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SD-WAN Is Not as Easy as It Looks

Five Deployment Mistakes Enterprises Make and How to Avoid Them

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Contents

Summary	2
SD-WAN is an enterprise smash hit…	2
…but it is not perfect	2
The five top SD-WAN issues	3
1: Failure to set goals, review, and validate a plan	3
2: Failure to maintain centralized network order	4
3: Failure to vet suppliers, choose by brand name	5
4: Failure to select an adequately resourced partner	6
5: Failure to consider hidden surprises	7
SD-WAN delivers by avoiding common errors	9
Appendix	10

Summary

SD-WAN is an enterprise smash hit…

The software-defined wide area network (SD-WAN) has caused a sea change in enterprise networking. The technology is only about eight years old, and adoption has swelled enormously. Omdia's enterprise surveys show about half of large enterprise customers now have some experience with the technology.

A few large organizations have already cut over their entire enterprise network to SD-WAN, but the average adopter still has SD-WAN at less than one-third of its sites. Most multinational enterprises have much further to grow.

In plenty of cases, enterprises get hold of SD-enabled platforms but have not yet built an SD-WAN. Conventional router, firewall, and WAN optimization vendors retrofit and upgrade their gear to be software defined. Enterprises get benefits such as better centralized management and improved analytics.

…but it is not perfect

In its most recent enterprise network services survey, Omdia recorded the highest customer satisfaction for SD-WAN since measuring started in 2019. There are several reasons for these high marks. Platforms and features have become more mature, and businesses deploying SD-WAN have more realistic expectations. In the past, some IT executives hoped "zero-touch deployment" would mean SD-WAN would fully optimize by itself. Some wanted SD-WAN to fix issues with their underlying network; others hoped to pair SD-WAN with cheap broadband access without sacrificing quality. Still other IT executives thought SD-WAN management would be "point-and-click" simple. IT executives understand that SD-WAN migration takes time, effort, coordination, and expertise.

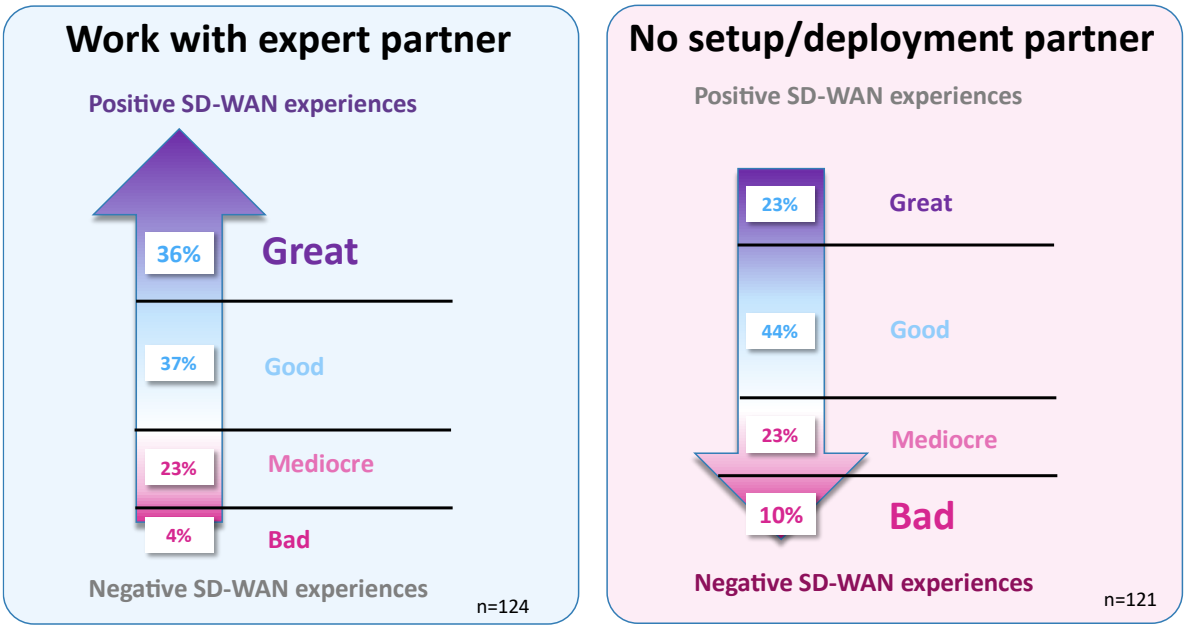
Omdia's research finds that 7% of large enterprise SD-WAN adopters are unhappy with the results. Another 30% of adopters have moderately positive rather than outright positive experiences. Executive enterprise interviews reveal that even happy adopters have surprise SD-WAN migration issues. Happy enterprise executives did their research, prepared well, and partnered smartly, so issues were easier to resolve. Unhappy enterprise executives made wrong platform, network, and/or partner choices, which created or compounded problems.

