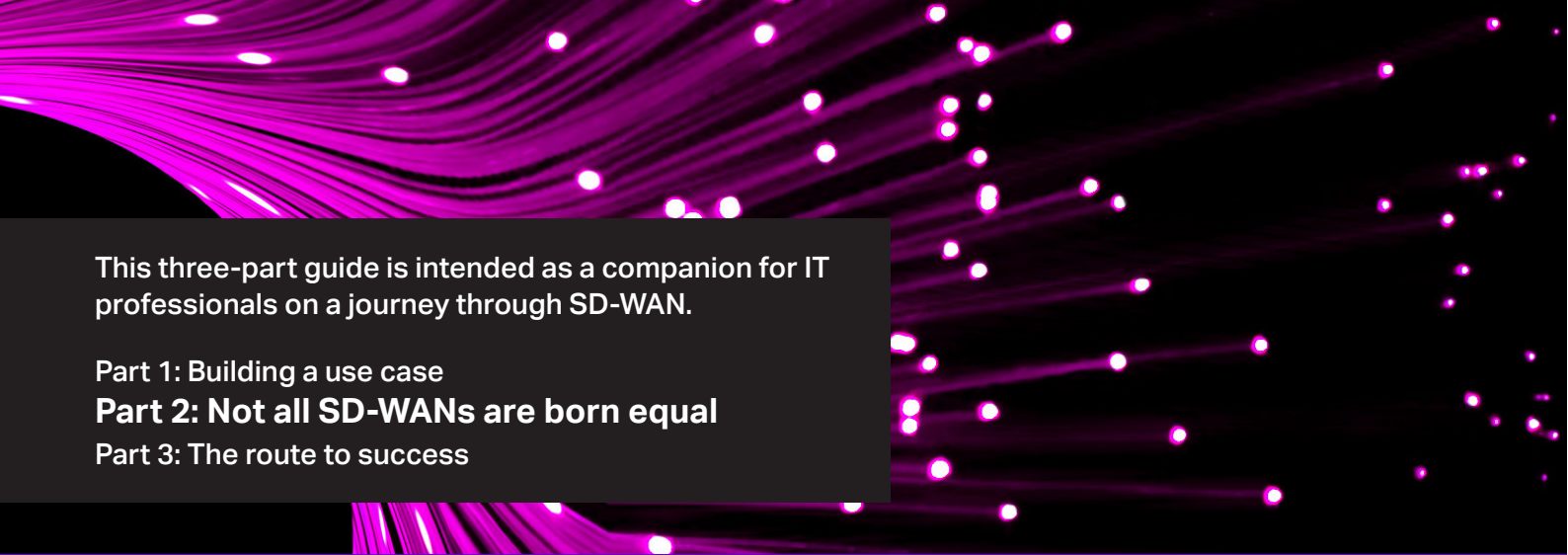




SD-WAN Making Sense Guide:

Part 2: Not all SD-WANs are born equal



This three-part guide is intended as a companion for IT professionals on a journey through SD-WAN.

Part 1: Building a use case

Part 2: Not all SD-WANs are born equal

Part 3: The route to success

BUYER BEWARE

The remarkable hype surrounding SD-WAN makes it more important than ever for potential buyers to test in the most robust way possible the claims made by contending vendors. Buyers must be prepared for answers couched in terms that make-like-for-like comparison harder than it would be with a more mature technology.

The cost savings claimed for SD-WAN derive from three main areas.

- Connectivity
- Hardware
- Management overheads

ACCESS CONNECTIVITY FUNDAMENTALS

Will SD-WAN make MPLS redundant? At Gamma, we think that the answer is no.

SD-WAN vendors claim that they can introduce QoS, prioritisation and acceleration, but keep in mind that SD-WAN is an edge technology and that the internet is a public network that lacks end-to-end control.

SD-WAN offers increased flexibility and capability, but at Gamma we are not seeing significant displacement. In the UK, MPLS is continuing to come down in cost, and many enterprises are responding by driving towards hybrid networking rather than swapping all-private for all-public networks. We see some enterprises flirt with SD-WAN, but decide to put their money into lower cost fibre Ethernet which at the moment offers a more favourable bandwidth vs cost return.

Globally, a recent Gartner survey indicates that only 20% of enterprises that have deployed SD-WAN have completely replaced MPLS.

Even in regions such as the US where MPLS is much more costly than in Europe, key enterprise applications including voice still need latency and bandwidth guarantees.

It should be noted too that the extent of SD-WAN deployment has a profound impact on forecast returns. If only a few MPLS circuits are replaced with SD-WAN, then any potential reduction in costs will be curtailed. Overall, we believe that the decision of whether to use MPLS or the Internet should not be based on cost alone. Rather it should be led by the applications being used, their criticality to the enterprise, and their particular needs. If applications are not sensitive to latency, packet loss and jitter, then maybe MPLS is not needed. However, if voice and video are being used and are critical applications, then only MPLS can provide a guaranteed business grade service.

