The Complete Guide to SD-WAN:

Moving Away from MPLS

making your **Business Brilliant**

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What is SD-WAN?

A software-defined wide area network is a virtual WAN overlay that enables businesses to deploy hybrid or all broadband WANs using multiple types of connectivity.

SD-WAN leverages Internet bandwidth, enabling businesses to reduce or completely eliminate dependency on private MPLS connections. It offers compelling benefits including substantial cost reduction, increased performance, faster provisioning and reduced complexity.

If you have questions or want to see how this technology can transform your business, please contact us on either 0333 234 0011 or info@wavenetuk.com

This animated video highlights the benefits of moving to an SD-WAN architecture that leverages broadband connectivity.[1]

1. "Evolve Your WAN to an SD-WAN", Silver Peak, 2015

Business drivers for SD-WAN adoption

An IDC study found that 70% of companies are planning to adopt SD-WAN in some form in the next 18 months[1]. The top drivers for enterprises to consider SD-WAN are:

» **Consistent security**
Accounting for 36% of planned deployments

» **Cost reduction**
Second leading driver with 35%

» **Reduced complexity**
Driving 31% of adoptions

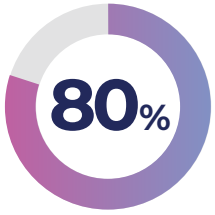
» **Improved performance**
A quarter of respondents identified performance as a main driver[2]

1. "Cloud and Drive for WAN Efficiencies Power Move to SD-WAN", 2016, IDC
2. "The 2016 Guide to SDN & NFV: The Use Cases and the Business Case", 2016, Jim Metzler

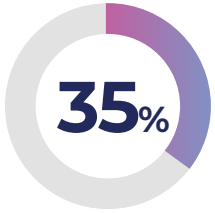
Cost reduction

SD-WAN can dramatically lower connectivity, equipment and network administration costs by up to 80% by enabling customers to leverage lower-cost Internet bandwidth.

MPLS circuits are expensive to install and scale and the cost of MPLS per Mbps can be up to 100 times the cost of Internet bandwidth. MPLS is priced anywhere between £30 and £60 per megabit per month, compared to as little as £2 for broadband Internet.



Companies can reduce networking costs by as much as 80%[1]

