
BRIEF

aruba
a Hewlett Packard
Enterprise company

UNDERSTANDING THE BUSINESS VALUE AND FINANCIAL IMPACT OF SD-WAN



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Customer Value Assessment provides rich analysis of common challenges of traditional router-centric networks and compelling justification for a business-driven WAN architecture

INTRODUCTION

Aruba is in the business of building secure, self-driving wide area networks (SD-WANs) for our enterprise customers. We know our SD-WAN solutions provide organizations of all sizes and industries with great value. But how do we measure that value, and assure customers of getting a real return on their investment? The answer is with a Customer Value Assessment — a detailed evaluation of an organization's strategic and operational rationale for investing in a next-generation network like an SD-WAN.

A Customer Value Assessment answers three basic questions:

1. Why should I invest in SD-WAN?
2. Why should I partner with Aruba for SD-WAN?
3. Why is now the right time for SD-WAN in my organization?

The assessment includes a full analysis of operational and financial benefits, including return on investment (ROI) calculated by year. This analysis enables decision influencers and decision makers to determine — based on hard numbers — where and when an investment in SD-WAN makes sound business sense.

Reasons to perform a Customer Value Assessment

When does it make sense to perform a Customer Value Assessment?

- When presenting the business case to C-level executives— the Customer Value Assessment provides compelling evidence of the business value and long-term financial benefits of deploying the **Aruba EdgeConnect** SD-WAN edge platform acquired from Silver Peak
- When budget allocations are needed — the Customer Value Assessment helps network teams justify budget for modernizing the wide area network (WAN) edge
- When evaluating multiple vendors — the Customer Value Assessment will present in plain language and with substantiated metrics how Aruba is differentiated from other vendors

The Customer Value Assessment is a complimentary consultancy service that Aruba offers our prospects to help them build the business case for SD-WAN and measure the return on their investment.

CUSTOMER VALUE ASSESSMENT — A REAL-WORLD EXAMPLE

A recent Customer Value Assessment produced for a leading distributor in the food industry showed the dramatic impact of SD-WAN on this company's business. The following summarizes the identified business issues for this customer, the proposed solution, and projected financial impact of implementing the SD-WAN solution.

Business situation

This customer relied on expensive low-bandwidth leased line MPLS WAN circuits, with some links fully saturated as bandwidth needs continued to increase due to business growth. The previous WAN architecture was also complex and difficult to manage, and much of the network equipment was near end of life, which greatly limited agility to adopt cloud platforms and software-as-a-service (SaaS) applications. Moreover, the company lacked network visibility, limiting operational efficiency in resolving issues.

How Aruba helps

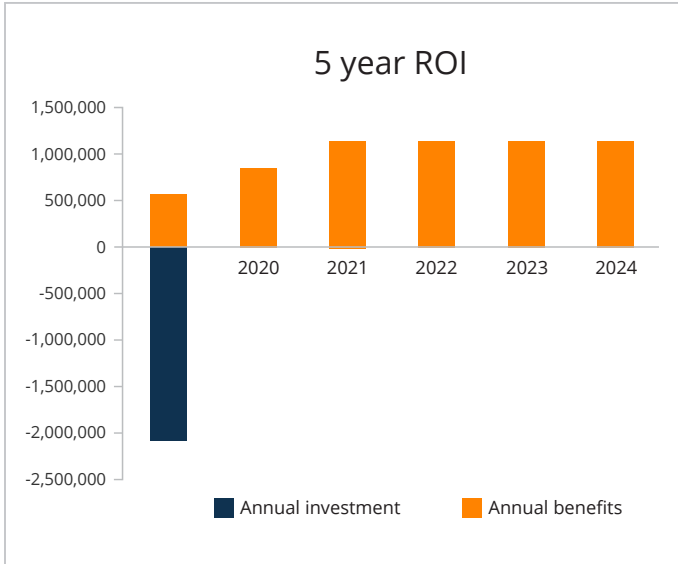
The Aruba EdgeConnect SD-WAN edge platform will provide the customer with the flexibility to replace MPLS with lower-cost, higher-throughput broadband connectivity and actively use all available links, increasing available bandwidth and improving application performance. The Aruba EdgeConnect platform will also simplify the WAN edge, improving operational efficiency while enabling greater agility to break out locally to SaaS applications and public cloud platforms. In addition, granular analytics and heat maps will enable a tiered support structure and reduce the time and cost of servicing tickets.

