Evolution to SD-WAN 3.0

The next phase of network transformation

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Contents

SD-WAN turns ten, and enterprises are expecting more

If your organisation is like most, your first software-defined wide area network (SD-WAN) deployment is now several years old. Software-defined platforms have become commonplace, so it is likely that you have several active solutions. They may operate alongside cloud-based security elements, which have been rebranded as security service edge (SSE). You might even have started evaluating evolution paths to secure access service edge (SASE).

Our modern era of SD-WAN has been running for ten years. The capabilities and potential of SD-WAN have evolved over the past decade. In the early days, enterprises purchased SD-WAN as a cost-effective replacement for ageing enterprise IP routers. SD-WAN also promised better network control through application-based policies and centralised management. This phase, now known as SD-WAN 1.0, is in the past, and many of these first-generation deployments are nearing the end of their contracts.

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> In the past, SD-WAN was a cost-effective replacement for aging enterprise IP routers.
> "

In the current generation of SD-WAN, enterprises expect more than just a router or firewall replacement. Our present phase, known as SD-WAN 2.0, has improved the handling of application policies, security, monitoring, and management. Over the last ten years, SD-WAN has evolved, and as enterprises fully harness SD-WAN benefits, they will reach SD-WAN 3.0 (**Figure 1**).

Figure 1: Evolution of SD-WAN

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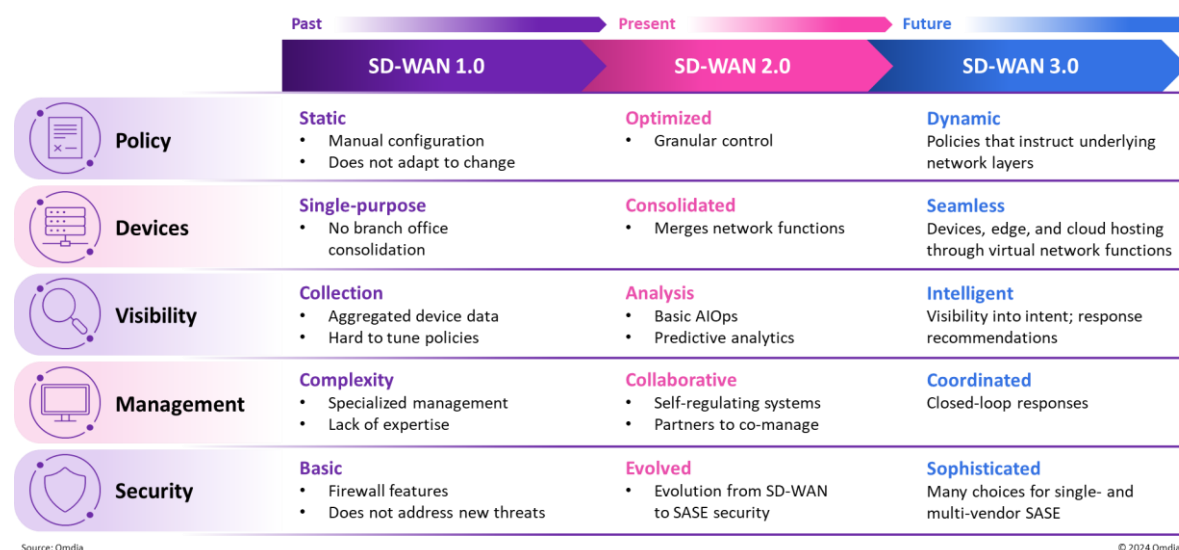
Too many SD-WAN adopters are still stuck with their past purchasing decisions. While those decisions were correct at the time, the platforms have since evolved. Additionally, the SD-WAN vendor landscape and enterprise expectations have fundamentally changed.

> **"Buying decisions made years ago are now outdated and are holding back adopters."**

When enterprises deployed SD-WAN 1.0, they just wanted improvements over IP routers. However, SD-WAN 2.0 needed to be more versatile to drive a better range of outcomes, including complex security, real-time network visibility, policy automation, virtual functions, hybrid working, and hosted cloud-based gateways. With SD-WAN 2.0, network views should include data analytics, alerts, and recommendations. Traffic routing policies need to function correctly for every possible combination of access. SASE should introduce a new set of cloud security features in a fully coordinated manner that is powerful yet easy to use. SD-WAN 3.0 pulls together all the pieces under intelligent, smooth coordination that meets enterprises' business objectives (**Figure 2**).

