Taming the SD-WAN Beast

How SD-WAN can help lower network costs

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SOFTWARE-DEFINED WIDE AREA NETWORK

Maintaining a WAN can be a costly endeavor. Whether it's man-hours spent monitoring, troubleshooting, provisioning or answering help-desk tickets, or the cost of bandwidth spent every month for enterprise-grade ISP links, there's no denying it: a wide area network is a time and resource consuming beast with an endless appetite.

In the last few years, organizations around the world have been turning to a new type of architecture to help them tame their WAN beast: Software-defined WAN, or SD-WAN. SD-WAN is a concrete application of software-defined networking (SDN) to WAN connectivity. At its core, it resembles Hybrid WAN in many regards, namely the ability to easily combine public and private bandwidth from multiple Internet Service Providers (ISP). Indeed, some have called SD-WAN an improved incarnation of the Hybrid WAN[1], or to the very least a bridge to deploying a SD-WAN[2,3].
However, there are specific aspects in which SD-WAN is a concept of its own:

Aggregation of multiple links into a single virtual network – offer dynamic routing and seamless path selection between multiple links from different ISPs and technologies.
Zero-touch provisioning – the capacity to provision new sites (or endpoints) through a central console.
Centralized management and visibility – a single platform to manage policies and access reporting and intelligence.
Bandwidth optimization – compatibility with traditional features such as QoS and DPI.
Interoperability with other network services – devices must be capable of interacting with third-party devices and products, and allow automation via (REST) APIs.
Increased security through encryption options – capability to create tunnels to offer a secure path through unreliable links.

1 SDxCentral, "What's the Difference Between Hybrid WAN and SD-WAN", https://www.sdxcentral.com/sdwan/definitions/hybrid-wan-vs-sd-wan/, retrieved online on Feb. 13, 2017.
2 DOYLE Lee, TechTarget, "Is it hybrid WAN vs. SD-WAN, or does SD-WAN help implement hybrid WAN?", http://searchsdn.techtarget.com/answer/Is-it-hybrid-WAN-vs-SD-WAN-or-does-SD-WAN-help-implement-hybrid-WAN, retrieved online on Feb. 13, 2017.
3 SILBERMANN Matthieu, Infovista, "SD-WAN & Hybrid WAN Architectures: The Roles of Each in the Enterprise", http://www.infovista.com/blog/index.php/2015/08/27/sd-wan-hybrid-wan-architectures-the-roles-of-each-in-theenterprise/, retrieved online on Feb. 13, 2017.

The SD-WAN market is expected to grow to anywhere between 6[4] to 9[5] billion dollars by 2021. So what makes this type of deployment so attractive to enterprises? To put it shortly, all the items listed above can be summed up to a single idea: SD-WAN makes things simpler, creating massive savings opportunities for clients who adopt it. In this document, we outline a few of the main cost savings that can be expected by SD-WAN clients.

SAVINGS OPPORTUNITIES

Simpler Deployments

Through centralized policy and configuration management (ie.: orchestration), organizations deploying a SD-WAN can expect to save several hours of manual operations for each site in their network. Whereas an IT specialist would normally be required to assist in the installation of edge devices and then oversee their configuration, devices deployed in a SD-WAN can be connected to the network by anyone with a basic grasp of networking (Layer-2 devices are even easier to install, as they require no modification to the infrastructure in place). **Once the devices are online, the appropriate configuration can be distributed to all sites within the network from a single, Cloud-based interface, resulting in colossal savings in man-hours.**

Economical hardware options

The main benefit of automating traffic management and centralizing policy management is that edge devices don't need to carry the same intelligence and computing power as they used to. Incidentally, those devices can be much more affordable because they don't need heavy-lifting processors. **As a result, the initial investment to deploy a SD-WAN can be expected to be significantly lower as opposed to older technologies and deployments.**

Cheaper bandwidth, faster network

Hybrid WAN is a core component of SD-WAN, and represents a great way to leverage Internet bandwidth for cloud applications while retaining the safety of traditional WAN solutions for legacy site-to-site applications. While Internet bandwidth is more affordable than traditional WAN links and often as reliable, MPLS still has an important role to play in a strong network infrastructure; organizations should be able to benefit from both. **Through SD-WAN deployments, organizations gain the ability to create VPN clouds and efficiently leverage affordable Internet bandwidth to supplement their existing WAN infrastructure, offering a flexible answer to meet the ever increasing bandwidth needs of Cloud environments.**

4 BUTLER Brandon, NetworkWorld, "IDC: SD-WAN market to hit $6B by 2020", http://www.networkworld.com/article/3048174/wide-area-networking/idc-sd-wan-market-to-hit-6b-by-2020.html, retrieved online on Feb. 13, 2017.