Financial and operational impact delivered by Aruba

By deploying the Aruba EdgeConnect platform, the Customer Value Assessment projected financial benefits of \$1.15 million per year, plus another \$109,000 in one-time benefits. The projected five-year net present value (NPV) was calculated to be \$2.6 million with a payback of 1.5 years, and a three-month cost of delay of \$64,000 (\$21,000 per month of avoidable spend as a result of not taking any action on the business situation).

The three main value drivers impacted by the Aruba solution were:

- Reduction in network transport costs by adopting consumer broadband over MPLS
- Reduction in hardware costs via WAN simplification
- Reduction in IT network admin costs through fewer tickets and less firefighting



Key operational value points impacting this customer include:

- Zero-touch provisioning
- Dynamic path control
- Path conditioning
- WAN hardening with 256-bit encryption
- Cloud intelligence for best path to SaaS
- Automated business intent policies
- Visibility into legacy and cloud applications through single pane of glass
- Latency mitigation and data reduction

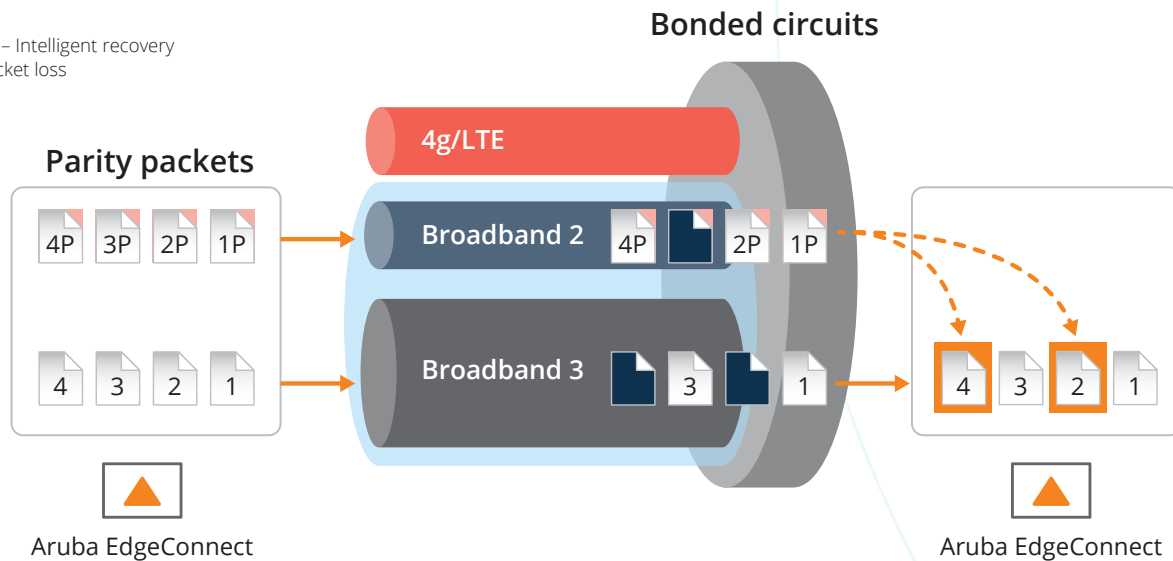
These advanced features bring operational advantages such as performance consistency to meet application service level agreements (SLAs) and simplified management with automation to define, provision, and orchestrate business-driven application policies. This food industry distributor also benefits from a self-healing network where all available paths are constantly monitored to steer traffic dynamically across the best path, proactively addressing potential congestion and eliminating help desk tickets.

Ultimately, the Customer Value Assessment proved to this customer how the Aruba SD-WAN transforms the business with a business-first networking model, freeing the company from the constraints of a router-centric approach, and making the WAN a business enabler.