Figure 2: As SD-WAN evolves, the volume of platform features continuous to grow

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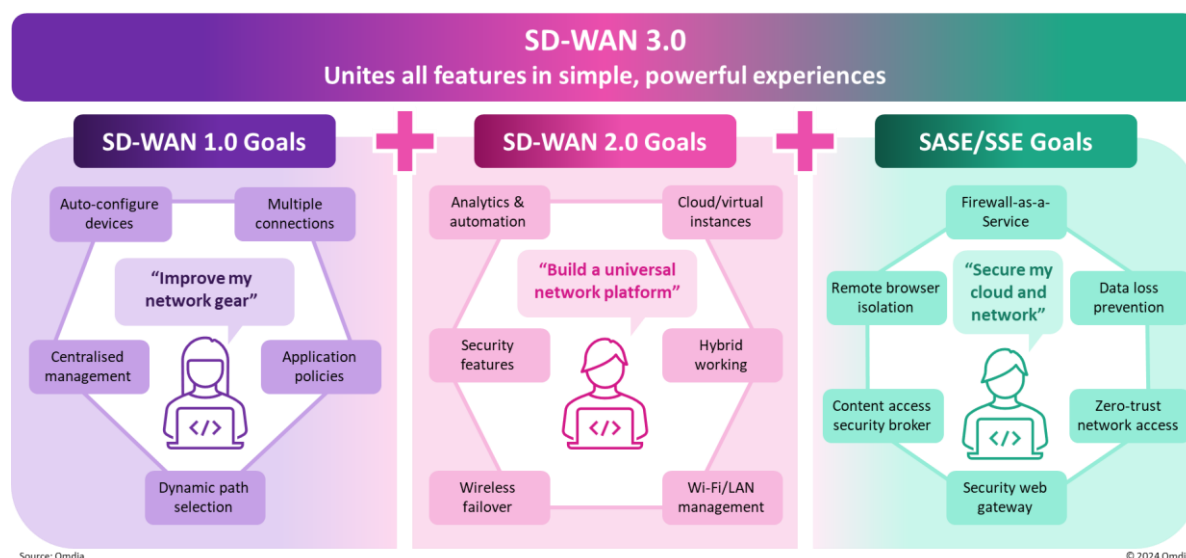
SD-WAN keeps becoming more powerful and versatile, but enterprises face a disconnect. They have kept their legacy SD-WAN choices but expect new outcomes from their old SD-WAN configuration. This is not a technology problem; it is a process and resource problem. For example:

- The SD-WAN platform may now support policy automation. However, the enterprise does not use this feature because network administrators are still following an IP router-centric policy approach.

- The SD-WAN platform may have added dynamic bandwidth support. However, the enterprise cannot use this feature because it is still tied to a static network contract.

- The enterprise introduces line-of-business applications with new performance requirements. However, the existing SD-WAN network design does not support these new applications.

The issues are not the fault of the enterprise IT department, and there are other more pressing priorities. However, there is a consequence; as the gap between legacy SD-WAN decisions and modern expectations increases, satisfaction decreases. In 2020, the ratio of net enterprise buyer sentiment to recommend SD-WAN (a measure of promoters vs. detractors) was at -8. In 2022, buyer sentiment reached breakeven. For 2024, buyer sentiment has dropped to -12.
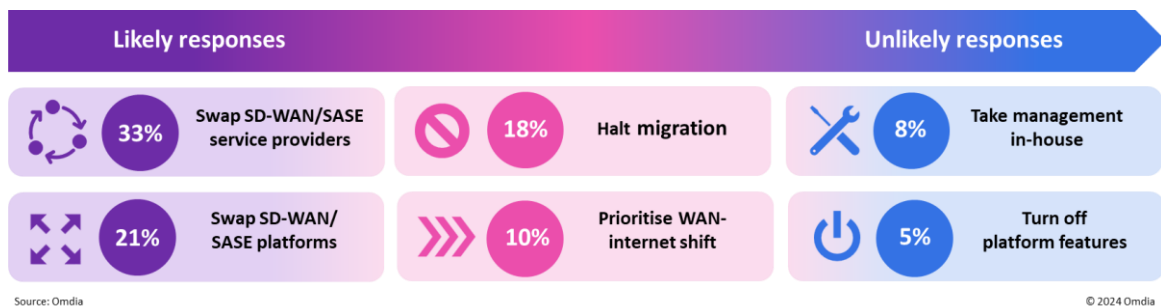
The dip in satisfaction is not surprising, as enterprises strive to keep up with their existing SD-enabled platforms, each with its own fast-changing set of features. Additionally, there are conflicting market messages about SSE and SASE, where incumbents and new players are competing for attention. The industry is progressing to a powerful vision of SD-WAN 3.0; but for an enterprise trying to develop a network strategy today, the situation is becoming more confusing and complicated.

