COMCAST BUSINESS | MASERGY

WHAT YOU'LL LEARN

- New factors driving WAN evolution
- Three ways SD-WAN achieves top business goals
- Six SD-WAN evaluation criteria

WHITE PAPER

Enabling cloud migration and solving traditional network problems

New innovations are driving a golden era for wide area network (WAN) advancement. What's triggering this transformation? The change is driven by the introduction of Software Defined WAN (SD-WAN) solutions. The goal of this white paper is to explore why SD-WAN is perceived as the latest creation enabling enterprises to solve both traditional WAN problems and address new cloud-migration challenges. Through deep analysis, this paper describes the key attributes of an SD-WAN solution capable of delivering on all of those expectations.

Jim Metzler: About the Author

As the Founder and Vice President of Ashton, Metzler & Associates, Jim Metler has a broad IT background and serves as a leading networking consultant. His experience includes serving as an engineering manager for high-speed data services, a product manager for network hardware, and a network manager at two Fortune 500 companies.

State of the WAN: multi-cloud environments are new influencers

New developments are influencing the WAN today. A recent survey asked IT professionals to indicate the factors that would have the most impact on their WAN over the following year, and an analyst summary, titled The WAN Report, explains the answers. The results are shown in Figure 1.

Figure 1. Top five factors impacting WAN

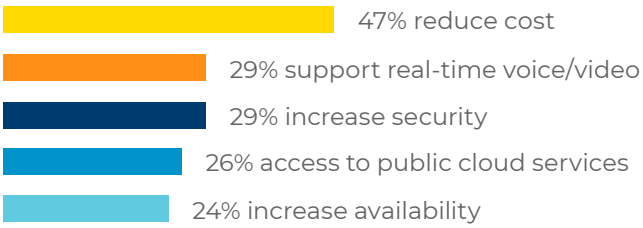


Figure 1 highlights the fact that some of the factors driving WAN evolution have remained constant over time while some new factors have surfaced. For example, reducing cost and increasing security have been perpetual drivers of WAN evolution. However, until relatively recently, providing WAN access to public cloud computing services was not a concern. Today, it is one of the top influencers driving WAN evolution.

The great interest in access to cloud services shouldn't be a surprise given that 94% of companies currently make use of cloud services, and on average, companies use almost five different cloud environments. Today, CIOs manage multi-cloud environments and need a WAN that adequately supports them.

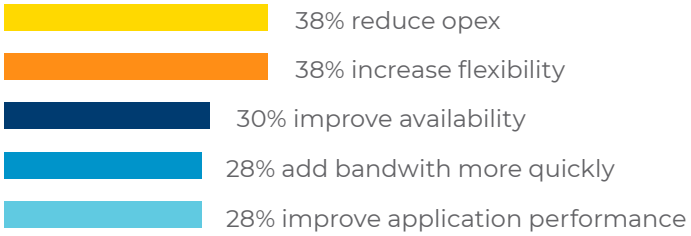
Drivers of SD-WAN adoption: benefits directly address challenges

The phrase "software-defined WAN" refers to the application of software-defined networking (SDN) concepts to the WAN. As a result of applying those concepts, an SD-WAN centralizes the network control function into a controller. SD-WANs also detach the traffic management and functions from the networking hardware, making administrative features modular, programmable, and ultimately open to automation.

The WAN Report discussed the fact that enterprises and their IT organizations have a strong interest in SD-WAN adoption. It also identified the top five advantages they expect SD-WANs to provide (see Figure 2).

Figure 2 demonstrates that the perceived SD-WAN advantages directly correspond to the top factors

Figure 2. Top five advantages driving SD-WAN Adoption



impacting the WAN (as shown in Figure 1). This explains why so many enterprises have a strong interest in SD-WAN—they believe it will provide the WAN functionality they are looking for. Moreover, they view it as the opportunity to solve most of their problems—both old and new! The question is: Can SD-WAN really deliver on all of that?

