Build a Foundation for Business Growth and Digital Transformation with Secure Software-Defined WAN

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Executive Summary

As enterprises reinvent their wide area networks to support business growth and digital transformation, secure software-defined wide area network (SD-WAN) will become essential. Drawing upon new Enterprise Management Associates research, this white paper explores why enterprises are transforming their networks today, and how software-defined WAN with integrated security can guarantee success.

Wide Area Networks are a Platform for Business Growth, Digital Transformation

The WAN does more than interconnect the disparate sites of an enterprise. Increasingly, the WAN is a platform for transformation, but that transformation will require a modern network.

Business growth and digital business transformation are the top business initiatives shaping enterprise WAN strategies today.[1] These initiatives demand a network that is agile and high performing, but it must also be secure. Enterprise Management Associates (EMA) research has recently identified SD-WAN technology as a strategic enabler for the network of the future. SD-WAN solutions enable network agility, assure performance, and offer integrated security.

Why Must the WAN Transform?

Traditional WAN architectures cannot support today's modern enterprises. These traditional networks are based on MPLS technologies that are slow to change, bandwidth constrained, and unfriendly to the cloud. Many enterprises are supporting business growth and digital business transformation by expanding their use of the internet and incorporating the cloud into their WAN architecture.

EMA research has found that enterprises are relying more and more on the internet as a primary connection at remote sites. Today, 87 percent of companies say they have expanded their use of the internet for WAN connectivity, versus 74 percent just two years ago. The top three drivers of this shift toward the internet are network flexibility (42 percent), cloud connectivity (42 percent), and bandwidth demand (34 percent).

Enterprises are discovering that internet connectivity is agile enough to address the rapid changes that accompany digital business transformation. While an MPLS connection can take weeks or months to procure, most internet service providers can deliver new connectivity within days.

> **87 PERCENT** OF COMPANIES SAY THEY HAVE **EXPANDED THEIR USE OF THE INTERNET FOR WAN**. THE **TOP THREE DRIVERS** OF THIS SHIFT ARE **NETWORK FLEXIBILITY**, **CLOUD CONNECTIVITY**, AND **BANDWIDTH DEMAND**

Bandwidth is also essential as new applications are deployed to support growth and transformation. These applications will drive bandwidth demand on the network, and MPLS-based networks typically offer the fraction of the bandwidth that broadband internet can provide.

The internet is also the easiest and most affordable way to access the cloud services that enterprises are relying on to support new business models needed with digital transformation. Fifty-six percent of enterprises prefer to connect their branch offices directly to cloud services. This preference means that enterprises can no longer apply security and access policies through a central data center or regional hub. These centralized architectures add too much latency to cloud applications. The average enterprise says 48 percent of all traffic on its WAN is generated by cloud applications, and this rate goes up even higher for organizations that have fully implemented SD-WAN (58 percent). Enterprises cannot afford a latency tax on so much of its WAN traffic. In addition, 84 percent of enterprises say they expect the cloud-driven network traffic to grow over the next three years. Enterprises will require a distributed network architecture to support the cloud.

[1] All data cited in this paper is from EMA's forthcoming "WAN Transformation" research, based upon a survey of 305 enterprise WAN decision makers.

While the internet and the cloud are clearly the future of enterprise WAN, IT organizations have concerns. The number one inhibitor of using the internet for primary WAN connectivity is security risk. Thirty-four percent of all enterprises named security as their biggest internet roadblock. Therefore, any platform that enables internet-based WANs must have integrated security.

Direct cloud connectivity also presents several challenges. Security complexity tops the list (43 percent), since much of the security previously implemented within the data center must now be distributed to each branch. Thirty-nine percent cited network complexity as a top challenge; 32 percent cited network complexity in the public cloud as a secondary challenge.

For most of these enterprisers, a secure SD-WAN platform will solve many of these problems. In fact, the top drivers of SD-WAN adoption, according to those who use the technology or are planning to use it, are cloud enablement (35 percent) and improved network security (35 percent).