There are common missteps enterprises make when they deploy SD-WAN. In the next section we list five top issues – what goes wrong and how enterprises can avoid these pitfalls to stay on track and maximize their chances for great SD-WAN outcomes.

The five top SD-WAN issues

1: Failure to set goals, review, and validate a plan

Figure 1: Enterprises risk problems if they do not vet their SD-WAN plans with an expert partner



Source: Omdia

Enterprises deploying SD-WAN can fail to “measure twice, cut once.” Picture this scenario: through incentives or upgrades from an eager supplier, the business gets hold of SD-enabled gear. The business decides to deploy the new capabilities in its network. There is no plan beyond turning on the features. This is a recipe for later problems.

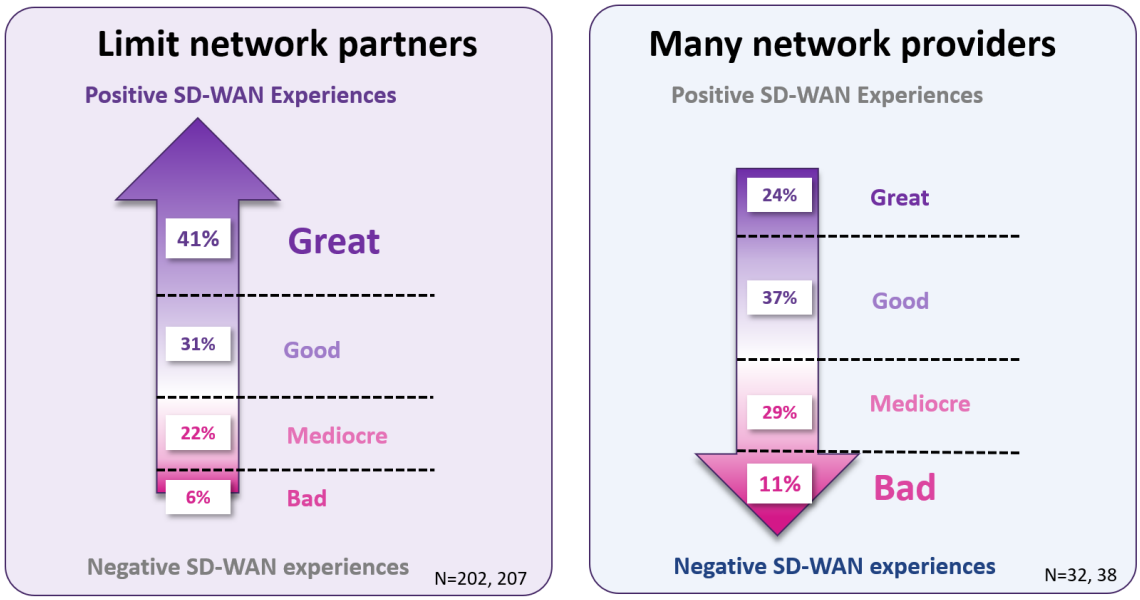
A proper SD-WAN deployment needs to be fitted to the needs of the enterprise. Each SD-WAN platform has different strong points. Some SD controllers and management interfaces focus on simplicity, others support sophisticated configurations; some are strongest in managing flexible access, others are about robust routing and network optimization; still others are security first.