The Customer Value Assessment also detailed how the Aruba EdgeConnect platform could assure this food industry distributor of delivering predictable performance over any link through greater reliability of packet delivery. In fact, advanced features like forward error correction (FEC) can sustain the loss of packets, ensuring a high quality of experience over broadband that’s as good as, if not better than, MPLS. (Figure 1)

One of the key advantages of the Aruba EdgeConnect platform for this customer, and any large enterprise, is that it provides SD-WAN, routing interoperability, a stateful zone-based firewall and optional WAN optimization — all in a single, centrally managed unified WAN edge platform.

Figure 1 – Intelligent recovery from packet loss



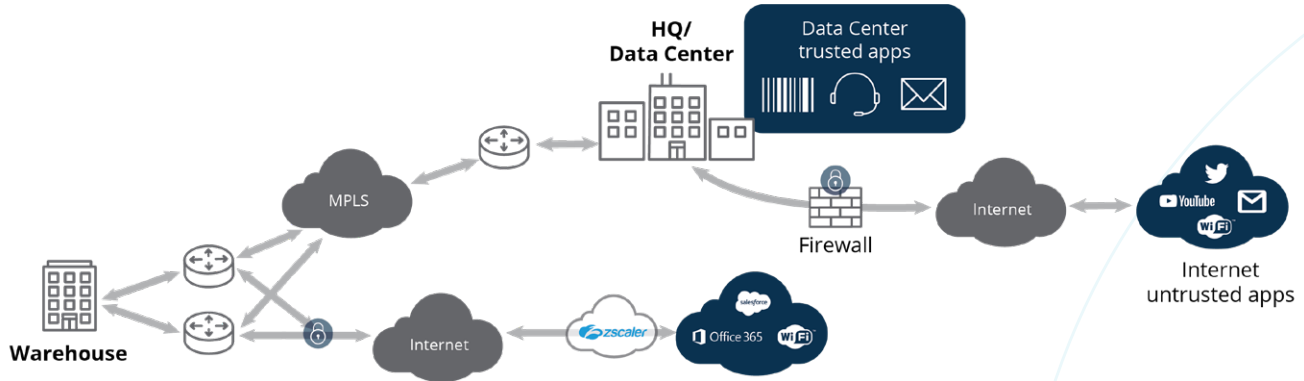


Figure 2 – Router-centric MPLS network

FOOD INDUSTRY CASE EXAMPLE — A DEEPER DIVE

This food distribution company had a conventional, router-centric WAN architecture, using MPLS as its primary links with manual failover to a dynamic multipoint virtual private network (DMVPN) backup. This network provided connectivity from the company’s warehouses to a central data center, and out to SaaS applications and the internet. (Figure 2)

On the surface, the company’s network appears to be perfectly suitable. However, what would happen in the event of an MPLS outage on any one of the circuits? The legacy network had no resiliency or automated failover built in, so most users in branch locations would be unable to access the company’s business applications. This would quickly lead to lost productivity, and potentially, the inability to fulfill customer orders. Yet, building in resiliency by adding more circuits to a router-centric WAN only increases complexity

and administrative overhead. Plus it adds significant cost to an already expensive service.

Like many companies today, this customer is also moving workloads into public platform-as-a-service (PaaS) environments and adopting more SaaS applications. A traditional, router-centric WAN is simply not designed for these modern trends. Therefore, this company required a network with much more agility and resiliency, less complexity, and greater throughput to increase application performance and deliver a consistent, high-quality user experience.

Addressing business issues with SD-WAN enablers

The Aruba Customer Value Assessment broke down the company’s business issues into six key areas, mapped to SD-WAN enablers that would address the issues in each area. Table 1 summarizes this analysis.