Transforming the WAN with Secure SD-WAN

SD-WAN is an overlay technology that aggregates network transport with traffic steering based on network conditions and policies. In fact, a plurality of today's SD-WAN implementations (49 percent) support a hybrid network that mixes internet and private WAN (MPLS) connectivity. Wireless (4G/LTE, etc.) also becomes part of the hybrid network, with 77 percent of organizations that have fully deployed their SD-WAN saying they use wireless as a primary network connectivity option at most of their sites. With SD-WAN, all forms of network connectivity can support business-critical traffic.

SD-WAN does more than aggregate connectivity. It also transforms network engineering and operations. It enables centralized control over and visibility into the network and critical business applications. It automates secure, site-to-site connectivity, supports internet breakout at remote sites, and enables direct remote-site connections into the cloud.

Security Must be Integrated into SD-WAN

EMA research found that the most critical features of an SD-WAN solution are network and application visibility (35 percent of adopters), integrated security (33 percent), and centralized management and control (29 percent). In fact, integrated security is a critical evaluation criterion for SD-WAN. Nearly all SD-WAN solutions offer integrated firewalls at remote sites, but enterprises need more than that. More than 95 percent of enterprises require SD-WAN solutions with integrated next-generation firewalls, intrusion protection, malware protection, and advanced threat protection.

SD-WAN must also be flexible enough to allow role-based access to different security functions. For instance, the network team usually manages SD-WAN, but someone else, such as the IT service management (ITSM) group (49 percent), security operations (26 percent), and security engineering (22 percent), often manage the security functions within these solutions.

THE **MOST CRITICAL FEATURES** OF AN SD-WAN SOLUTION ARE **NETWORK AND APPLICATION VISIBILITY**, **INTEGRATED SECURITY**, AND **CENTRALIZED MANAGEMENT AND CONTROL**.

Enterprises say their top challenge with SD-WAN is integration with their existing security architecture (33 percent). The shift toward a distributed security model with SD-WAN will present a significant challenge. Integrated security capabilities will help, but many enterprises may need to turn to a trusted security partner, such as a managed security services provider, to address this issue.

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Managed SD-WAN Addresses Operational Challenges

Managed SD-WAN can do more than address security challenges. For instance, the shortage of skilled personnel is the second biggest SD-WAN challenge to enterprises (28 percent). A managed solution can provide the 24x7 operational support that these organizations will need. Eighty percent of enterprises adopt a hybrid operational model with their SD-WAN technology, where a service provider and internal networking staff share management responsibility. Some of them (43 percent) prefer a hybrid operational model where internal staff handles complex tasks, but 37 percent prefer a model where the managed service provider handles complex issues and internal staff handles simple tasks.

The other top challenges enterprises face with SD-WAN are product maturity (28 percent) and interoperability with legacy networks (27 percent). Product maturity problems can also include buggy code, a lack of sufficient functionality, or a poor management interface. Enterprises should talk to a vendor's reference customers before committing to a solution. Those who are working with a managed service provider should ask that provider about the SD-WAN vendors they partner with.

Interoperability with legacy network technology will be more important if an enterprise's shift to SD-WAN is gradual. These enterprises will have SD-WAN sites and legacy network sites coexisting for some time, and these sites will need to communicate with each other. Thus, the SD-WAN solution must support traditional routing protocols.

Enterprises that account for all these challenges will be poised to succeed with a secure SD-WAN solution. SD-WAN success will equal WAN success. EMA research has found that 64 percent of organizations that have completed an SD-WAN implementation describe themselves as "very successful" with their overall WAN. In contrast, only 13 percent of organizations who are still planning or researching SD-WAN consider themselves very successful and only 12 percent of organizations with no plans for SD-WAN are very successful with the WAN. The research leaves little doubt. SD-WAN is essential to the future of enterprise networks.

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About Open Systems

As the leading global provider of managed SD-WAN solutions, with built-in security and analytics, Open Systems enables businesses to confidently create new business models driving market disruption and opportunity. With its unique digital operations platform, customers can pursue a digital-first strategy and leverage new technologies, like IoT and AI, to grow and scale business.

About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at www.enterprisemanagement.com or blog.enterprisemanagement.com. You can also follow EMA on Twitter, Facebook, or LinkedIn.

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