



Prepping for the Oncoming Wave of SD-WANs

Offering network visibility for today's demanding applications

An information technology juggernaut has left the station, gathering tremendous momentum as it rolls toward virtually every midsize and large organization. No, it's not the Internet of Things, software containers or even big data. It's the software-defined wide-area network (SD-WAN), a groundbreaking technology many expect to double in market size in each of the next three years.

For IT leadership, there are two important questions: How can SD-WANs help solve the performance issues of increasingly high-bandwidth applications without the typical costly infrastructure upgrades associated with traditional WANs? And can SD-WANs offer greater visibility into the network so IT can provide the seamless bandwidth needed in today's demanding hybrid environment?

First, consider what experts are saying about the near-term future for SD-WANs:

64% of U.S. based companies are in stages of planning to implement or expanding implementation from a traditional WAN to an SD-WAN solution in the next 12 months.¹

Demand for more agile networks, driven by trends in cloud migration and mobility, will propel an eye-popping 90% compound annual growth in SD-WANs through 2020.²

1 Forrester's Business Technographics Network & Telecommunications Survey, 2016, Forrester
2 IDC Press Release, "IDC Forecasts Strong Growth for Software-Defined WAN as Enterprises Seek to Optimize Their Cloud Strategies," Mar. 24, 2016

Advantage: SD-WAN

A fast look at the IT and business realities explains the expected boom in SD-WANs. If asked, “What do you need most today to better support users,” the wish list of IT and network leaders would look like this: far greater visibility into their WANs—including a more accurate picture of which applications are running and how much bandwidth they consume—and a simple way of prioritizing those applications without relying on a service provider to gain that control.

They desperately want to provision expanding branch locations with the high-speed WAN connectivity users demand, without breaking the bank with high costs for infrastructure and ongoing management. Ironically, some locations have bandwidth to spare while others are bandwidth-starved. IT and network teams want a way around having to re-architect and reprogram connections each time a branch asks for new capabilities, such as a video-conferencing link.

Delivering high-performance applications to customers and employees is now critical to generating a positive customer experience for many organizations—sluggish apps or outages are simply unacceptable.

In other words, they want seamless bandwidth within today’s distributed enterprise. With SD-WANs, they get this and a lot more. SD-WANs dynamically route applications over a combination of private and public access types to reach multiple locations. Instead of managing various routers, firewalls and switches—and all the vendors that sell them—network services are hosted on edge devices and controlled from a convenient centralized location, giving the enterprise access to and control over the entire network.

Preparing for ‘out with the old’

Routers—along with WAN controllers, optimizers, firewalls and other pricey gear—worked well as the engines of enterprise WANs, but only as long as most data and those accessing and using it were close to one another. That is not the case in a distributed enterprise moving fast to the public cloud. IDC reports that global spending on public cloud services will top a robust \$122 billion this year.³

In fact, most organizations seldom need all the functionality of these complex legacy WAN infrastructures, but they pay for it all the same. They were designed to solve endpoint-reach problems of large networks, but cannot keep up with the demands of voice over IP, real-time applications, connectivity to cloud-based software-as-a-service applications, the proliferation of branch offices, and other contemporary IT realities.

Legacy router-based WANs are also expensive. They can easily run into the thousands of dollars for just one campus location. By comparison, the costs of using an SD-WAN to provision a WAN can be significantly lower than the cost of using a traditional router-based approach.

Speaking of the benefits of SD-WANs, Andre Kindness, principal analyst at Forrester Research, wrote, “More flexible models now prevail that democratize usage, allow mobility of people and devices, and empower everyone, not just networking pros, to exercise the right level of control of network resource consumption.”⁴

Get ready

The benefits and cost advantages of SD-WANs notwithstanding, it would be imprudent to simply rip and replace legacy WANs. That infrastructure, however, has a predictable refresh cycle. As the end of the cycle approaches, plans should be made to integrate SD-WANs. They can be integrated methodically on a trial basis at first, site by site, rather than in one fell swoop. This approach future-proofs the organization’s network as the costly traditional WAN infrastructure is gradually phased out.

An initial set of targets might be branch office connectivity. SD-WANs can aggregate multiple, inexpensive high-bandwidth Internet connections into a single strong shared connection that can be routed dynamically based on application needs. The better SD-WAN solutions enable this dynamic routing via a single remote console.