BUSINESS AREA	ISSUES	ENABLERS
Circuit costs	Dependent on MPLS at > 6X the cost of broadband	SD-WAN that meets performance SLAs on consumer broadband
Architecture	Complexity of multiple devices for routing, security, WAN Opt, etc.	Single edge appliance unifies SD-WAN, routing, firewall, and WAN Opt.
Automation & agility	60 – 90 days to deliver circuits; no proactive issue resolution; high MTR for network troubleshooting	Zero-touch provisioning; self-healing network; single dashboard to enable tiered support
Visibility	Limited visibility causes reactive vs. proactive management; unable to right-size bandwidth	Robust tools to gain real-time view of bandwidth utilization and application performance
Cloud	Network designed for on-premises applications; latency issues accessing PaaS and SaaS	SD-WAN architecture delivers consistent application performance on premises and in cloud
Reliability	Fair level of carrier diversity but at a high premium	Broad internet diversity at lower cost

Table 1 – Business issues and SD-WAN enablers



Reducing MPLS dependency and costs

At this food distribution company, its costly MPLS circuits were almost fully saturated with bandwidth requirements, which were continuing to increase due to business growth. Moreover, MPLS circuit costs were increasing as the company added links to achieve redundancy, which pushed the cost to greater than six times the cost per Mbps of that for commercial broadband.

Aruba addresses these challenges with SD-WAN capabilities that enable the customer to replace expensive MPLS circuits with commercial broadband with assurance of achieving performance consistency that meets SLA requirements. Aruba maximizes application performance on broadband using techniques such as FEC, intelligent traffic steering across optimal paths, business intent overlays to prioritize applications based on business need and application requirements, and on-demand WAN optimization to reduce latency and compress traffic for improved application performance.

Simplifying the WAN architecture

The company's router-centric architecture was expensive and complex, requiring multiple devices and extensive integration. Complicating matters, the legacy network hardware was approaching end of life, and in some cases, was no longer supported. This aging infrastructure was responsible for many of the network issues, including inefficient application management and provisioning, and difficulty maintaining security and policy enforcement across all applications.

Aruba answers these challenges with the Aruba EdgeConnect SD-WAN edge platform, which unifies SD-WAN, firewall, segmentation, routing, WAN optimization and application visibility and control in a single platform. Aruba also has strong partnerships with Zscaler, Check Point and Netskope to automate orchestration to cloud-based next-generation security services for additional Layer 7 traffic inspection. With Aruba, the entire SD-WAN infrastructure can be centrally managed through a single interface, **Aruba Orchestrator**, simplifying configuration and provisioning, and automating application policies.

Enabling network automation

Due to a lack of tools, the customer had no tier 1 support to do simple triage. Consequently, network engineers (tier 3 support) were spending about 40 percent of their time on ticket handling. Standing up new sites was also slow, requiring about two weeks of dedicated engineering time. Limited visibility to overall network health also caused a reactive rather than proactive approach to management, with no automation to preventively resolve issues and avoid tickets. This resulted in a higher-than-necessary mean time to repair (MTTR) for network issues. Moreover, poor visibility made it difficult for the customer to determine if bandwidth was right-sized according to each site's peak and average utilization.

In contrast, Aruba provides a single management interface with Aruba Orchestrator, enabling global application visibility, real-time and historical reporting, WAN utilization and application performance monitoring, and QoS policy creation and management. True zero touch provisioning from Aruba enables the customer to stand up sites faster with no need for technical staff on site. The customer can use Aruba Orchestrator to build a fully self-healing network that constantly monitors all available paths and dynamically steers traffic, proactively eliminating tickets. In addition, the intuitive interface with auto-populated dashboards enables lower-skilled resources to perform simple checks and troubleshooting that previously required a more skilled engineer to perform manually, helping to reduce MTTR.

Modernizing the network for assured performance in the cloud

The food industry company's previous network was designed for applications and services hosted on premises in its enterprise data center. Circuit failover was disruptive and affected user productivity and revenue streams. The company had a fair amount of carrier diversity, but at a significant cost premium. With ongoing adoption of PaaS and SaaS, application performance would further suffer due to the high latency of backhauling cloud-destined traffic through its data center.



Moving to a business-driven Aruba SD-WAN, the customer gained a highly available WAN architecture with tunnel bonding and automated, sub-millisecond failover for high network reliability and assured application performance on premises and in the cloud. Aruba further assures high application performance by automatically detecting poor link performance and steering specific types of application traffic to optimal paths. With SD-WAN, the customer also has much greater diversity of internet providers, providing more resilience and flexibility.