Enterprises are pushing for better SD-WAN experiences

When enterprises started using SD-WAN years ago, their expectations were different. Enterprises that were dissatisfied with their initial SD-WAN experience were willing to stick with their chosen partner and work with them to resolve the issues. SD-WAN was new, and enterprises had the patience to get the deployment up and running properly.

Now, those SD-WAN adopters are out of patience. If their existing SD-WAN no longer delivers to rising expectations, they are ready to swap out partners to get the outcomes they want (**Figure 3**).

Figure 3: Enterprises unhappy with SD-WAN want change; partners are in the crosshairs

Likely responses — Unlikely responses

33% Swap SD-WAN/SASE service providers	18% Halt migration	8% Take management in-house
21% Swap SD-WAN/SASE platforms	10% Prioritise WAN-internet shift	5% Turn off platform features

Source: Omdia

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Enterprises fail to reassess the full scope of their SD-WAN design choices

In the last two years, there has been a steep decline in the number of enterprises seeking assistance from partners for SD-WAN design and planning. As of 2022, approximately half of enterprise SD-WAN adopters (46–51%) still relied on external partners to help assess, design, and deploy their SD-WAN, as some enterprises were still in their first major SD-WAN foray.

By now, most large enterprises have an SD-WAN installed base. They have made their platform decisions and configuration decisions. The ratio of SD-WAN adopters engaging an external partner to assess, design, or deploy has dropped from one-half to one-third (33%) among large enterprises, with many of these being first-time deployments. However, bringing in a service partner to review, reassess, and redesign has a major positive impact on satisfaction because it leads to better business outcomes in ongoing digital transformation.

SD-WAN differs from IP routers or firewalls. Each of them handles IP traffic differently, and network administrators must adjust their processes to the SD-WAN platform. The platform evolution is also different. The working lifespan of an enterprise router or firewall is around five years. Besides regular updates, the core functions of a router or firewall do not change over the equipment's lifetime. SD-WAN vendors issue two to four major releases each year, introducing new network features and security capabilities. However, the enterprise has boxed itself into an SD-WAN 1.0 frame of mind, even as the partner platform supports SD-WAN 2.0 and is evolving to SD-WAN 3.0. Harnessing the new SD-WAN features requires an overhaul of the enterprise's past network design decisions.

The most impactful action an enterprise can take to improve SD-WAN outcomes is to engage a partner to reassess the deployment. A redesign can optimise the SD-WAN configuration and implement the latest key features. A partner can advise the SD-WAN adopter if transitioning to an SD-WAN/SASE platform would better align with the enterprise's current business needs.

Enterprises are more satisfied when they engage a partner to assist with SD-WAN/SASE assessment, design, and deployment, along with other managed services that they need. They are also more satisfied when they work with a leading telco partner. Telcos consistently rank higher than other providers in terms of overall enterprise satisfaction, providing network transformation services. They surpass system integrators (SIs), vendors, cloud providers, and managed service providers (MSPs).

In 2024, enterprise customer sentiment on SD-WAN from large telco partners remained strong. However, for the six largest global telcos that sentiment has fallen. Those few largest telcos in recent years have retrenched their global operations to re-focus on domestic markets.

