

FORRESTER®

The Total Economic Impact™ Of Aryaka

Cost Savings And Business Benefits
Enabled By Managed WAN Services

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Consulting Team: Henry Huang
Marianne Friis

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ABOUT FORRESTER CONSULTING

Forrester provides independent and objective research-based consulting to help leaders deliver key transformation outcomes. Fueled by our customer-obsessed research, Forrester’s seasoned consultants partner with leaders to execute on their priorities using a unique engagement model that tailors to diverse needs and ensures lasting impact. For more information, visit forrester.com/consulting.

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Executive Summary

Businesses are struggling to adapt to a distributed and hybrid workforce model that depends on access to a mixture of cloud and wide area networks (WANs). To execute on this new world is challenging to achieve fast, reliable, and secure access across regions and to the cloud, especially with poor SLAs on public broadband and a shortage of personnel to address issues. A unified WAN connectivity provider that brings managed services can stitch together performance and reliability is necessary.

[Aryaka](#) delivers a global WAN connectivity solution with managed services that helps organizations both large and small. The Aryaka solution includes software-defined WAN (SD-WAN) and its own network of points of presence (POPs) to optimize the movement of data across the world. Aryaka also offers last-mile management and secure access service edge (SASE) solutions that help organizations improve performance and minimize WAN connectivity issues.

Aryaka commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying it.¹ The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of on their organizations.

NetOps reduction in effort to manage WAN services

45%



To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four representatives with experience using multiple Aryaka managed solutions, which include SD-WAN,

KEY STATISTICS



Return on investment (ROI)

113%



Net present value (NPV)

\$2.48M

last-mile access, middle-mile access, and managed SASE. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single [composite organization](#) that is a B2C and B2B organization with 3,000 employees operating globally from 50 sites.

Prior to using Aryaka, many interviewees noted how their organizations overpaid for and received poor performance on their multiprotocol label switching (MPLS) circuits to connect sites and reach the cloud — to the point where it was unusable for certain tasks. For those who had switched to public broadband and SD-WAN, connectivity was shaky, fraught with downtime and latency issues. NetOps and engineers spent more time than ever to ensure business continuity.

After the investment in Aryaka, the interviewees saw improved WAN performance, stability, and security — which was a result of last-mile management, middle-mile access across Aryaka's global private network,

managed SD-WAN, and managed SASE. Key results from the investment include connection stability; greater performance, especially from certain regions and to cloud apps; and simplification of operations. Packets were no longer misrouted, latency was reduced, and business continued onward — all while decreasing the load on NetOps.

KEY FINDINGS

Quantified benefits. Three-year, risk-adjusted present value (PV) benefits for the composite organization include:

- **Reducing NetOps’s expended effort by 45%.** The improvement in stability, performance, and managed services for global connectivity enable internal global operations to simplify their workflows and redirect their efforts to other tasks. Tasks such as monitoring and troubleshooting are all handed off, with many of them remediated more quickly than in the prior state. Over three years, the operational efficiency and handing-off of WAN connectivity duties is worth \$754,000 to the composite organization.

“On configurations, Aryaka takes care of everything once we file a ticket on the portal. Our team can focus on other things like internal operations. Without Aryaka, we’d need to put in 30% to 40% more time for configurations.”

Network solutions lead, manufacturing

- **Retaining revenue and employee productivity due to improved uptime.** Every hour of an

outage is worth more than \$210,000 in lost revenues to the composite and nearly \$120,000 in employee productivity loss. While these figures represent enterprisewide outages, 3% of critical site locations are affected by WAN outages, with more 72 hours of outages per year. After moving to Aryaka, the composite organization eliminates these outages. Revenue retained and employee productivity loss prevented results in a three-year savings of \$1.6 million.

- **Sunsetting existing MPLS circuits.** Moving from MPLS circuits to SD-WAN from Aryaka, the composite organization saves considerably while also improving performance. Prior to the Aryaka investment, multiple MPLS circuits were located at some locations, while smaller site locations utilized singular circuits. In all, the composite retires circuits from 50 site locations, resulting in savings of \$2.2 million after switching to Aryaka SD-WAN.
- **Scaling acceleration for the business while using less effort.** With Aryaka, the composite organization can increase the number of site locations or size of its workforce faster, while also using fewer internal resources. In addition, when the organization needs to temporarily increase bandwidth, bursting is available with quick provisioning. Without Aryaka, the composite utilizes the equivalent of three internal FTEs on scaling efforts across three months; with Aryaka, this cost is now avoided, yielding a benefit of \$169,000 over three-years.