Aruba SD-WAN solution

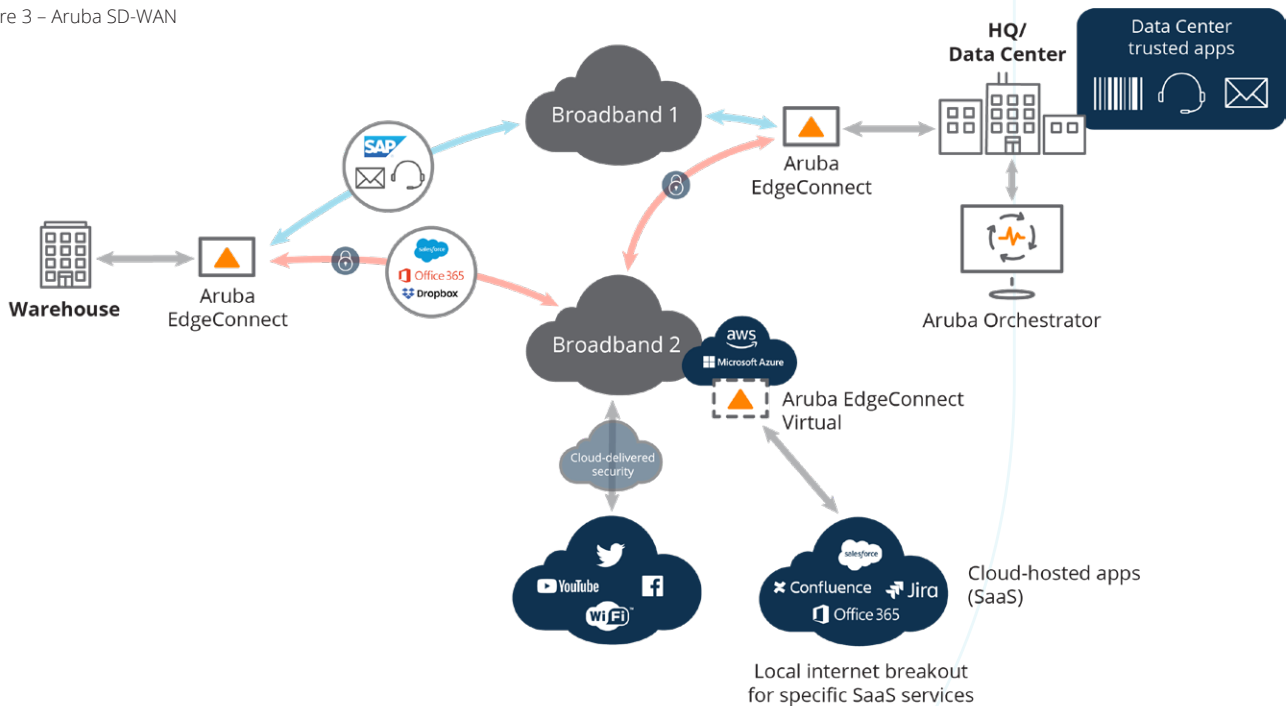
An SD-WAN from Aruba (Figure 3) enables the food industry company to achieve more resilient, higher-performing, and lower-cost access to trusted corporate applications than the previous router-centric WAN. It also makes accessing SaaS applications and PaaS environments much more efficient.

To build this SD-WAN, the customer first deployed the Aruba Orchestrator and Aruba EdgeConnect SD-WAN appliances. For this customer, the Aruba EdgeConnect

appliances are terminated with an MPLS link and a broadband link. The Aruba EdgeConnect appliances can be deployed to completely replace traditional edge routers. The ability for Aruba EdgeConnect to support a variety of flexible deployment configurations is an example of the product's maturity and is a key differentiator for Aruba.

With the appliances deployed and connected to the network, the Aruba Orchestrator automatically builds tunnels and pushes out pre-configured policies to the remote Aruba EdgeConnect appliances. In Figure 3, the lock icons denote the unified firewall features in Aruba EdgeConnect, which is being applied by policy to secure traffic. The company's trusted business applications, such as voice, video, and ERP traffic, traverse the MPLS link, while Aruba EdgeConnect enables local breakout directly to the internet. Deploying a virtual Aruba EdgeConnect appliance in a cloud-hosted environment such as Amazon Web Services (AWS) or Microsoft's Azure network, further extends the SD-WAN to thousands of SaaS applications, thus improving performance and control over that traffic.