All partners, however, fare better than enterprises that decide to deploy and manage their SD-WAN completely in-house. The do-it-all-yourself approach is a recipe for dissatisfaction (**Figure 4**).

Figure 4: Having a partner involved in enterprise SD-WAN planning impacts the outcome significantly
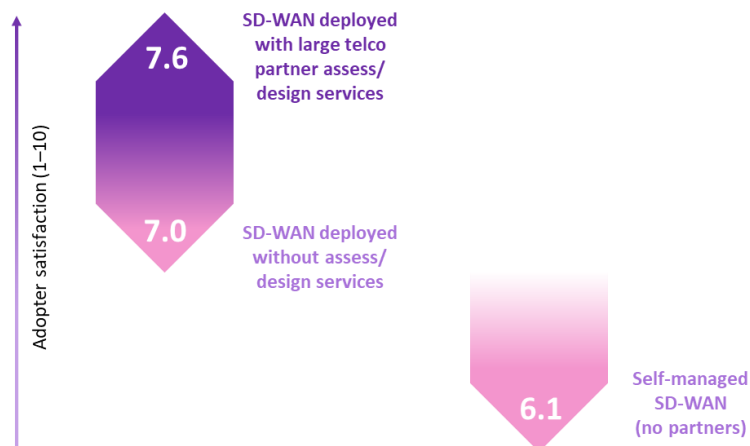
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The interdependence of SD-WAN with other enterprise initiatives

SD-WAN benefits from a strong network foundation. Telcos are ranked highly as lead SD-WAN partners because they are positioned uniquely to consolidate networks, attach virtual functions, and make SD-WAN part of a wider enterprise network transformation. Enterprises connect SD-WAN with internet migration, network-as-a-service (NaaS) contracts, and cloud and multi-cloud connectivity.

Besides working with a design and planning partner for SD-WAN, there are two sourcing decisions enterprises can make that have a positive impact on their network transformation plans. The first, as noted, is appointing a telco as lead partner. The second option is consolidating the network with one or a few key partners.

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> Enterprises are highly satisfied with telco partners for SD-WAN because of their network expertise.
> "

Enterprises experience positive results when they choose a lead telco partner and consolidate their network buying (**Figure 5**). The only exception is in cloud connectivity and multi-cloud, partner choice did not matter. This is because all partners can improve the enterprise network position by adding high-performance cloud connectivity.

For these enterprises, Cloud Connect is a bright spot in a difficult environment. In comparison, when an enterprise uses a consolidated network led by a telco, Cloud Connect provides a better experience. However, it may not stand out as much because the network is already well-tuned and effectively managed overall.

Figure 5: Enterprises consolidating under a telco partner have better network outcomes

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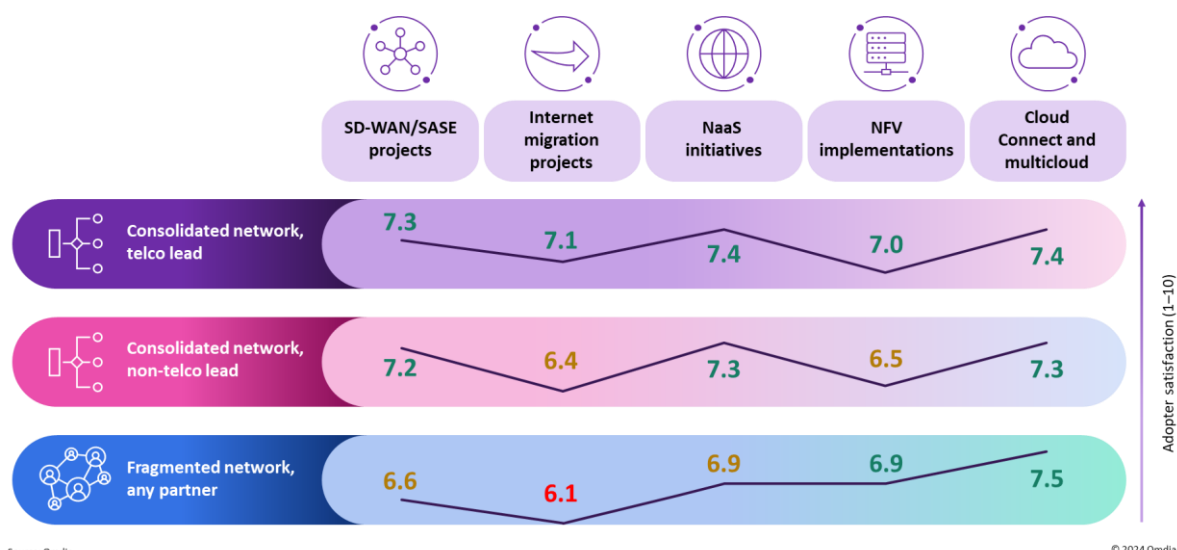
Recognising the value of enterprise SD-WAN services