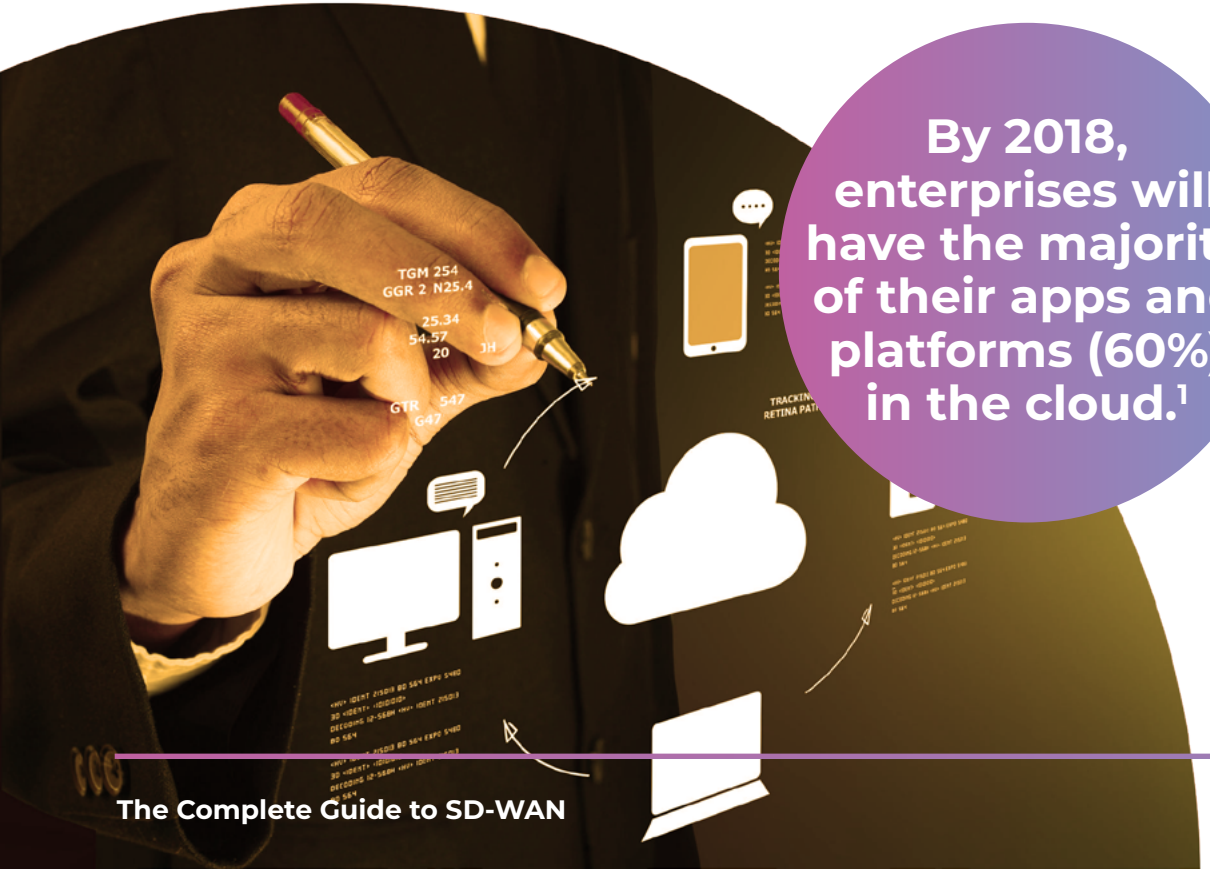


Cost reduction is one of the leading drivers, accounting for 35% of SD-WAN adoptions[2]

1."SD-WAN Cost Analysis", Silver Peak, 2017
2."Cloud and Drive for WAN Efficiencies Power Move to SD-WAN", 2016, IDC

Improved network & application performance

As adoption of cloud-based applications continues to grow (Office 365, Skype for Business, Cisco Webex), we start to see the limitation of MPLS, driving the need for SD-WAN. It gives businesses a cost-effective way to securely connect users to their applications and gain flexibility, control & visibility.
SD-WAN ensures high availability with minimum downtime.
When running over pure Internet bandwidth, the best way to maintain 99.99% availability is to utilise 2 links from 2 different providers in case of link failure.
Additionally, the solution enables you to measure jitter, latency and packet loss, routing traffic to the best path available with the least amount of loss. It ensures exceptional performance, reliability and private-line-like performance over the public Internet.



By 2018, enterprises will have the majority of their apps and platforms (60%) in the cloud.[1]

1. "Enterprise Cloud Computing Survey", 2016, IDC

Improved security

MPLS has been considered a secure form of network connectivity as it uses private links and does not require encryption. However, the data travelling through the node is exposed and if anyone gains access to the wire outside the building, the data can be tapped.

With SD-WAN, security across the Internet can be ensured by utilising encryption and firewall level packet inspection used for security, reporting, and traffic prioritisation. Additionally, SD-WAN offers very high visibility into the amount and types of traffic traversing the network.

Monitoring traffic can help you identify attackers and prevent security breaches.

'Security' is indicated as one of the top IT priorities for 2017.[1]

1."IT Priorities 2017 survey", Computer Weekly, 2016

How quickly can you deploy SD-WAN?[1]

WATCH NOW >

Reduced complexity

The management and orchestration of SD-WAN gives it its competitive edge and differentiates it from other solutions. The complex infrastructure of MPLS connections proved to be prohibitively expensive and complex, both to implement and maintain.

In contrast, broadband internet links are much quicker to provision and deploy.

The plug-n-play concept and point-and-click provisioning of SD-WAN are its biggest unique selling points. Additionally, everything is GUI-based which means that large and complex WANs can be managed more simply than ever before.

1."Silver Peak Unity EdgeConnect Zero-Touch Deployment", Silver Peak, 2015

How to determine if SD-WAN is right for your business

SD-WAN seems like a panacea to all network ills, but before rushing into deployment, you need to determine whether SD-WAN is a right fit for your business. SD-WAN is best suited for organisations that:

- Have multiple sites which are geographically dispersed
- Are looking to improve application performance in the cloud (e.g. office 365)
- Want higher visibility and control of data traffic
- Need to deploy new sites quickly
- Are seeking to simplify WAN management
- Want to cut both dependency on MPLS and costs
- Are looking to improve the user experience via improved performance of applications
- Want flexibility to introduce performance upgrades where and when required

SD-WAN is a right it?

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Heard enough?

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Roadmap to implementing SD-WAN

1. Network discovery and design discussion

Expect the following questions to be asked:

» How is the network structured?
» What type of connectivity and bandwidth(s) do you have?
» What traffic types, applications and their respective business priorities and bandwidth usage do you currently have, and plan for in the near future?
» What key business applications challenges are you looking to address?