We caution would-be buyers of SD-WAN that even in ideal circumstances it may be up to three years before savings are realised from changes in circuit type alone.

ELUSIVE HARDWARE SAVINGS

We have a toolset and the expertise to help organisations understand the likely savings and evaluate what blend of technologies is best able to support their applications.

Savings resulting from hardware changes can prove similarly elusive. The boast that “SD-WAN will replace routers” is commonly made, but is flawed. Traditionally a router serves both the data plane and the control plane.

SD-WAN might remove the need for the router to serve the control plane. The function could instead be loaded onto a suitable Network Function Virtualisation device. However, it should be noted that the NFV device may not support all the connectivity types required such as DSL and 4G, and that doing this does not eliminate cost – rather it transfers it from one device to another.

MANAGING OR MAINTAINING

Some of the claims made about the potential of SD-WAN have firmer foundations and begin to provide a basis for sound, informed judgements that are unlikely to be regretted, or prove embarrassing.

The centralised, automated and simple to use nature of the orchestration engine within SD-WAN does mean that like-for-like management functions will cost less. Tasks can be achieved rapidly, easily and with less risk.

But there is a trap for the unwary here. SD-WAN enables more to be done by the existing IT staff resource. As enterprises deploy further applications and have a more dispersed data footprint, the volume of management inputs required will increase, resulting in a direct comparison with before and current costs, meaning overall spend may not decrease at all.

The quality of the automation functionality embedded within an SD-WAN solution is a major factor in the selection process.

CENTRALISED MANAGEMENT AND ZERO TOUCH DEPLOYMENT

This should allow you to configure a single device or the entire estate from the centralised console. Zero touch deployment is a major selling point of SD-WAN but this can sometimes be misleading. It implies that an engineer does not need to attend site to plug anything. But depending on your use case you may decide that it is preferable to deploy dedicated appliances, rather than a virtualised solution. Once installed then all adds, moves and changes will require a zero touch.

TRANSPORT INDEPENDENT OVERLAY AND TRAFFIC PRIORITISATION

It is essential that an SD-WAN offering should be able to use any type of connectivity across any core architecture to pass traffic. The selection of what route traffic should take should be completely automated based on the initial policy set and should be configurable based on various metrics such as latency or congestion to name a few.

Only in the event of a significant degradation or potential degradation of service should the IT team have to manually intervene, otherwise the solution should automatically re-route traffic.

SECURITY

Moving from a network configuration revolving around the data centre to one that is increasingly cloud-centric and open at the edge means you'll have more doors to watch and more to lock. Although it is typically less complicated to add security at the edge rather than the data centre you need to think about the impact on management time and what might be the optimum deployment approach.

Security can be embedded or virtualised on SD-WAN devices. SD-WAN functionality can be virtualised on some security devices. You might opt for keeping the two entirely separate by deploying dedicated SD-WAN and dedicated security devices. And lastly SD-WAN can be used with a cloud security solution such as Zscaler. There is no one right answer. The choice will be entirely centred around what works for each individual enterprise.

NETWORK SEGMENTATION

Partly about security and partly efficiency, this is a highly desirable ability. Segmenting applications and services such as guest Wi-Fi, business applications, voice, video, credit card transactions allows each of them to work independently and efficiently. It also reduces the attack surface of the network, not just at the perimeter but internally too, by creating boundaries that logically isolate chosen applications and classes of users.

ADVANCED ANALYTICS

This should provide granular visibility of the network; how each link is performing, and how applications are performing, both in normal operational circumstances and when problems occur. It also allows informed planning, budgeting, new deployments and scaling, as well as gaming 'what-if' scenarios.

CLOUD INTEGRATION

Manufacturers that have integrated into the likes of AWS, Azure and Google allow you to automate the provisioning of SD-WAN services to connect to these cloud services. Cloud credentials are entered into the SD-WAN platform and a virtual appliance is created automatically. VPCs are then discovered and segments are mapped against each VPC workload.

This removes manual configuration and potentially the need to either use an Express route connection at all or wait for one to be installed and configured until taking advantage of your cloud service. This gives you greater flexibility and you can scale up and down across multiple cloud services much more quickly creating a more agile service for your business.



FURTHER READING

Need more detail? The following Gamma resources may be of further interest:

BUILDING YOUR **UCAAS** **STRATEGY** ON THE **RIGHT FOUNDATIONS**

Many businesses haven't pressure tested their foundations to ensure they can meet the new requirements for rich communication and collaboration services

<https://lp.gamma.co.uk/webinar-building-your-UCaaS-foundations>

MAKING SENSE OF THE **MYTHS**

Examining whether your next WAN should be an SD-WAN?

<https://www.gamma.co.uk/blog/direct/the-reality-of-sd-wan-making-sense-of-the-myths/>