Without planning, the enterprise is jumping into new territory without a map. The business did not decide its business needs, did not assess whether the chosen platform does a good job meeting those needs, and did not consider application policies and network architecture.

Many enterprises start down the road to SD-WAN without an in-house, dedicated subject matter expert. The enterprise may put together a SD-WAN needs analysis and upgrade plan in-house. It should verify with experts that the plan makes sense. Omdia research shows enterprises are likelier to run into problems if they do not collaborate with an expert partner from the start. They have better outcomes when they work with a partner that helps design, evaluate, validate, and/or deploy, which can include setting up initial configurations.

2: Failure to maintain centralized network order

Figure 2: Quality suffers when enterprises let locations choose network partners independently



Source: Omdia

The legacy large enterprise branch office architecture was a pair of routers, connected to a pair of identical dedicated access circuits, attached to MPLS VPNs. Services were slow, static, costly, and predictable. When applications shift to cloud and networks move to SD-WAN, legacy conventions no longer apply. Sites become hungry for flexible bandwidth at reasonable costs. Businesses switch to secure internet VPNs delivered over dedicated fiber and broadband access.

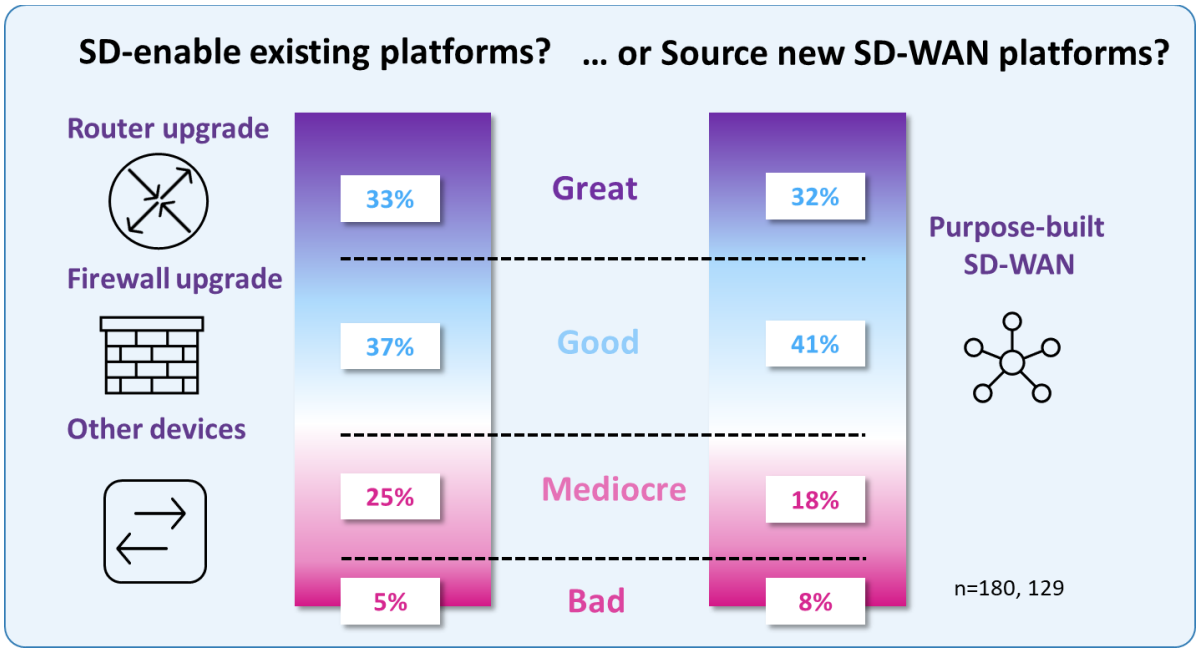
In theory, every internet service provider (ISP) reaches everywhere on the internet. This leads branch office IT to advocate for preferred local ISP partners, not top-down decisions from headquarters. Some enterprises have let their branches source their own ISPs. This bottom-up buying creates a host of problems. The business ends up with a stack of contracts, each with its own terms and limitations, and some in different languages. Each partner has different preferences for interaction, and its own processes for trouble handling and change management.