Also look to SD-WAN offerings that can be leveraged to boost secure Internet connectivity, making them more competitive with more expensive T-1 and Multiprotocol Label Switching options. These and other features are available through the cloud with SD-WANs, so users can expect a far greater measure of flexibility when connectivity is controlled via cloud software.

³ IDC Press Release, “Worldwide Public Cloud Services Spending Forecast to Reach \$122.5 Billion in 2017, According to IDC,” Feb. 20, 2017

⁴ Five Tenets Define Virtual Network Infrastructure, A Bold New Business Network, October 2016, Forrester

Help with integration

Deploying SD-WANs atop an existing legacy WAN infrastructure is not without challenges. For example, change control features are not always up to the task of handling the complexity of a transition period where both legacy and SD-WANs are in place. Configuration mistakes can and will occur. It is wise to look for an SD-WAN solution backed by proven integration services that can, for example, help you deploy SD-WAN with hybrid and existing WAN, and combine multiple connections into one for greater bandwidth at a lower cost.

Evaluating SD-WAN vendors

With a market poised for hockey-stick growth in the next few years, SD-WANs are predictably attracting a raft of vendors. Given this dynamic, what should you be looking for in an SD-WAN vendor? Remember that choosing the right provider is mission-critical when you consider that application performance is at stake. Here are key considerations in vendor selection:

Experience in the market. While SD-WANs can greatly simplify and strengthen WAN management and bolster network agility, don't confuse this with SD-WANs being simple. The genius of cloud-based SD-WANs lies in the complexity being hidden from IT, which is derived solely from deep experience in the WAN market. Experience can be revealed by nothing more sophisticated than a simple Internet search. Pay close attention to what customers say about the IT and business value of the vendor's WAN offerings, along with the number of deployed SD-WAN edges and the vendor's overall position of thought leadership in the market.

Incumbents are big and experienced, but...Incumbent WAN vendors made fortunes selling and then refreshing expensive routers. A reasonable question to ponder is just how committed are they to a far less expensive technology that totally disrupts that router hegemony.

Strength of SD-WAN SLAs and QoS. Service-level and quality-of-service agreements are guarantees you should insist upon to allow you to define network traffic profiles; set minimums and maximums for packet loss, latency and application bandwidth; define policies and seamlessly push them out for each location; and define policies that let you automatically prioritize and de-prioritize traffic. If a vendor hedges on any of these and other vital areas, move on.

Other considerations. When considering an SD-WAN service provider, find out whether it offers centralized management via a "single pane of glass" customer portal, providing deep visibility and control into all WAN functions. Does the service permit user-friendly convergence of voice, data and video apps with low-touch provisioning? Does the service offer redundant or diverse connections at every location to increase overall resiliency? It is important to note whether an SD-WAN vendor is truly providing added value, such as a management portal with demonstrated ease of use along with robust management analytics via the portal.

IT agility, cost efficiencies from Windstream Enterprise SD-WAN

Scottsdale, Ariz.-based [Kona Grill](#) is a fast-growing American grill and sushi bar concept spread out in 45 locations in 25 states. IT director Glen Holroyd was looking for a measure of competitive advantage gained from increased IT agility and cost efficiencies when he decided on an SD-WAN solution.

“We chose Windstream Enterprise’s SD-WAN solution because it integrates a hybrid network, [leading technology from VeloCloud](#), and a full suite of voice and data solutions,” Holroyd says.

“Together, they are an attractive solution for Kona Grill.”

In addition to customer success stories such as Kona Grill and a proven track record of bringing new technologies to bear on IT and business challenges, Windstream Enterprise is at the forefront of services designed to smooth the path to SD-WAN integration and deployment.

Also, Windstream Enterprise’s vertical market expertise translates into guidance that helps customers determine which applications are business-essential and would benefit most from initial deployments of SD-WANs as traditional routers reach the end of their refresh cycles.

About Windstream Enterprise

Windstream Enterprise collaborates with businesses across the U.S. to drive digital transformation by delivering solutions that solve today’s most complex networking and communication challenges.

To learn more about SD-WAN Concierge, visit windstreamenterprise.com

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