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The modern SD-WAN advantage

Even if you run an SD-WAN today,
it's time to check what's new

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Solving the remote access riddle in the work-anywhere era

The world of IT has changed - and it is still changing. Work-from-home has become work-from-anywhere, security has rocketed up the enterprise agenda, SaaS applications and cloud services are in use everywhere, and over it all, IT departments face static or slow-growing budgets and significant skills shortages.

Against that backdrop, has your network infrastructure kept up? It's a particularly pertinent question in relation to your SD-WAN, given that work has become even more distributed. And answering it meaningfully doesn't just require taking a step back to consider how use cases and requirements have evolved, but also having a proper look at what's been going on in the technology space to ensure you're taking full advantage of what's on offer today.

This document is designed to help with this. Our aim is not to teach you stuff you already know, but to give you a framework within which you can get your thoughts straight, objectively assess where you are, and move forward with confidence.

If you thought you knew what an SD-WAN can do, check again

One of the challenges with infrastructure is it's a bit like furniture: after a while you stop noticing it, until it breaks or you hurt yourself on it. So it is with SD-WANs - the first generation brought low cost connectivity, but could be tricky to manage and inflexible once you tried to go beyond the basics, so many users didn't bother trying.

Today's next-generation SD-WANs can offer much more - if you know what to look for. Here's a few examples of what makes a next-generation SD-WAN truly modern - and why it matters:

Cloud-enabled deployment

Systems that offer zero-touch provisioning (ZTP), and handle deployment, monitoring and management via the cloud can greatly simplify both implementation and subsequent daily operations.

Smart troubleshooting

A next-generation SD-WAN automates problem remediation as much as possible, for example using AI-type technology to spot trouble early, and suggest or automatically apply appropriate fixes.

Multiple platform support

As a software solution, a modern SD-WAN can run across multiple platforms, including existing or new hardware, public clouds, software appliances and bare metal, not be tied to a limited set of options.

Flexible security choices

A modern SD-WAN can integrate with a variety of security options. For example, the popular SASE (secure access service edge) scheme is an SD-WAN augmented with secure service edge (SSE) technology.

High performance

Using broadband and the Internet cuts cost but also adds contention and risk. Smart SD-WAN solutions are session-based and multi-path, yielding higher performance, instant fail-over and high availability.

Complexity vs ease of use

The combination of deeper and more complex functionality with cloud-enabled and automated management can bring ease of use and a better experience to administrators and users alike.

It's all about making the network more intelligent and autonomous

Going software-defined, by moving the control logic that drives the underlying hardware into a discrete software layer that's more programmable and visible, plus easier to configure and secure, was only the start. The next step was to take that configurability and visibility and add the smarts to make it adaptive and self-managing.

The result is a new generation of SD-WANs that is significantly more open, dynamic and intelligent. Not only can these SD-WANs adapt in real-time to pick the best path from multiple options, and reduce the admin workload by operating largely autonomously, but they can integrate security policy, traffic management and much more.

Ensure your thinking and awareness are up to date

Modern SD-WANs address a wider range of use cases and problems

Whatever you're running now to connect to remote offices and workers, such as hub-and-spoke IPsec VPNs, WAN optimisation technology or even a first-generation SD-WAN, it's likely that you still have problems. Maybe your administrators are overworked, say, or your users can't get work done on time, or your plans to support evolving future technologies and requirements are being delayed and disrupted.

It is crucial then to appreciate how much SD-WANs have evolved, and how their capabilities have expanded and grown to meet today's networking and security needs and challenges. In particular, the next generation of SD-WANs is considerably more than just an upgraded network management system, and there are real business benefits to how it improves service quality, network security and user experience, while reducing cost, complexity and the everyday administrative workload.

With that in mind, let's look at some of the network challenges that your organisation may very well face, and how they can be addressed with the right modern SD-WAN technology.