What started as a well-intentioned idea – empowering individual sites to make their own decisions – results in management chaos. Enterprises lose partner consistency and accountability. They waste time dealing with a cast of ISPs, trying to solve mysteries.

Buying network access might not seem like an SD-WAN problem but the network underlay is critical to the experience. Enterprise IT is more satisfied with its services if it sources networks from one or just a few partners. Buying from many ISPs erodes the SD-WAN experience.

3: Failure to vet suppliers, choose by brand name

Figure 3: SD upgrade vs. new SD-WAN platform – each does well if the implementation is suitable



Source: Omdia

Vendor SD-WAN platforms have different pedigrees – SD-WAN from a conventional router vendor is different to SD-WAN from a firewall vendor, remote access specialist, or WAN optimization specialist. Newer SD-WAN platforms may be inherently multifunctional and may wrap functions under a "single pane of glass." But these, too, have priorities. The secure access service edge (SASE) splinters suppliers' attention even more among many competing priorities.

Omdia survey research has found that across 11 major vendors and 15 platforms, about 20–40% of enterprises report great experiences. But for every single platform – no exceptions – Omdia found unhappy adopters. The platform's strengths do not always fit enterprise priorities.

It is tempting for enterprises just to upgrade to SD-WAN with a preferred network equipment partner. Adding SD-WAN could be as easy as a license and contract change, and a software upgrade.

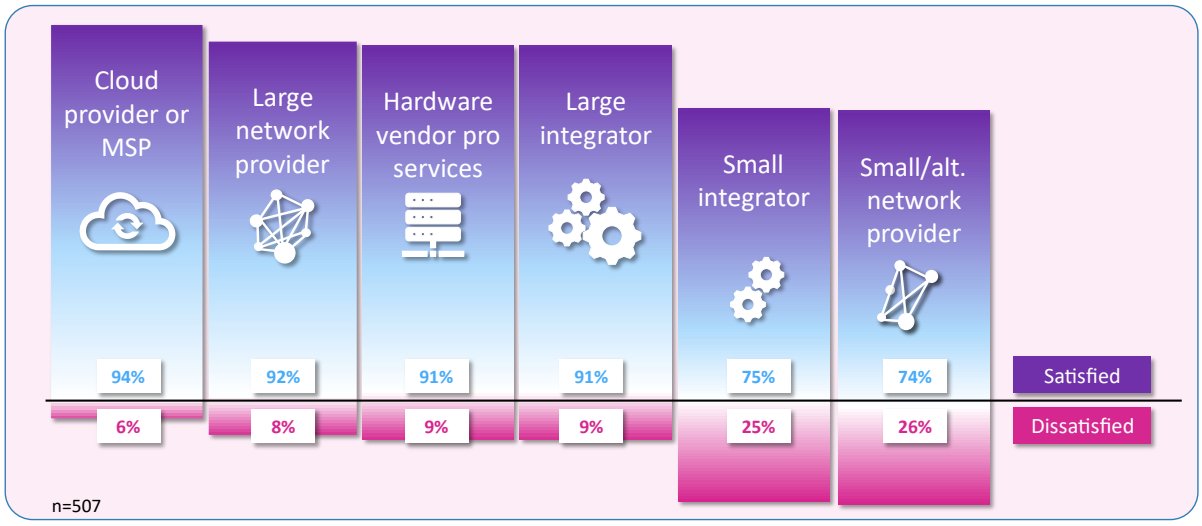
SD-enabling existing gear can add new features. But it is a big risk to assume the existing supplier is the best match for SD-WAN without vetting more options.