So far, we have measured the positive and negative outcomes based on the satisfaction of enterprise decision-makers with the solutions. There is another aspect of success, which is the value gained. Enterprises recognise value through metrics that include lower costs, time and efficiency savings, improved performance (increasing transactions and improving user experiences), higher productivity, and less downtime. Some enterprise adopters are satisfied with their SD-WAN but gained little net new value; others are dissatisfied with their SD-WAN even though it brought solid returns.

SD-WAN adopters who consolidate the network around fewer suppliers and appoint a large telco as the lead partner reap both benefits: Increased satisfaction from enterprise decision-makers and more value from the solution.

There are significant differences between low- and high-value SD-WAN/SASE deployments. High-value deployments have tightly focused goals, and SD-WAN is part of their toolkit for network transformation. Low-value SD-WAN/SASE deployments focus on technology for its own sake, lacking clear direction and focus (**Figure 6**).

Figure 6: How enterprises succeed or fail to gain value from their SD-WAN deployment
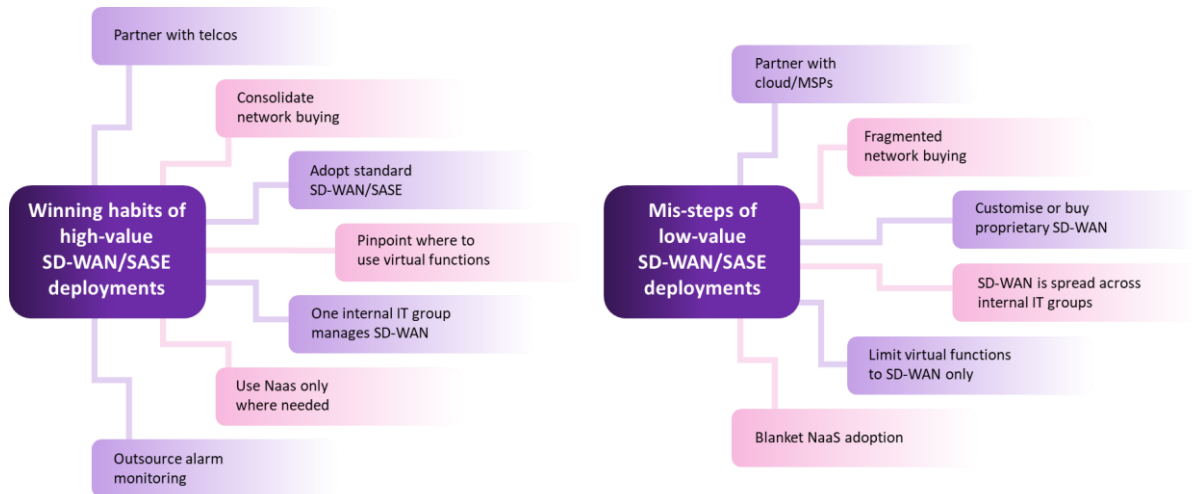
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Enterprises with high-value deployments have targeted network transformation plans. These SD-WAN/SASE adopters choose specific service partners and platforms. They are intentional about what virtual network functions they use, and where to deploy them. They are just as tactical about where they use NaaS connectivity. While these enterprises may use any managed services, they usually work with a partner for alarm detection and notification, and for trouble management.