Based on the above questions we will produce a clear implementation and testing plan, which can be used to guarantee the success of the POC.

Roadmap to implementing SD-WAN

2. Proof of Concept (PoC)

» To ensure that we maximise testing time, we deploy the Silver Peak orchestrator management/configuration platform, and the Silver Peak appliances prior to the licenses being activated

» Once the engineers have pushed out the configuration to the Silver Peak appliances in preparation for testing, the 30 day trial will commence

» We will work with you to ensure that the traffic is optimised by tweaking policies, to ensure that we deliver the performance gains that are expected

ONUG SD-WAN POC demo

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Roadmap to implementing SD-WAN

3. Deployment Overview

Following a successful PoC, we continue to work with you to explore the deployment options and map out the production implementation, as this can differ from the POC deployment.

There are 2 options for the deployment of Edge Connect, Silver Peak's SD-WAN solution. The first can be a non-disruptive installation of the physical (or virtual) appliances, referred to as 'out of path mode'. A more common deployment method is where the physical appliance resides in 'bridge mode' which is a far simpler method. However, it requires a few minutes of downtime to your circuits.

Roadmap to implementing SD-WAN

4. Steps to take in deployment

Overlays Configuration:

» Overlays are the complete set of logical connections which make use of tunnels and underlying physical connections between the Edge Connect appliances

» The overlay allows you to control what traffic the solution prioritises and which type of underlying physical connections will be used. The configuration of the Silver Peak estate means that different BIPs can be created for different sources and types of traffic. For instance the high priority traffic uses the high speed links

Configuration of Policies:

» Policies will be applied by the Silver Peak orchestrator to the appliances, they are used to define the settings that can be applied across multiple appliances

» By defining these policies it gives the power to control what and how traffic is optimised across the links, such as QoS, traffic shaping, bandwidth utilisation and prioritisation

SD-WAN Frequently Asked Questions

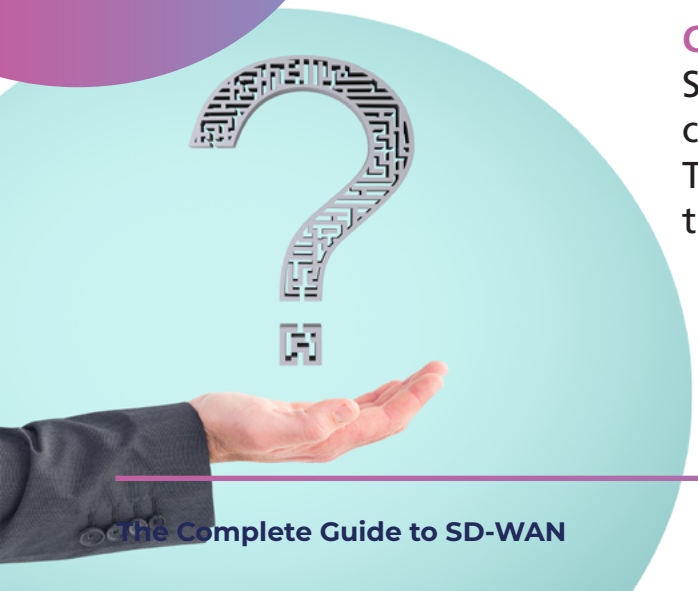
All questions you might have about SD-WAN, answered:

Can we really use internet bandwidth for an enterprise network?

Absolutely, business-class high-speed Internet bandwidths with speed at even 1Gbps are available and can be used for enterprise networks.