There are dozens of significant SD-WAN suppliers and platforms. An expert partner can help an enterprise assess its current state of the network and set a desired end state. The partner can account for existing partner relationships and preferences. A consulting engagement can map requirements against the universe of SD-WAN options and recommend best matches.

Large service providers offering SD-WAN also curate platforms and services. Most major providers now have several SD-WAN platforms they fully support, and more they work with. A preferred service provider should offer SD-WAN platform choices. Each SD-WAN platform addresses a different set of enterprise priorities.

4: Failure to select an adequately resourced partner

Figure 4: Small partners are less well suited to meet larger enterprises' needs



Source: Omdia

Virtually no enterprise fully "goes it alone" in SD-WAN. Enterprises turn to partners at various stages. Partners help reduce risk. They may help with SD-WAN selection, design, and deployment; host and maintain the SD controller; break/fix, patch and update hardware and software; and assure platforms are secured. Then there are conventional managed services that monitor the state of the network, make recommendations, and change configurations.

Enterprises use service partners where and when they need them. Where they use partners is important, as is who they select as their primary partner.

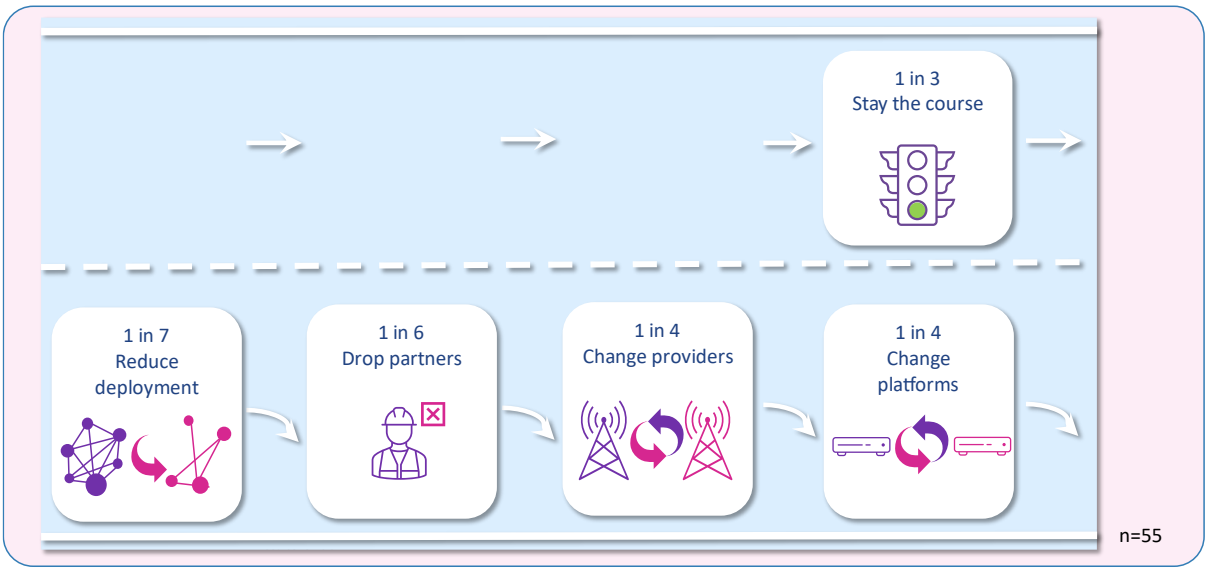
Large enterprises are most satisfied when they work with big network and managed services providers. They run into problems more often when their lead managed services partner is a small national or regional integrator, IT services provider, consulting firm, or alternative carrier.

Small regional and national providers lack reach, resources, and expertise. SD-WAN technology crosses categories – it spans from transport to network to applications; from routing to network optimization to security; from headquarters, branch offices, and remote workers to data centers and clouds. Enterprise SD-WAN issues can be complex. A partner with a shallow pool of expertise will fall short.