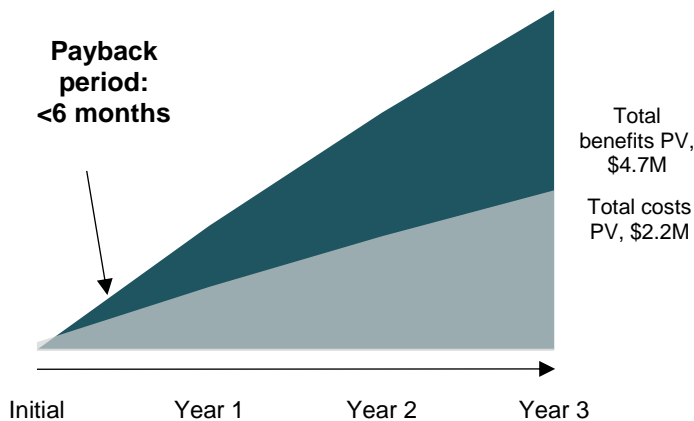
Unquantified benefits. Benefits that provide value for the composite organization but are not quantified in this study include:

- **Increase in user productivity and satisfaction due to lower latency.** Aryaka lowers latency so business end users have snappier performance, whether connecting to home base or cloud applications. Faster performance is not quantified as it is measured in seconds, but Forrester

expects that any degree of performance improves the user experience. Additionally, Aryaka compression and data deduplication factor into efficiency of data flow, further expediting data across borders. Note that this improvement is separate from issues such as dropped links, connections, and downtime.

- **Security benefits of threat protection.** Aryaka provides a cloud-based secure web gateway (SWG) that includes features such as URL filtering, access control, and internet traffic antivirus scanning. This threat protection is applicable to site locations, headquarters locations, as well as remote users traversing the internet.

Financial Summary



Costs. Three-year, risk-adjusted PV costs for the composite organization include:

- **Aryaka fees.** Costs comprise initial setup and recurring costs, which include but are not limited to access/bandwidth costs to the network and POPs, SD-WAN and last-mile management, and managed services. The composite's coverage spans 50 global physical sites, as well as remote users. Costs over three years total less than \$2 million.
- **Internally borne labor costs.** Initial setup involves NetOps and engineers for planning and implementation tasks. Ongoing internal costs include the regular collaboration of NetOps with Aryaka to further improve internal WAN service delivery. Internally borne costs equate to \$199,000 over three years.

The representative interviews and financial analysis found that a composite organization experiences benefits of \$4.67 million over three years versus costs of \$2.19 million, adding up to a net present value (NPV) of \$2.48 million and an ROI of 113%.