Figure 3 – Aruba SD-WAN





Built-in resiliency and automated failover

Unlike the company’s previous network, the Aruba SD-WAN provides built-in network resiliency by enabling application traffic to traverse both the MPLS and broadband links simultaneously, and automatically failover from one to the other in less than a millisecond should one of the underlay links experience congestion or go down. To provide an additional level of resiliency, an LTE wireless network could also be added to the mix as another bandwidth option. Aruba Orchestrator path policies can be configured to use the LTE network during an outage. (Figure 4)

With the LTE option, during an outage, Aruba EdgeConnect will seamlessly re-route traffic to the LTE path and the users stay connected. Since the re-routing happens in less than a millisecond, it’s likely the end users will be completely unaware that a link outage has even occurred. This kind of configuration and real-time re-routing of traffic would have been very complex to configure and very expensive to implement in the legacy WAN. But with the Aruba SD-WAN it is fast, easy and economical.

Return on investment

In addition to detailing the operational benefits achievable with the Aruba SD-WAN, the Customer Value Assessment also produced dramatic financial benefits for this food industry company. As highlighted in the summary early in this document, the company should expect, as a conservative estimate, \$1.15 million in annual savings by adopting the proposed Aruba SD-WAN solution. Likely savings should be closer to \$1.62 million annually.

These numbers come from extensive research, using actual circuit costs from the customer, known costs from industry vendors, and information from the Aruba knowledgebase. In every Customer Value Assessment, the stakeholders are presented with all sources of data and assumptions so they can provide their own input and adjust the financial impact as necessary. This provides assurance to all parties that the financial figures are well substantiated and realistic.