5 ResearchAndMarkets, "Software-Defined Wide Area Network (SD-WAN) Market by Component, Deployment Type, Technology Service, Vertical, and Region - Global Forecast to 2021", http://www.researchandmarkets.com/research/x3ltvq/softwaredefined, retrieved online on Feb. 13, 2017.

Increase productivity with DPI

Internet access saturation has become a significant issue in recent years, with the rise of rich media web sites, streaming services, social media, peer to peer traffic and much more. This makes it harder for organizations to operate normally and to maximize their investment in Internet connectivity. SD-WAN typically relies on DPI to tackle that issue[6]. Deep-Packet Inspection (or DPI) offers visibility over application traffic, and can even allow decision-makers to prioritize critical traffic, and limit or block unwanted traffic. With DPI in place, bandwidth wastage is kept under control, and Internet-based distractions are taken out of the equation, resulting in increased productivity.

Prevent outages, avoid downtime

The cost of downtime is often neglected when evaluating the total cost of ownership (TCO) of a network. Lost productivity can have dire consequences on an organization's bottom line. According to IHS, downtime represents over $700 billion annually, mainly in productivity and revenue losses[7]. By offering increased visibility over network performance, organizations adopting SD-WAN adopters can have a better understanding of their network's health, providing them with the necessary intelligence to act before outages occur, or minimize their impact when they are unavoidable.

SD-WAN: an investment opportunity

The SD-WAN market is evolving at a fast pace, and new providers emerge every day. As more organizations move toward this architecture, it's important to remember how SD-WAN can help your organization become more competitive: SD-WAN is designed to help organizations maximize the ROI of their new hardware by lowering the TCO of their network and minimizing downtime, preventing losses in productivity. When compared to the countless Mbps and man-hours spent in keeping their WAN up and running, SD-WAN comes as a profitable alternative. It's a safe investment opportunity that no organization should go without.

6 DOYLE Lee, TechTarget, "Where SDN and DPI technology meet: Centralized control and automation", http://searchsdn.techtarget.com/tip/Where-SDN-and-DPI-technology-meet-Centralized-control-and-automation, retrieved online on Feb. 13, 2017.

7 STANGANELLI Joe, IHS, "The High Price Of IT Downtime", https://technology.ihs.com/572369/businesses-losing-700billion-a-year-to-it-downtime-says-ihs, retrieved online on Feb. 13, 2017.

About Martello's Elfiq Networks

White Paper – How SD-WAN can help lower your costs

Martello delivers confidence in network performance. Our solutions manage and optimize the performance of real-time services on cloud and enterprise networks and include network performance management software and SD-WAN technology. Over the top (OTT) service providers and enterprises around the world rely on Martello's technology to deliver better service quality and a reliable user experience. Designed for real-time communications such as voice and video, Martello's solutions detect, identify and address network performance problems BEFORE service quality is impacted.

Martello's Elfiq Networks enhances network performance and business continuity through innovative link balancing and bandwidth management technologies, delivering state-of-the art SD-WAN solutions to clients around the world. With Elfiq Central, end-users benefit from centralized management, zero-touch provisioning, increased visibility, simpler configurations and greater savings.

Our SD-WAN offering leverages proven link balancing technology (deployed at Layer-2), which can be deployed in a pre-existing infrastructure, resulting in real savings. And when it comes to bandwidth optimization and smarter path selection, our expertise allows us to make promises we can keep. Drawing from a proven expertise in networking, we take pride in our capacity to combine winning aspects of both telecom and software.

Layer-2 edge devices for seamless integration – no redesign necessary, firewall-agnostic.

SLA inspection module – report SLA breaches to your ISP.

Application traffic management options – prioritize or block specific application traffic.

Zero-touch provisioning – connect a new site to your SD-WAN with a few clicks.

License and maintenance management – a simple way to keep track of your network.

Unlimited VPN tunnels – create unlimited VPN tunnels.

Enterprise-grade with a telecom mindset – built for real corporate needs.

Martello's Elfiq Networks remains purposefully open to integrate third-party appliances for the sake of automation and optimization. While other SD-WAN players have aligned their products with specific technologies and currents, our team has retained the necessary agility to integrate the latest technologies to our product line by adopting a VNF mindset, allowing us to take every new wave in stride. With deployments in over 150 countries, Martello's Elfiq Networks develops and manufactures its own edge devices, controllers and consoles, and is proud to offer some of the most powerful – and most affordable – devices on the market, namely in terms of concurrent sessions, bandwidth and its VPN capacities.