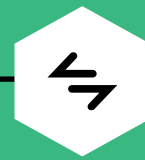
ROI
113%



BENEFITS PV
\$4.67M

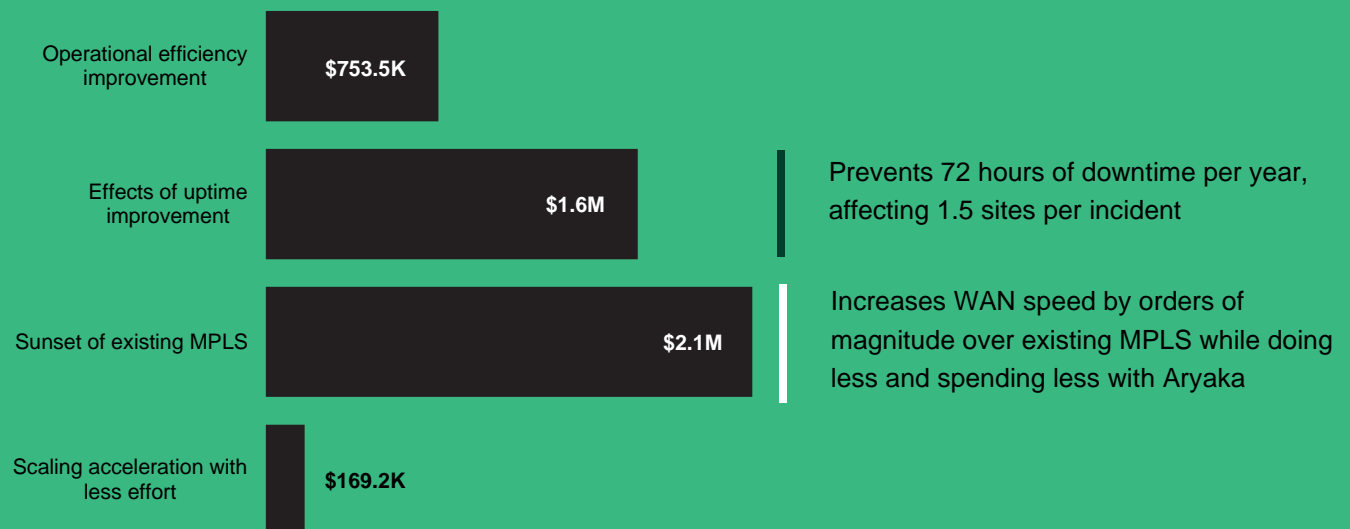


NPV
\$2.48M



PAYBACK
<6 months

Benefits (Three-Year)



“Aryaka gives us an all-encompassing solution with their own network, POPs, managed services, SASE, etc. The other vendors had excellent technology, but they were just selling boxes.”

— Technical architect, transportation

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in Aryaka.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Aryaka and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the study to determine the appropriateness of an investment in.

Aryaka reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

Aryaka provided the customer names for the interviews but did not participate in the interviews.



DUE DILIGENCE

Interviewed Aryaka stakeholders and Forrester analysts to gather data relative to.



INTERVIEWS

Interviewed four representatives at organizations using to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewees' organizations.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewees.



CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The Aryaka Customer Journey

Drivers leading to the Aryaka investment

Interviews			
Role	Industry	Regions Of Operation	Use Of Aryaka
Network solutions lead	Manufacturing	Global with emphasis on China, US, and EMEA	Last mile, middle mile, Asia connectivity
Director of procurement	Engineering consulting	Global with emphasis on US, APAC, and Oceania	SD-WAN, last mile
Technical architect	Transportation	Global	SD-WAN, middle mile, last mile, SASE
Senior manager, networking	Retail	US, Asia	SD-WAN, middle mile, last mile

KEY CHALLENGES

Mounting frustration over MPLS and its inability to bring organizations to their digital transformation goals due to its lack of bandwidth was a common complaint with interviewees. Cost was another consideration. These organizations explored SD-WAN with other vendors but did not find success as new issues appeared in pilot programs.

An organization that had already moved to SD-WAN found it difficult to address the constant reliability issues that occur on the public internet (e.g., jitter, flapping, and wildly oscillating latency), eventually leading to a tremendous performance hit and/or downed sites. Data passing through Asia Pacific was especially challenging, with local telcos delivering varying levels of service.

The interviewees noted how their organizations struggled with common challenges, including:

- **MPLS was too slow and too expensive.** Many of the existing MPLS circuits at the interviewees' organizations operated at 1.54 Mbps, sometimes in multiples, to achieve the desired outcome. With these organizations now on the cloud and moving toward cloud apps and services, the bandwidth required to become digital-first was simply inadequate. Adding circuits wasn't in the

cards as the cost to increase the bandwidth and speed to acquire new circuits was untenable.

- **It was particularly hard to maintain reliable connections in some parts of Asia.** Multiple customers had sites in Asia and often complained about the inability to efficiently move data in and out of certain regions. Apps timed out, and anything requiring low latency was incredibly difficult to support. Additionally, working with telcos and ISPs in these regions was a struggle for NetOps teams as they didn't speak the local language to be able to collaboratively remediate issues.

“We had a transformation request to go to Azure, and a switch from MPLS was a necessity with it being expensive and slow. There are over 100 locations, and acquisitions were coming in, so that played into the need to switch.”

*Director of procurement,
engineering consulting*

“There were a lot of issues with our locations in China. Our tunnels kept going up and down from China, and the performance was really bad. We needed to somehow find a way to get our traffic through the ‘Great Firewall.’”

Network solutions lead, manufacturing

- **Organizations were too understaffed to monitor and address WAN issues.** When considering the move from MPLS to SD-WAN, interviewees realized that connectivity was shaky and required constant monitoring. To be able to monitor these conditions would ultimately require more staff, and it was impossible to bring together enough employees to provide a reasonable SLA to internal users.

“A few years ago, we had to send people home during a 6-hour outage. Imagine how many people there are in a distribution center.”

Senior manager, retail

- **Losses due to downtime kept mounting.** For one interviewee, this meant as much as a hundred thousand dollars for every few minutes a WAN connection was down; it affected everything from storefronts to inventory systems. Another interviewee stated that when links went down, his

organization’s engineers couldn’t do anything productive.