Figure 4 – Built-in network resiliency

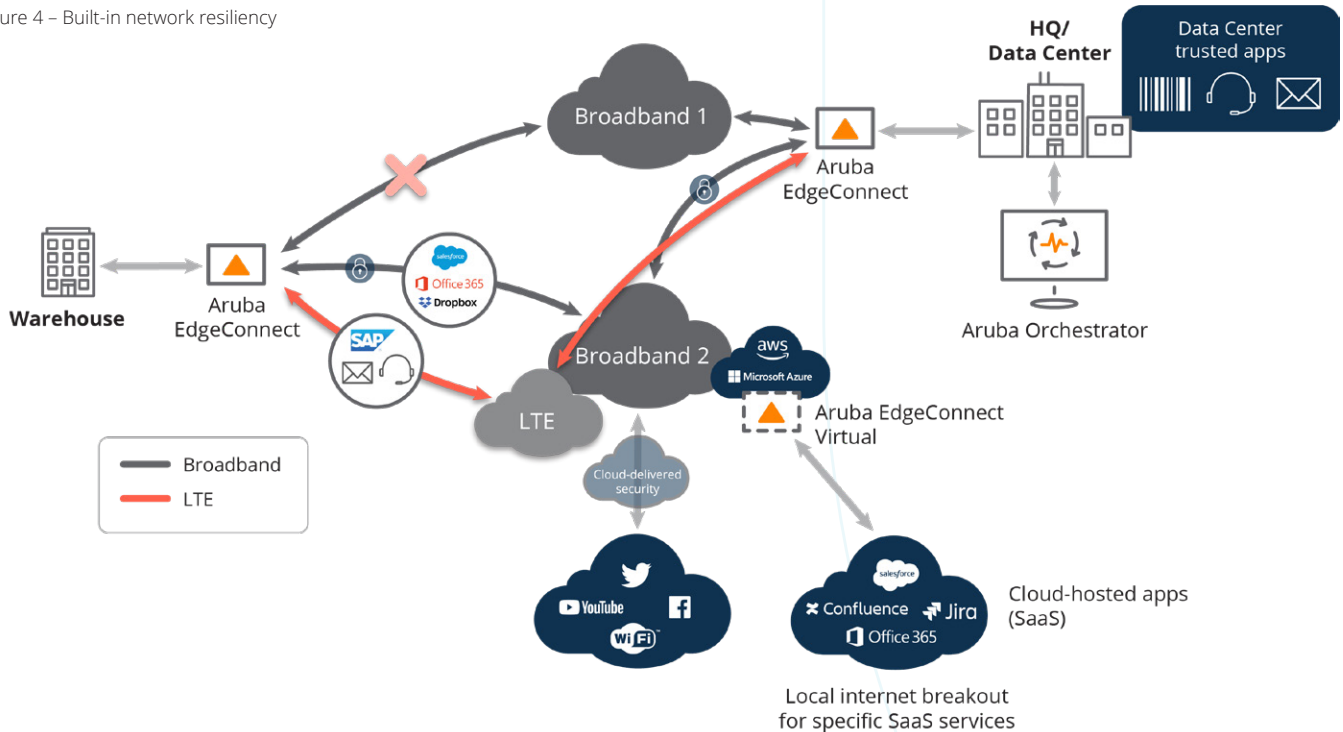




Table 2 provides an overview of the key value drivers for achieving the projected financial savings, including conservative and target estimates for potential improvement and value.

It's important to factor in that the Aruba SD-WAN solution for this customer not only reduced network transport, equipment, and network admin costs, but did so while also increasing available bandwidth substantially. Figure 5 illustrates this combined value.

CONCLUSION

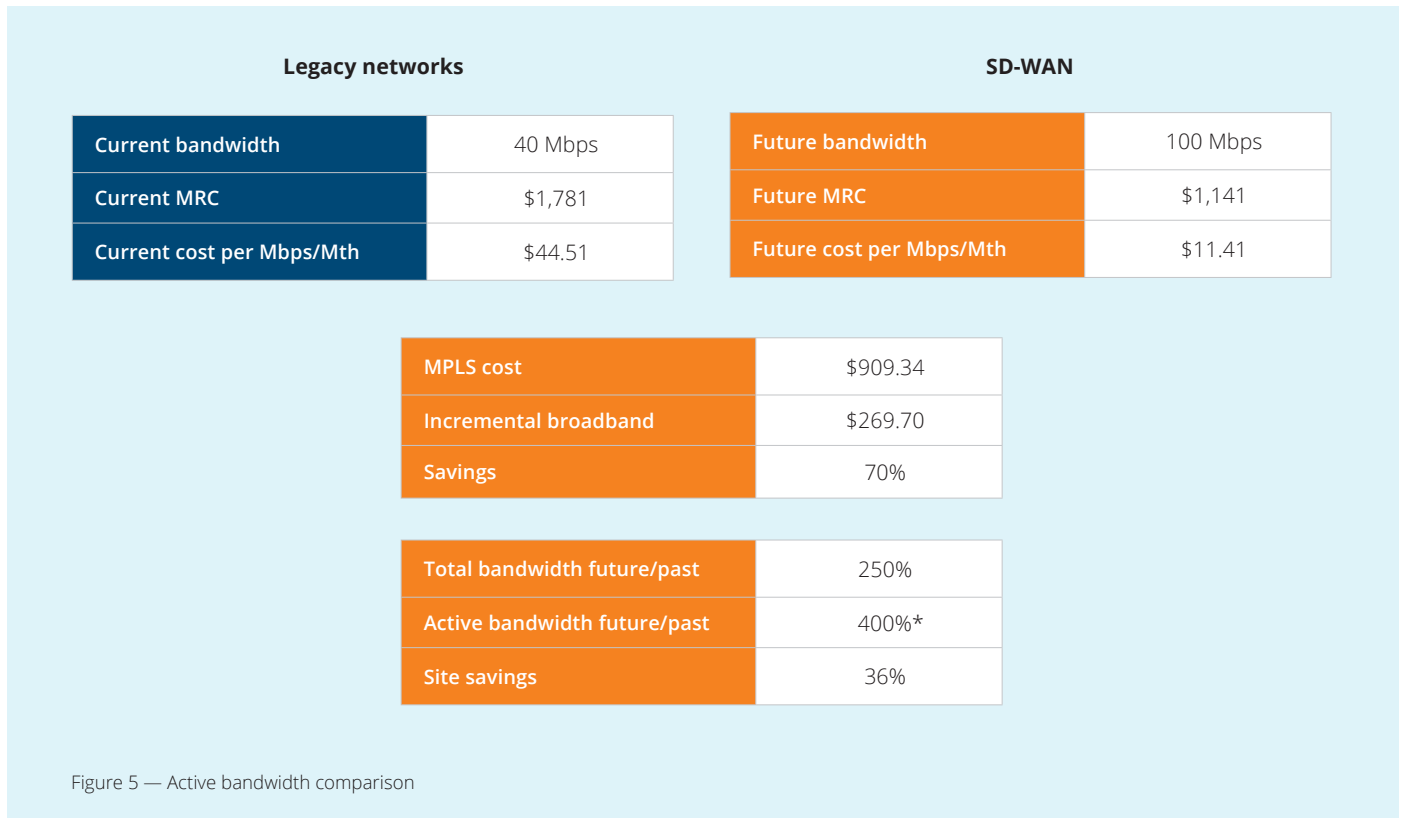
SD-WAN from Aruba provides compelling operational and financial benefits over traditional router-centric WAN architectures. The Customer Value Assessment performed for this representative customer in the food industry illustrates this point with clear, measurable fact-based evidence.