5+

Most companies have at least five (5) different cloud environments.

Three ways SD-WAN achieves top business goals

Here are three ways enterprises are using SD-WAN and its key features to achieve the goals shown in Figure 1.

1. **Hybrid WAN architecture for cost savings and real-time application support**
   One of the ways that a sophisticated SD-WAN solution helps enterprises achieve the goals identified in Figure 2 is by featuring a hybrid WAN architecture. To be effective, that architecture must allow a combination of both public and private connections to help reduce costs and it must also enable dynamic traffic engineering across multiple WAN paths. The choice of paths must be determined by a combination of application policy, security policy, and the ability to detect and respond to degraded network and/or application performance.

2. **End-to-end visibility for improved improved security and network performance**
   Another way that a sophisticated SD-WAN solution helps enterprises achieve the goals identified in Figure 2 is by providing full end-to-end visibility. Visibility is necessary because it supports application performance and network optimization. It helps IT organizations identify and remedy issues causing degraded application performance. It can even help prevent a network outage. Another reason visibility is necessary is to increase security by making it easier to identify and remedy intrusions and vulnerabilities.

3. **Cross-functional capabilities for cloud-enablement and branch office security**
   The early generations of SD-WAN solutions focused on providing basic WAN connectivity. Over time, solutions have become more cross-functional. For example, with the rise in cloud migration, some solutions now provide secure, reliable access to cloud computing services. In addition, some solutions currently provide a broad range of branch office IT functionality. This typically includes LAN functionality, next-generation firewalls, unified threat management (UTM), and sophisticated security monitoring based on behavioral analysis. Given the breadth of functionality provided, these solutions are more aptly referred to as Software-Defined Branch (SD-Branch) Office solutions. SD-Branch solutions further help enterprises achieve the goals identified in Figure 2.

SD-WAN security benefits are not well known

As noted, it is difficult to remember a time when CIOs were not under pressure to increase WAN security. That long-standing pressure, however, has expanded into an increasingly important and complex initiative as cyberattacks are growing in both intensity and sophistication. As stated in an IBM report, "Many organizations across all industries faced unmanageable levels of cyberthreats brought on by the changing threat landscape, the risk of exposure, and an ever-growing attack surface."

Figure 1 indicates that improving security posture is one of the major factors impacting the WAN. Figure 2, however, indicates that few IT organizations believe that SD-WAN solutions provide any enhanced security. Given the limited functionality that was provided by the first generations of SD-WAN, that belief is understandable. However, as described above, some more recent SD-WAN solutions provide a range of key security functionality, and in some instances, WAN security is even further enhanced by using a fully managed SD-WAN service (as discussed in the next section).

Perceptions shift and preferences lean toward managed SD-WAN services

There are multiple reasons why IT organizations use managed SD-WAN services. One reason is that it reduces the amount of time it takes to implement new functionality. Another reason has to do with the in-house IT skills that are required to adopt and effectively manage a do-it-yourself (DIY) solution. In some instances, IT organizations don't have the requisite skills, and in other cases, they have the requisite skills but prefer to use those skills on higher value activities.

The conventional wisdom has been that managed services are appropriate primarily for small- and medium-sized companies, but that perception is dramatically changing. The near universal use of public cloud services indicates that companies of all sizes and types have come to realize the benefits of using a broad range of services provided by third parties. In fact, a market research report quantified the growing interest in using a range of managed services, including managed network services and managed security services.

Given the importance and complexity of providing effective security, a growing number of organizations are choosing to use a managed security service to meet part or all of their security requirements. Why would they trust an outsider for security? In order for an enterprise to respond to the rapidly evolving threat landscape, it must possess skills that are in the highest demand, and it must have access to sophisticated tools that can accurately analyze huge volumes of data.

Those are highly specialized technologies and skills that can be difficult to recruit, procure, and maintain given the cutthroat cybersecurity skills market and the changing threat landscape. For all of the reasons outlined above, managed services are often the preferred approach--as verified by several recent surveys.