- **Multiple vendors introduced complexities.** Working with multiple vendors prior to Aryaka, it was difficult for the interviewees’ organizations to efficiently resolve issues as finger-pointing was the norm. Bringing together the data and information among vendors protracted triage and remediation — wasting time for NetOps.

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

The interviewees’ organizations searched for a solution that could:

- Deliver SD-WAN without the need to internally upgrade and maintain appliances.
- Increase WAN performance across regions.
- Provide SASE for a distributed workforce.
- Manage everything to reduce internal load.
- Be the single provider for all of the above goals.

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four interviewees, and it is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. This global organization conducts both B2B and B2C business. It has a physical footprint spread across the Americas, EMEA, and APAC. While it does business across many smaller sites, there are also several larger locations with 200 to 500 FTEs. It currently utilizes a multicloud infrastructure to complement its data centers. It has been on the path to become more cloud-centric. Apps such as office productivity

software, sales automation, and analytics software are all SaaS-based.

Deployment characteristics. Deployment begins after a planning process with Aryaka and defining the needs of each of the composite's locations. Internal NetOps staff were on hand to provide information and assistance where needed; however, Aryaka performs the majority of the deployment, which includes configurations of appliances, software, and routing maps for the sites and remote users. The entirety of the 50 sites and remote users are set up in six months.

Key Assumptions

- **B2B/B2C org**
- **\$450M in revenue**
- **3,000 FTE**
- **50 sites globally; mixture of small/medium/large sites**
- **Previously using MPLS**
- **Utilizes SaaS/cloud apps**

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Operational efficiency improvement	\$302,995	\$302,995	\$302,995	\$908,985	\$753,503
Btr	Effects of uptime improvement	\$653,390	\$653,390	\$653,390	\$1,960,171	\$1,624,885
Ctr	Sunset of existing MPLS	\$855,000	\$855,000	\$855,000	\$2,565,000	\$2,126,258
Dtr	Scaling acceleration with less effort	\$68,041	\$68,041	\$68,041	\$204,123	\$169,208
	Total benefits (risk-adjusted)	\$1,879,426	\$1,879,426	\$1,879,426	\$5,638,279	\$4,673,854

OPERATIONAL EFFICIENCY IMPROVEMENT

Evidence and data. A prime motivation for many of the interviewees and their organizations was to reduce the strain on their NetOps personnel. In testing SD-WAN with other vendors, they had noted that speed was vastly improved and security could be had in combination; however, to have a truly enterprise-grade, reliable WAN required a dedicated group that was greater than their existing network operations workforce.

Most notably, the organizations saw that Aryaka delivered end-to-end WAN connectivity with managed services on the last-mile, middle-mile access, and securing it along the internet path. The entire path was managed by Aryaka and a central interface to distribute correlated information on incidents and ticket assignment when needed.

- Specific to last-mile management, Aryaka’s managed services tracked down issues as they appeared and either fixed them automatically or determined the source of the issue and proactively dealt with the local telco/ISP.
 - This service was especially helpful for many organizations, as NetOps were mostly centralized and could not

communicate in local languages with the telcos/ISPs.

- Customers indicated that Aryaka dealt with all their telco/ISPs and held a relationship with the telco/ISPs in handling the affairs, smoothing out remediation tasks.

“[Aryaka] monitors and remediates any internet circuit that goes down on our network. Their devices do the notification, and their team corrects the issue without us having to do anything.”

Director of procurement, engineering consulting

- The network solutions lead at a manufacturing organization said: “When it came time to do root cause analysis for our providers — and we’ve got

probably 100 providers — they would just come back a few days later and blame it on internet links but nothing concrete. But with Aryaka, they work with all these providers and have been able to get the root cause for pretty much every incident. They identify it and follow up with the provider to make whatever fixes are completed.”

“Aryaka passes pretty much the entire WAN, the entire internet segment, with their network of POPs.”

Networks solutions lead, manufacturing

- Monitoring and automated processing of incidents lifted a large burden from internal NetOps. Real-time monitoring and the need to read logs to identify issues were persistent issues that customer organizations could not fully manage. For one organization, this meant that they shifted approximately 10 people from monitoring WAN connections to improve SLAs in other ways.
- Routing traffic properly by Aryaka reduced flapping and jitter for multiple customer organizations. Ultimately, this was a result of routing across the optimal POPs, which are Aryaka-owned.