Enterprises with low-value deployments lack well-defined goals. They have a general interest in adopting new technology, so they are more likely to buy innovative but proprietary services. In some cases, they create their own SASE. They see NFV only as a tool to extend SD-WAN/SASE. Enterprises that adopt NFV just for virtual SD-WAN experience poor outcomes: NFV satisfaction in this segment drops to 5.2 out of 10. This contrasts with enterprises with a diverse NFV strategy (using three or more types of NFV functions), which have a 7.2 out of 10 satisfaction rating for their NFV deployments. Low-value deployments also use blanket deployments of NaaS, lacking focus. These factors combined lead to lower value and satisfaction with SD-WAN/SASE.

Next steps: SASE/SSE triggers revisit of SD-WAN choices

SD-WAN platforms evolve continuously. This is how the industry has progressed from SD-WAN 1.0 IP router replacement to the versatility of SD-WAN 2.0; and how it is developing new levels of network intelligence and coordination as SD-WAN 3.0.

For the enterprise, it is always a good idea to return to past design choices and see how platforms–and circumstances – have changed. The rise of SASE and SSE makes it even more urgent for enterprises to re-visit connectivity and security. There are four primary enterprise routes from SD-WAN to SASE:

- **Single-vendor/single-platform SASE implementation:** The enterprise chooses one core partner and aligns internal operations to unify the network, cloud, and security. This is a powerful value proposition, and early adopters have high overall satisfaction. But whittling down IT operations to one core platform needs internal IT stakeholders to agree to a radical shift in approach.

- **Single-vendor/single-platform SD-WAN and security implementation:** The enterprise leverages the SD-WAN platform's security features without a grand strategy to unify network, cloud, and security operations. The individual IT stakeholders remain separate. Adopters of this approach have mixed satisfaction, but it is easier to achieve than fully unified operations.

- **Multi-vendor SD-WAN and SSE implementation:** The enterprise combines its existing SD-WAN platform with SSE cloud-based security from other vendor(s). Enterprises that take this route are moderately satisfied. Bolting cloud security onto SD-WAN is readily achievable. Many enterprises taking this route plan to upgrade to a single-platform solution.

- **Multi-platform SD-WAN and security implementation**: The enterprise collects the ingredients for SASE separately, usually a result of many smaller tactical buying decisions. Most enterprises are unhappy with the results. Enterprises on this track want to shift to any of the above, more coherent models.

The road to SD-WAN 3.0 winds alongside many possible combinations of SSE and SASE. Enterprises engaging in digital and business transformation need connectivity and services to match their ambitions. Enterprises that deployed their first SD-WAN a few years ago will benefit from bringing in an expert partner to help them review and reassess and, if necessary, redesign the network. A partner can help guide and improve enterprise SD-WAN and network operations and help prepare the business for the future.

Starting the SD-WAN/SASE executive approval process

Your internal review may find the network badly needs change. Funding for these projects typically require corporate approval. Here is a checklist of recommendations to approach such a request:

1) Arm with operational facts. Collect data on traffic volumes and quality issues over time.

☐ Collect statistics such as increases in applications and traffic; rising latency or packet loss; more failed transactions or lower user satisfaction; and increases in IT time logged on network issues.

☐ Collect network security metrics such as increases in attack volume and intensity.

2) Get supervisor buy-in based on the evidence.

☐ The evidence should show that factors such as quality of service, quality of experience, efficiency and/or security have deteriorated, and that the enterprise network is a factor.

3) With internal approval, engage with SD-WAN service providers.

☐ Partner discussions should include the incumbent supplier and at least one alternative to offer a second opinion how best to address the enterprise's changing metrics.

☐ Have partners help estimate the cost-benefit of change, such as TCO and ROI. They may also help estimate options such as re-configuring the existing SD-WAN vs. moving to a new platform.

4) Compile the findings and send them up the corporate chain.

☐ A request for resources needs to include the benefits of change, such as better service quality, fewer service issues, less IT resources, high-value new features, and direct/indirect reduced costs.

5) Follow the organisation's internal process, as it takes over.

☐ Advocates inside the business may help guide the request, or they may take over the RFI/RFP process. Decision-making may fall back to your department or move to finance or procurement.

☐ Final approval often involves chief executive officers (CXOs) including finance and security. These executives need assurance there will be measurable improvements in cost, quality, and/or value.

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