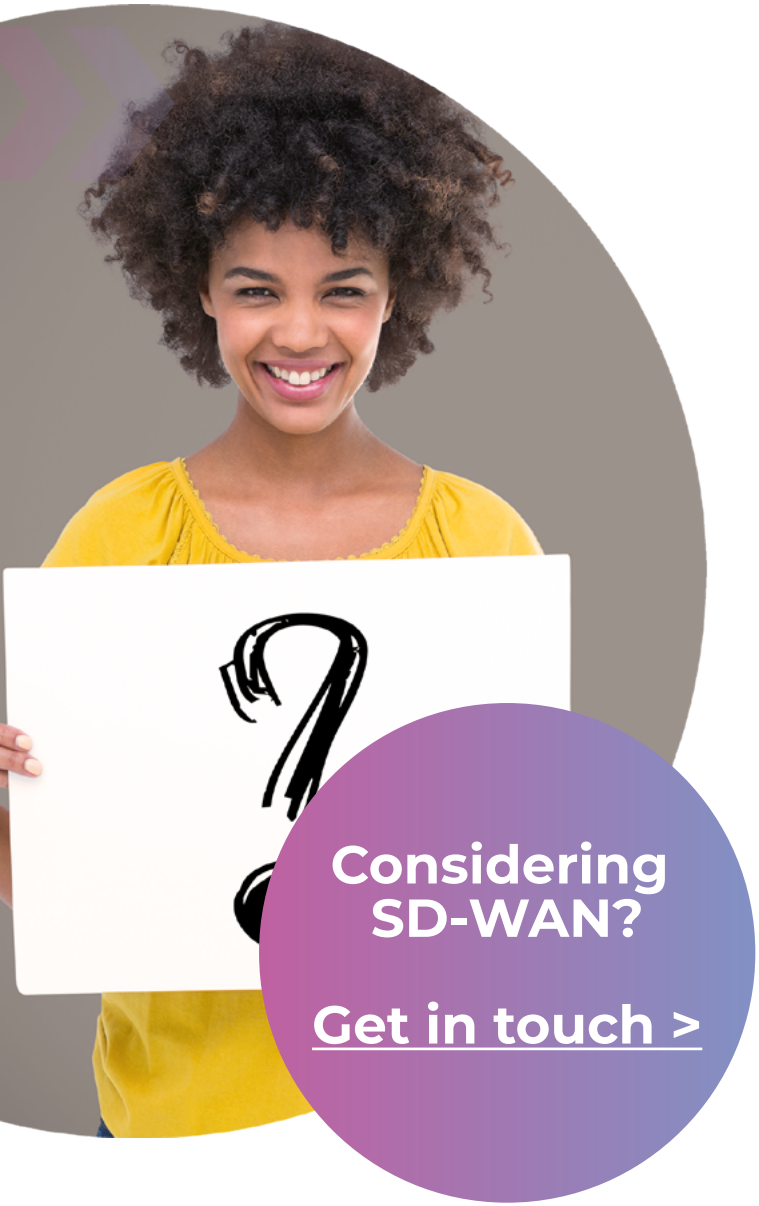
How does SD-WAN save you money?

SD-WAN reduces MPLS dependency and lowers the operating costs by relying less on expensive private links and using public connections instead. MPLS is priced anywhere between £30 and £60 per megabit per month compared to as little as £2 for broadband Internet.



Can we fully replace our MPLS network with SD-WAN?

SD-WAN can fully or partially replace existing MPLS connections, it comes down to choice and what you think is best for your business. The MPLS replacement doesn't need to be done all at once, a phased transitional approach is often the way most organisations go.



SD-WAN FAQ

How easy is it to test the platform in my environment?
At Wavenet we understand that it is essential to rigorously test an SD-WAN solution in your own environment before committing to it. A PoC (Proof of Concept) is not a disruptive and complicated exercise and is the best approach.

Do I need to wait for my network contract to end before looking at SD-WAN?
There is no need to wait until the end of your contract. SD-WAN can be adopted without uprooting your entire network or ripping out the old MPLS connections. In this situation, SD-WAN is simply going to enhance your MPLS infrastructure until the contract expires.

What's the difference between an SD-WAN and a Hybrid WAN?
SD-WAN is a virtual WAN that enables customers to leverage broadband Internet connectivity. Hybrid WAN refers to a WAN that leverages both MPLS and broadband for branch connectivity.

SD-WAN FAQ

How long does it take to deploy SD-WAN?
It only takes a couple of minutes to deploy SD-WAN at a single location. The installation is plug-and-play, easy with zero-touch provisioning. The appliances simply need to be on and connected to the network.

How will it interact with QoS in current Cisco environment?
The solution can honour LAN QoS but also allows for greater granularity on QoS across WAN.

Does it handle the IPsec VPN elements or should they be set up separately?
Yes, the Silver Peak WAN fabric is established via IPSec tunnels.

How would you handle third party IPsec connections?
Leave these on the HQ/DC firewall. The solution only terminates its own IPSec tunnels.

Can it deliver true end to end QoS?
Absolutely.

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Still Interested?

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About Wavenet

We are passionate about being at the forefront of disruptive technology providing our customers with the innovation and infrastructure to truly outperform their competitors.

We work with our customers to understand each business's unique needs and challenges and build innovative solutions that are reliable, secure and future-proof.

Established in 2000, Wavenet has grown to over 200 employees and more than 8,000 customers nationwide giving us the trust and experience required to make your Business Brilliant.