Modeling and assumptions. Forrester has modeled this benefit category based upon the customer results and the following additional factors:

- The composite organization realizes a 45% reduction in effort to identify, remediate, and document WAN-related incidents.

- Major contributors to the savings are Aryaka’s 24/7 managed services and ownership of its POPs in strategic locations.
- Investigation, remediation, and workflow directly with local telco/ISPs is handed off to Aryaka.

Risks. Forrester accounts for variability and potential risks that may impact the financial model, including:

- The number of sites in specific countries affects the delta in workload saved. Should the organization have fewer locations in Asia Pacific, for instance, the efficiency gain would be lower.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$754,000.

Operational Efficiency Improvement					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Reallocated network operations personnel due to decreased workload and Aryaka automation	Interviews	45%	45%	45%
A2	Average hourly cost per NetOps FTE	TEI standard	\$68.15	\$68.15	\$68.15
A3	Annual hours per NetOps FTE	TEI standard	2,080	2,080	2,080
A4	Total NetOps FTEs dedicated to global operations prior to reallocation	Composite	5	5	5
At	Operational efficiency improvement	$A1 * A2 * A3 * A4$	\$318,942	\$318,942	\$318,942
	Risk adjustment	↓5%			
Atr	Operational efficiency improvement (risk-adjusted)		\$302,995	\$302,995	\$302,995
Three-year total: \$908,985			Three-year present value: \$753,503		

EFFECTS OF UPTIME IMPROVEMENT

Evidence and data. A result that many interviewees' organizations saw shortly after deploying Aryaka was the immediate end to employee productivity loss due to outages. A few months later, they also realized that revenue leakage from outages had also been eliminated.

A number of factors contributed to reduction in outages, which are similar to the prior benefit, including:

- Middle-mile access across Aryaka's own network and POPs — effectively bypassing open internet POPs and their routing structure.
- Last-mile management to sort out issues before they become severe enough for an outage.
- Strategic placement of POPs to bypass problematic regions like Asia, and specifically, China.
- 24/7 monitoring and tracking to resolve enterprise WAN in all locations for business continuity around the world.
- High-availability units built into many important and critical sites.

and this alleviates our need to do manual follow-ups with internet follow-ups. I'm sure we'd need to contract that out to multiple providers to monitor it continuously otherwise."

- An outage in the WAN affects multiple facilities downstream. For instance, when a connection between offices at a major retailer went down, it affected not only revenue but also the ability for distribution centers to fulfill orders. The labor productivity lost was in the millions of dollars per year for the retailer. Revenue losses were astronomical too: in the six figures every few minutes.
- When asked about the stability of Aryaka's network, the technical architect at a transportation company told Forrester: "It's pretty good! No serious outages since going with Aryaka. We now know what went wrong with our ISP, or perhaps that it was a power issue."

“We have highly paid employees in India, Europe, and China trying to work together from different sites. When jitter occurred, they could not do their work as the connections would go up and down.”

Technical architect, transportation

“If I look back, we had maybe 40 [or] 50 severity 1 incident tickets in a year where our internet links went out. Now we have exactly zero.”

Network solutions lead, manufacturing

Interviewees shared the following with Forrester:

- Said one interviewee: “We were informed every time [by Aryaka] when there was a circuit issue,

Modeling and assumptions. Forrester has modeled this benefit category based upon the customer interviews and the following additional factors:

- The composite organization conducts both B2B and B2C sales.

- Forrester estimates that with any comparable SD-WAN solution without Aryaka's network, 3% of sites that would experience downtime.
- With an estimated 50 sites globally, the composite experiences 72 hours of downtime that affects 3% of sites.
- Costs of downtime in revenue and productivity are measured on an enterprise-level blackout but multiplied against the 3% of sites affected.
- Forrester has calculated conservatively by not accounting for downstream losses, which are different for every industry vertical.
- The cost of revenue per hour varies as B2B customers have a higher chance of being retained than B2C customers. In general, B2C customers have more alternatives in vendors and products.
- The cost of employee productivity loss varies by industry. For instance, healthcare labor costs are dramatically higher than those in retail.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of more than \$1.6 million.