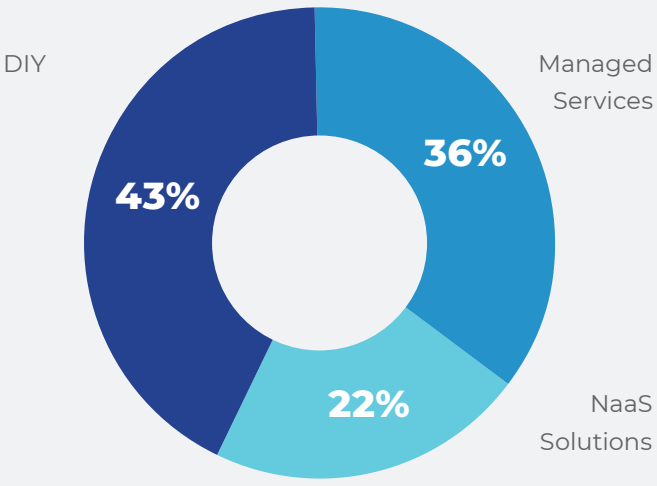
Using SD-WAN to solve problems both old and new

SD-WAN is a hot topic in part because it is the first new WAN solution to be introduced into the marketplace since the turn of the century. It is also hot because it has the potential to both solve age-old WAN problems and address emerging digital transformation challenges including cloud migration. However, to guarantee success and ensure that an SD-WAN solution will empower the IT organization to respond to all of their WAN challenges, CIOs and decision makers should hone their evaluations around the following functionalities.

The WAN Report presented the results of a survey question in which the respondents were asked to indicate their preferred approach to implementing new WAN functionality. They were asked to choose between three types of solutions: a DIY solution; a managed service; or a Network-as-a-Service (NaaS) solution in which a third party provides customers with network services, typically over the Internet, on a pay-per-use or subscription model. Their responses are summarized in Figure 3.

Fiqure 3. Choice of Implementation Options

Figure 3 indicates that while many network organizations prefer a DIY solution, most organizations prefer a solution provided by a third party.



How Masergy delivers: six key evaluation criteria

In order to support a multi-cloud IT environment, SD-WAN solutions must enable agility and cost savings while still delivering on user expectations--all without overburdening internal IT teams. Masergy's Managed SD-WAN is uniquely designed to deliver on all fronts.

1. Enhanced security: Simplify management and security with integrated routing, next-generation firewalls with optional unified threat management, and additional security monitoring services including Managed Detection and Response
2. Hybrid WAN architecture: Enable cost savings with transport-agnostic access options and the ability to mix and match private and public connectivity to meet the unique needs of your applications, locations, and users
3. Visibility: Enjoy on-demand bandwidth and forensic network and application intelligence using a unified portal with real-time analytics and self-service controls
4. Direct access to cloud services: Guarantee service availability with Amazon Web Services and others--Masergy's industry-unique Cloud SLAs cover data transport to cloud service providers
5. Software-defined branch: Extend Masergy's global, software-defined network into your LAN--secure switching and Wi-Fi access points are perfect for hybrid WAN deployments that put private Layer 3 links at large offices and SD-WAN at branch locations
6. Managed service: Get 24/7 live support, seamless implementation with complete installation, monitoring, and management of all equipment, network services, and security services--all billed on a single global invoice

Learn more about Managed SD-WAN from Masergy

Additional resources

- **SD-WAN and network connectivity design: a three-step process to balance price, performance, and risk**

About Masergy

Masergy is the software-defined network and cloud platform for the digital enterprise. Recognized as the pioneer in software-defined networking, Masergy enables unrivaled application performance across the network and the cloud with Managed SD-WAN, UCaaS, CCaaS, and Managed Security solutions. Industry-leading SLAs coupled with an unparalleled customer experience enable global enterprises to achieve business outcomes with certainty.