If enterprise IT executives do not get enough attention from the biggest global telco or integrator, they can look to a sweet spot of partners large enough to have global reach and deep expertise, while still offering them personalized attention.

5: Failure to consider hidden surprises

Figure 5: When the SD-WAN deployment is off track, most enterprises assess and respond calmly



Source: Omdia

Omdia's executive enterprise interviews find that happy customers with successful SD-WAN deployments still run into problems. One organization found its SD-WAN failed significantly to improve performance. Another organization eventually found its SD-WAN cutover accidentally squelched a critical background application. Yet another organization – in a common experience for large-scale network transformation – fought glitches in its all-new equipment and service stack that included SD-WAN, which delayed rollout by weeks.

SD-WAN migration often uses new gear involving site hardware swaps and cabling changes. The upgrade sets up performance and security policies for application traffic. It may cross-map policies into network layer tagging. Migration may also mean swapping network services and providers: MPLS to internet, dedicated to broadband, provider A to provider B. A network transformation involving SD-WAN often has many moving parts. As if the new deployment is not complicated enough, hidden network ghosts and long-forgotten issues will resurface during migration.

When the SD-WAN migration runs into problems, enterprise executives need to evaluate their options. In about one-third of bad outcomes, enterprises decide that staying the course – fixing what they already have – is best. For about half of bad outcomes, enterprises reevaluate their platform and/or service provider partner choices to make corrections. Swapping out bad elements after deployment may be difficult and costly, but necessary.

When something goes wrong, it is critical for enterprises to have an expert SD-WAN service partner they can turn to for help. Even if the partner was not involved in SD-WAN planning, it can still step in, assess the situation, jointly develop, and help execute a rescue plan. Omdia has found that enterprise executives change course but keep focus on the potential of SD-WAN to their business. Once troubles are corrected, the technology will deliver on its promises.

SD-WAN delivers by avoiding common errors

Enterprises are most likely to experience SD-WAN success and avoid bad outcomes by taking the following steps:

- Plan with, or review plans with, an expert partner in advance
- Limit network service partners; avoid letting every branch office make unguided choices
- Explore multiple vendors and platforms before committing
- Select a lead partner with adequate resources
- Don’t panic when issues arise – assess, research, and resolve.

Most enterprise SD-WAN deployments go well. More than two-thirds of enterprises have a good experience. Few deployments have a bad outcome when enterprise decision-makers look and plan ahead. Enterprise IT executives tell a common story of how proper research, preparation, and partnering leads to positive SD-WAN experiences. Good choices beat snags and surprises unearthed during and after deployment.

SD-WAN is not just another router or firewall upgrade. Centralized SD-WAN management handles network and security, but also manages application policies and dynamic changes. For enterprises, SD-WAN fundamentally shifts the focus away from networking as a standalone role. It is moving to a view where network, cloud, and security all fit together to support the business and its applications. Enterprises need to not just get on board with SD-WAN but start off on the right foot by recognizing and avoiding the mistakes of the past.

About Tata Communications

Tata Communications IZO™ SDWAN enables enterprises to manage a secure network transformation through a unified customer experience platform. It helps enterprises realize the value of a successful SDWAN deployment through a secure and fast deployment methodology. IZO™ SDWAN brings together innovative networking technologies from best-in-class vendors along with multi-domain (Network, Cloud, Security) expertise across value-driven assessment, automation-led delivery, and AI-assisted assurance.

For more information on IZO™ SDWAN, please visit: https://www.tatacommunications.com/solutions/network/cloud-ready-networks/izo-sdwan/

Appendix

Methodology

Data presented in this document is based on Omdia's Global Enterprise Network Services Insights surveys of IT executives at large enterprises, conducted every 18–24 months. Additional observations are based on in-depth, qualitative interviews that Omdia analysts regularly conduct with global IT executives at large enterprises.

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We create business advantage for our customers by providing actionable insight to support business planning, product development, and go-to-market initiatives.

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