Risks. Forrester accounts for variability and potential risks that may impact the financial model, including:

Effects Of Uptime Improvement					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Cost of downtime on revenue per hour	Composite	\$216,346	\$216,346	\$216,346
B2	Percentage of sites affected per outage	Interviews	3%	3%	3%
B3	Cost of lost internal-employee productivity per hour	Composite	\$119,760	\$119,760	\$119,760
B4	Percentage of employees affected, per outage	Interviews	3%	3%	3%
B5	Total downtime per year (hours)	Interviews	72	72	72
Bt	Effects of uptime improvement	$(B1*B2+B3*B4)*B5$	\$725,989	\$725,989	\$725,989
	Risk adjustment	↓10%			
Btr	Effects of uptime improvement (risk-adjusted)		\$653,390	\$653,390	\$653,390
Three-year total: \$1,960,171			Three-year present value: \$1,624,885		

SUNSET OF EXISTING MPLS

Evidence and data. Multiple interviewees stated that their organizations moved from MPLS circuits to improve performance. Some had tried SD-WAN but found them to be unstable and unsuitable for enterprise use. Some organizations had also checked with SD-WAN vendors and found that while many provided the appliances or security functions to enable sites, the contribution in NetOps effort was equally as demanding.

- Paying for multiple MPLS circuits per site location was costly as they typically revolved around 1.54 Mbps each, and that could not accommodate the traffic these enterprises needed to connect their employees to cloud apps and corporate data.

Instances were no longer one-to-one connections from a site location to a cloud application such as Azure or AWS. One interviewee reported that their organization has a mesh as their “sites are interconnected via Aryaka POPs, so it’s a full mesh from each location.”

Modeling and assumptions. Forrester has modeled this benefit category based upon the customer interviews and the following additional factors:

- Forrester estimates for the composite that multiple T1 circuits are necessary per site for adequate bandwidth and availability to the WAN in an existing MPLS situation.
 - The cost figures are an average of extra-small, small, and medium sites.
 - Larger sites are generally linked via a metro connection.
- The cost of managing MPLS circuits includes the savings represented in the table on the next page.

Risks. Forrester accounts for variability and potential risks that may impact the financial model, including:

- The cost of MPLS is decreasing in most advanced countries. Forrester expects that organizations may be able to negotiate even lower pricing for MPLS in the years to come.

Results. To account for this risk, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of more than \$2.1 million.

“MPLS was a solution that worked when it was invented, and we’ve moved to something better. It allowed us to connect through local connections, get rid of expensive MPLS circuits, and port those over to fiber and redundant circuits.”

*Director of procurement,
engineering consulting*

Sunset Of Existing MPLS					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Average cost of each existing MPLS circuit	Forrester research	\$18,000	\$18,000	\$18,000
C2	Number of circuits	Interviews	50	50	50
Ct	Sunset of existing MPLS	C1*C2	\$900,000	\$900,000	\$900,000
	Risk adjustment	↓5%			
Ctr	Sunset of existing MPLS (risk-adjusted)		\$855,000	\$855,000	\$855,000
Three-year total: \$2,565,000			Three-year present value: \$2,126,258		

ACCELERATED SCALING WITH LESS EFFORT

Evidence and data. Most organizations Forrester spoke with had particular needs related to scaling; for example, with some moving personnel to different locations or growing through acquisitions. Interviewees reported that MPLS and SD-WAN solutions took longer to stand up for their organizations, whereas the Aryaka version was significantly faster to stand up and began operating at a steady state sooner.

- Bursting was easily done with Aryaka as reported by customers, especially across the Aryaka network.
- Where additive bandwidth was needed on a continuous basis, Aryaka sent a new, preconfigured piece of equipment to minimize to minimize planned downtime.
- Prior to implementing Aryaka, interviewees' organizations had allocated network engineers and NetOps staff to achieve scaling via self-configuration.

up WAN configurations and test them to run properly for site locations.

- Internal NetOps and network engineers can hand off the work to Aryaka once the premise and need for scaling has been determined.
- Based on customer input, Forrester assigns three FTEs to stand up new locations annually, spending 20% of their time on this specific task.

Risks. Forrester found no risk to this benefit category. Seldom do organizations not need to adjust bandwidth or location requirements, hence no risk has been assigned.

Results. Forrester has determined this benefit to yield a three-year, total PV of more than \$169,000.

“We’ve used Aryaka since we were close to 1,000 persons, and now we’re an over 3,000-person company. That has all scaled without issue with Aryaka on both bandwidth and locations.”

*Director of procurement,
engineering consulting*

“When we want to bring it up, we can ask them to bring up this VPN connection from their POP. And when we are done, we can ask them to remove it. If we want to increase the bandwidth, we can ask them. It’s very easy.”

