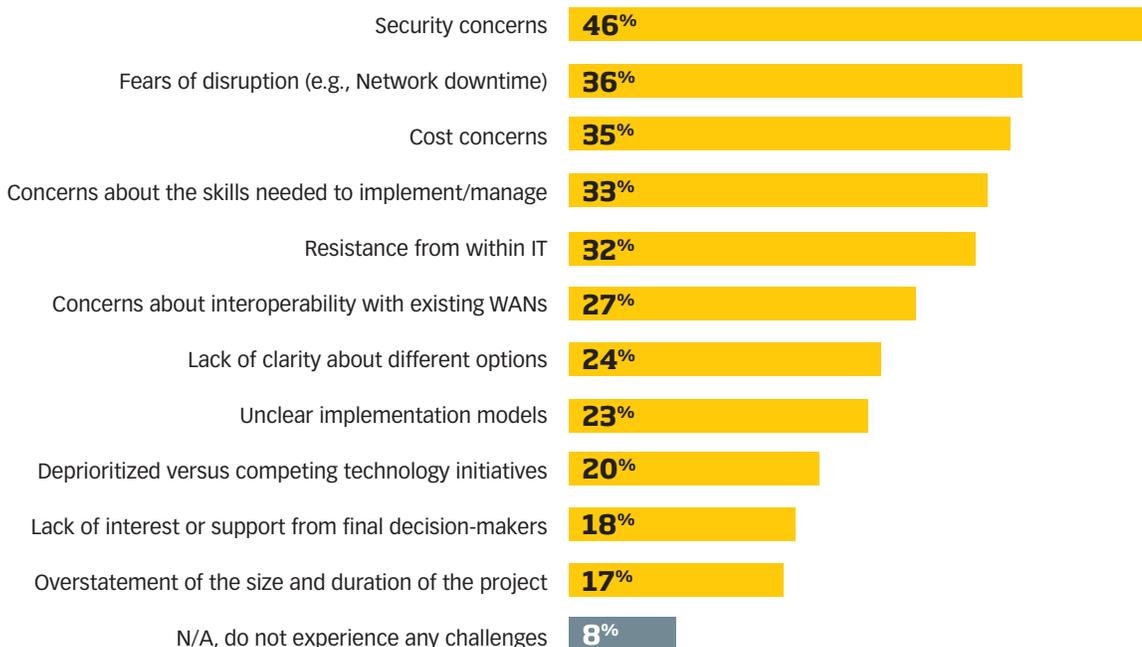
“Choose wisely, don’t rush the process, and be sure to go with an established vendor so as to reduce any unnecessary downtime,” one survey respondent recommended for those who are evaluating SD-WAN as an option.

Overcoming challenges

The SD-WAN implementers in this survey weighed several challenges in the adoption process, with security, of course, being the No. 1 concern overall—but more so for smaller companies. Fears of disruption, such as network downtime, ranked almost even with cost concerns as the second- and third-ranked challenges, respectively.

One respondent offers these words of advice to those beginning the journey: “Invest more effort in planning and possible fault analysis before beginning to implement SD-WAN architecture. It can become cumbersome to try to resolve multiple problems simultaneously if too many modifications are implemented without having been proven to work well.”

FIGURE 4: WHAT CHALLENGES DID YOU FACE IN THE ADOPTION PROCESS FOR SD-WAN, IF ANY?



Resistance within IT and lack of skilled personnel were other issues cited by respondents as challenges they had faced in the adoption of SD-WAN. More and more organizations are signing up for managed services to overcome the lack of appropriate resources to manage complex SD-WAN networks, says Hagemann. "We talk with many customers about the concept of comanagement," she adds. "There are approximately five different change variables, such as DHCP [Dynamic Host Configuration Protocol] IP address settings, that customers want to be able to go into a portal and quickly change. But otherwise they are looking for what is perceived as a fully managed service, because they want their digital experience to enable them to work smarter, not harder."

The fact that most implementations have exceeded expectations indicates that the actual pitfalls have been fewer than anticipated. In fact, even security concerns were cited by fewer than half of the respondents as a challenge they faced, and all other challenges were ranked lower (Figure 4); among smaller companies, a slightly higher 51% cited security concerns. SD-WAN, in fact, offers many security advantages, such as network segmentation and advanced features to protect against malware and other threats. An integrated virtual private network and stateful firewall can make security easier to manage than maintaining separate security appliances.

The right solution can provide more control, enabling organizations to prioritize which processes and applications move data first and to distinguish between legitimate and malicious traffic through context awareness. Organizations can, for example, ensure that social media use does not derail the quality of videoconferences or voice-over-Internet-protocol phone calls. Administrators can make changes to such rules quickly with point-and-click software.

In choosing SD-WAN solutions and managed services, organizations need to ensure that they understand exactly what options they are purchasing and who is responsible for managing what. "Study, read, review," one survey respondent advises. "Know your current design and implementations."

[**Learn more about SD-WAN solutions from Comcast Business.**](#)



It's also important to ensure that the SD-WAN solution is flexible enough to adapt to future needs. "Select the highest-quality SD-WAN to future-proof your business from outside interruptions and digital architectural changes," another survey respondent urges.

Dramatic results

SD-WAN is proving to be a key element in digital transformation strategies aimed at making business more responsive to customer demands and employee needs. The business disruptions many organizations are facing with the coronavirus pandemic demonstrate the need to quickly adapt to dramatically altered network requirements, as many employees have been unable to get to their office and need access to network and cloud assets from home.

With SD-WAN, companies may be able to make changes for remote sites from any location, rather than manually reprovisioning routers onsite, as well as monitor network performance digitally.

SD-WAN implementation has come a long way in a relatively short period of time. SD-WAN's control layer enables enterprises to more easily connect branch offices and remote sites, centralize management, decrease provisioning times, and better manage traffic. With its ability to unify service delivery enterprise-wide, paired with the option to add broadband to existing MPLS links, SD-WAN helps control network infrastructure costs while meeting performance requirements. The IDG survey reveals that companies that have adopted the technology are generally using it to augment or complement existing technology and have done so more quickly than anticipated and with better results than expected.