Additional findings from the Customer Value Assessment also point to strategic and differentiated benefits of the SD-WAN, which can be relevant to nearly any organization, not just the subject company of this Customer Value Assessment. For example, some strategic benefits include:

- **Increased carrier diversity** — due to greater diversity among broadband providers compared to MPLS carriers, and because more broadband links can be added at lower cost than MPLS
- **Reduced coordination costs** — Aruba facilitates easier communication and collaboration across multiple teams within an organization
- **Improved productivity** — less network downtime means end users can stay focused on their tasks without unexpected disruption and distraction

VALUE DRIVER	BASELINE	CONSERVATIVE		TARGET		ASSUMPTIONS
		Improvement	Value	Improvement	Value	
Reduction in network transport costs	\$2.18M	24.8%	\$541K	30.0%	\$653K	Replace MPLS with broadband
Reduction in router costs	50 routers from 75 sites	66%	\$318K	66%	\$345k	Useful life of 5 – 7 years, SMARTnet of 75K annually, DNA licenses of 4K per year per ISR4K, annualized
Reduction in firewall costs	20 firewalls from 75 sites	26.7%	\$11K	26.7%	\$12K	Replace firewalls with PA-200 going forward
Reduction in costs to resolve IT tickets	1K tickets annually @ \$351 each	29.5%	\$104K	41.2%	\$144K	25% of overall IT tickets are network related
Reduction in cost of downtime	\$180K	66%	\$115K	70%	\$329K	Reduction in network downtime at warehouses
Network administration automation	\$800K in salaries	7.3%	\$58K	16.8%	\$134K	Quicker/easier to stand up SD-WAN, configure security policies, and troubleshoot
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Table 2 — Business value drivers and projected benefits of SD-WAN



In addition, Aruba brings additional benefits that other SD-WAN vendors cannot match. These include:

- **Complimentary training** — Aruba invests in our customers' success by providing SD-WAN training and certification, absorbing the costs, valued at \$64,000 – \$72,000 (the cost for training 8 people for two days at \$4,000 – \$4,500 per person per day)
- **Lower implementation costs** — labor costs to implement the Aruba SD-WAN are \$45,000 – \$58,000 less compared to competitors

- **On-demand WAN optimization** — the Aruba EdgeConnect SD-WAN edge platform includes the optional **Aruba Boost** WAN optimization performance pack as part of the unified solution, lowering demand on the network by more than 30 percent compared to vendors requiring a separate device

With flexible provisioning, secure connectivity, multi-path control, reliable performance, and centralized orchestration — all with an attractive return on investment — Aruba offers the most complete and economical SD-WAN solutions on the market today.

To learn more, please visit: arubanetworks.com