Network solutions lead, manufacturing

Modeling and assumptions. Forrester has modeled this benefit category based upon the customer interviews and the following additional factors:

- Forrester assumes that the composite organization typically takes 2.4 months to stand

Accelerated Scaling With Less Effort					
Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	FTEs required for expansion prior to Aryaka	Interviews	3	3	3
D2	Cost per NetOps FTE	TEI standard	\$141,752	\$141,752	\$141,752
D3	Percentage of year spent standing up new locations	Interviews	20%	20%	20%
D4	Productivity recapture rate	TEI standard	80%	80%	80%
Dt	Accelerated scaling with less effort	$D1 \cdot D2 \cdot D3 \cdot D4$	\$68,041	\$68,041	\$68,041
	Risk adjustment	0%			
Dtr	Accelerated scaling with less effort (risk-adjusted)		\$68,041	\$68,041	\$68,041
Three-year total: \$204,123			Three-year present value: \$169,208		

UNQUANTIFIED BENEFITS

Interviewees mentioned the following additional benefits that their organizations experienced but were not able to quantify:

- **Increased user productivity and experience.** Strategic placement of POPs reduces not only downtime but also latency. Many interviewees reported that their end users access SaaS applications faster, avoiding the dreaded spinning-circle icon. Generally, the experience improves by seconds, but the speed improvement is insufficient to quantify for this study. The vastly improved user experience, however, can lead to higher productivity.
- **Improved security of SWG and access control.** Hybrid work and distributed workforces have taken root since the COVID-19 pandemic and are likely here to stay. For those users who are remote or located at smaller sites, internet protection outside of basic AV/EDR is absolutely necessary. Solutions like the SWG that can control access and protect from malicious internet content are pivotal. One interviewee stated that incorporating security with access makes his group's lives easier and is an easier pitch to the security group within his organization. While Forrester has not been able to quantify Aryaka's security benefits, we expect that it will be useful as an extension of SecOps, reducing their workload with managed services and an integrated approach to tackle WAN.

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement and later realize additional uses and business opportunities, including:

- **Scaling horizontally or vertically.** Forrester spoke with multiple customers who mentioned Aryaka's receptivity to accommodate by having POPs in even the most remote locations. As

organizations determine their expansion efforts, working with such a partner that will work to move data to/from those locations with a new and closer POP is something to consider.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in [Appendix A](#)).

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Etr	Cost basis	\$70,840	\$773,801	\$773,801	\$773,801	\$2,392,243	\$1,995,168
Ftr	Internal labor costs	\$31,077	\$67,331	\$67,331	\$67,331	\$233,070	\$198,519
	Total costs (risk-adjusted)	\$101,917	\$841,132	\$841,132	\$841,132	\$2,625,313	\$2,193,687

COST BASIS

Evidence and data. Interviewed customers reported that the cost of Aryaka was reasonable given the value they received. The cost factors indicated were bandwidth, high availability, and regionality. Conversations also revealed:

- Bandwidth was configured and priced according to demands per site.
- Costs of last-mile management and middle-mile in China and some remote regions were higher.
- Initial professional services were included.
- Access the Aryaka network to internal sites and acceleration to common SaaS products were a part of their package.

Modeling and assumptions. Forrester has modeled this cost category based upon the following:

- A small percentage of sites are based in China and other remote locations.
- Larger and critical sites have high availability packaged in.
- Remote users constitute approximately one-third of the composite organizations' workforce, but they are distributed globally.

- Bandwidth needs per individual site are built into the pricing.
- Pricing may vary. Contact Aryaka for specific needs as there are multiple variables to consider.

Risks. Forrester factors the impact of potential differences that might influence the costs for other organizations. Possible risks include:

- The bandwidth and users within certain regions such as China can change the cost equation.
- The need for additive high availability in a high percentage of sites can be the case for some industry verticals, even for small offices.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of less than \$2.0 million.

“Their included professional services took care of everything, and there were no overruns.”

Technical architect, transportation

Cost Basis						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Initial costs from Aryaka	Aryaka	\$64,400			
E2	Recurring network access costs from Aryaka	Aryaka		\$703,455	\$703,455	\$703,455
Et	Cost basis	E1+E2	\$64,400	\$703,455	\$703,455	\$703,455
	Risk adjustment	↑10%				
Etr	Cost basis (risk-adjusted)		\$70,840	\$773,801	\$773,801	\$773,801
Three-year total: \$2,392,243			Three-year present value: \$1,995,168			

INTERNAL LABOR COSTS

Evidence and data. In speaking with Aryaka customers, implementation and planning were described as an easy exercise. Beyond the initial phase of deployment, Forrester found that organizations had assigned an internal resource to interface with Aryaka for the purpose of mutually alleviating unique situations and to plan new initiatives and associated processes.