Inadequate edge security

The growth in work-anywhere and the IoT revolution has greatly expanded the network attack surface, and all too often the weakest point is at the edge. Security can be layered on, but this is rarely as effective as building it in. Modern SD-WANs enable the integration of synergistic capabilities, such as adding SSE (secure service edge), whether from the same supplier or a partner, to create a SASE platform. Some modern SD-WANs can also act as secure web gateways, encrypt WAN traffic, and support cloud access security and zero-trust network access. All of these help maintain edge security.

Poor SaaS user experience

The use of web-based and other SaaS (software-as-a-service) tools, such as Google Workspace, Microsoft Office365 and Salesforce, has greatly accelerated. But performance and user experience can suffer greatly if, for security's sake, remote workers' SaaS traffic must travel via HQ. Modern session-based SD-WANs can securely route SaaS traffic direct to the service, giving better performance while still enforcing relevant policy.

Broken video and sound

In a work-anywhere or distributed organisation that relies on VoIP phones and video calls, spotty or lost connections that lead to stalled video and gaps in the audio are a nightmare - yet they are all too common. And older SD-WANs that rely on building virtual tunnels over the Internet do not help, because it takes time to build a replacement tunnel. Modern SD-WANs can provide better support for these real-time applications, for example by dynamically tracking the connection quality, application performance and device health, and automatically applying suitable fixes such as failing over to a new session.

Tedious fault finding and performance optimisation

Managing a complex mix of private and public connections, SaaS tools, etc., while also providing consistent application performance and reliability, is very often a slow and tedious task. Luckily, that makes it an ideal job for AI, so modern SD-WANs may deploy AI-based tools to poll the network and service, e.g. to look at link and session data, application and device health, and so on, then automatically optimise the user experience, or apply and validate a fix. Only problems that can't be fixed automatically, such as faulty cables, need be flagged for manual attention.

SD-WAN challenges and solutions

Flexibility & Control

Difficulty scaling out

Older WAN solutions were designed to connect relatively small numbers of endpoints, and can struggle when required to cope with today's vastly expanded and significantly more complex endpoint population. Modern SD-WANs are designed to expand much more easily, thanks to automated provisioning and more efficient use of bandwidth and other resources.

Complex and time-consuming management

Is your IT team bogged down in routine administration? From its early cost-focused days, the SD-WAN has grown in capability and sophistication. So of course its management has grown ever more complex too, leaving a significant skills gap. Modern SD-WANs can address this in two main ways: AI for dynamic performance and health optimisation, and automation to take over routine management tasks. This all makes life easier for the IT team, and that in turn means a better experience for users too.

Building the business case: your modern SD-WAN appraisal

Could your organisation justify and benefit from an SD-WAN update or refresh? And if it could, how will you, as the IT leader or planner responsible, both pick the right technology options and build a business case for the 'internal sell'?

To help with that, we have prepared a checklist of issues to consider. First, the business problems or challenges that an SD-WAN refresh can address, and then some items relating to how you frame your technology choices.

Hint: If you tick "Major problem" or "Needs attention" at least two or three times in the first section, and 'Yes' or 'Maybe' at least three times in the second section, it's probably time to reconsider your SD-WAN options.

How do you rate these problems and needs?

Business challenges

	Major problem	Needs attention	Not a worry
Our remote users are unhappy with performance, reliability and response times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public cloud and SaaS access is adversely affecting our corporate bandwidth usage and costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security and regulatory compliance fears are growing around the continued use of home WiFi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supporting remote and hybrid working consumes excessive amounts of the IT team's time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We lack visibility into our WAN, its performance and cost, and what our users are using it for	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Technical choices

	Yes	Maybe	No
We need anywhere-to-anywhere connectivity for flexibility and scale, rather than fixed tunnels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The growth in remote and hybrid work means we need more integrated security at the network edge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We need more network automation and self-driving capabilities, including AI, to reduce the IT workload	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The ability to re-use existing infrastructure and protect our investments is important	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We also have (or need to have) a SASE and/or zero-trust network access project underway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We need cloud-enabled deployment, provisioning, monitoring and management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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