The network solutions lead at a manufacturing company explained: “We worked with [Ayraka] from QoS data, and they were able to do a direct tunnel from one office to another rather than going through their POPs. We asked for a feature, and we got it.”

Modeling and assumptions. Forrester has modeled this cost category based upon the following:

- An internal support role who interfaces with Ayaka expends hours during the initial implementation.

- In ensuing years, a few key internal stakeholders spend minimal hours per month.
- One FTE also spends nearly half of their time collaborating on unique incidents with Aryaka.

Risks. Forrester factors the impact of potential differences that might influence the costs for other organizations. One possible risk is:

- Aryaka works flexibly with customers to craft specific solutions. This typically involves additional internal resources to scope, design with Aryaka, and test.

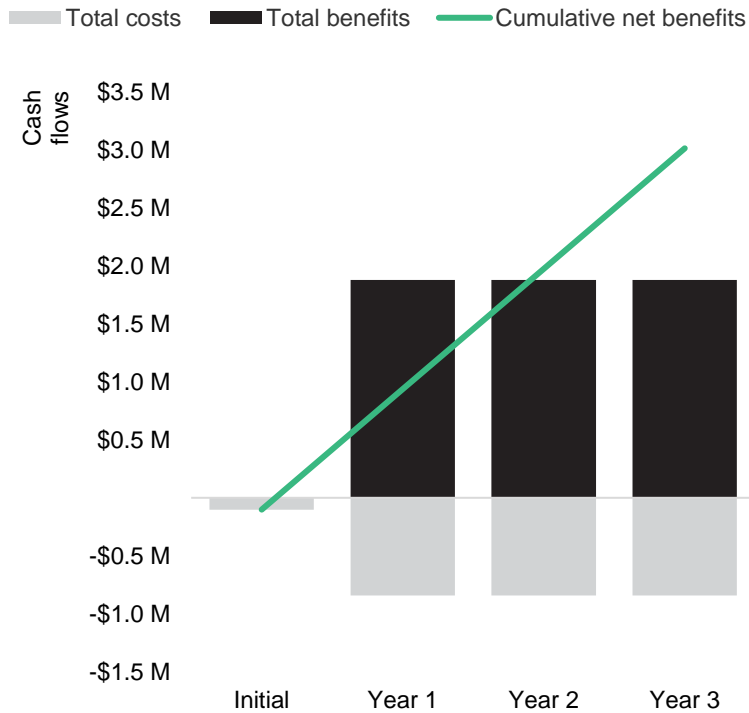
Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of less than \$199,000.

Internal Labor Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Labor hours required for initial planning and implementation	Interviews	480			
F2	Blended hourly cost of employees involved	TEI standard	\$61.66	\$61.66	\$61.66	\$61.66
F3	Cost of initial deployment	Interviews	\$29,596.80			
F4	Ongoing internal labor cost to refine the Aryaka engagement	Interviews		\$64,125	\$64,125	\$64,125
Ft	Internal labor costs	F1+F2+F3+F4	\$29,597	\$64,125	\$64,125	\$64,125
	Risk adjustment	↑5%				
Ftr	Internal labor costs (risk-adjusted)		\$31,077	\$67,331	\$67,331	\$67,331
Three-year total: \$233,070			Three-year present value: \$198,519			

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$101,917)	(\$841,132)	(\$841,132)	(\$841,132)	(\$2,625,313)	(\$2,193,687)
Total benefits	\$0	\$1,879,426	\$1,879,426	\$1,879,426	\$5,638,279	\$4,673,854
Net benefits	(\$101,917)	\$1,038,294	\$1,038,294	\$1,038,294	\$3,012,966	\$2,480,167
ROI						113%
Payback period						<6 months

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.



PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.



NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made unless other projects have higher NPVs.



RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Appendix B: Supplemental Material

Related Forrester Research

[“SD-WAN — More Than Just Cutting WAN Costs,”](#) Forrester Research, Inc., September 7, 2021

[“Understanding The Industry Cloud Ecosystem In China, 2022,”](#) Forrester Research, Inc., June 28, 2022

[“Demystifying The Fragmented Edge,”](#) Forrester Research, Inc., March 2, 2022

Appendix C: Endnotes

¹ Total Economic Impact is a methodology developed by Forrester Research that enhances a company’s technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

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