FORRESTER®

The Total Economic Impact™ Of Microsoft Azure Arc With Cloud-Based Management Services

Cost Savings And Business Benefits Enabled By Azure Arc

A FORRESTER TOTAL ECONOMIC IMPACT STUDY
COMMISSIONED BY MICROSOFT, APRIL 2025

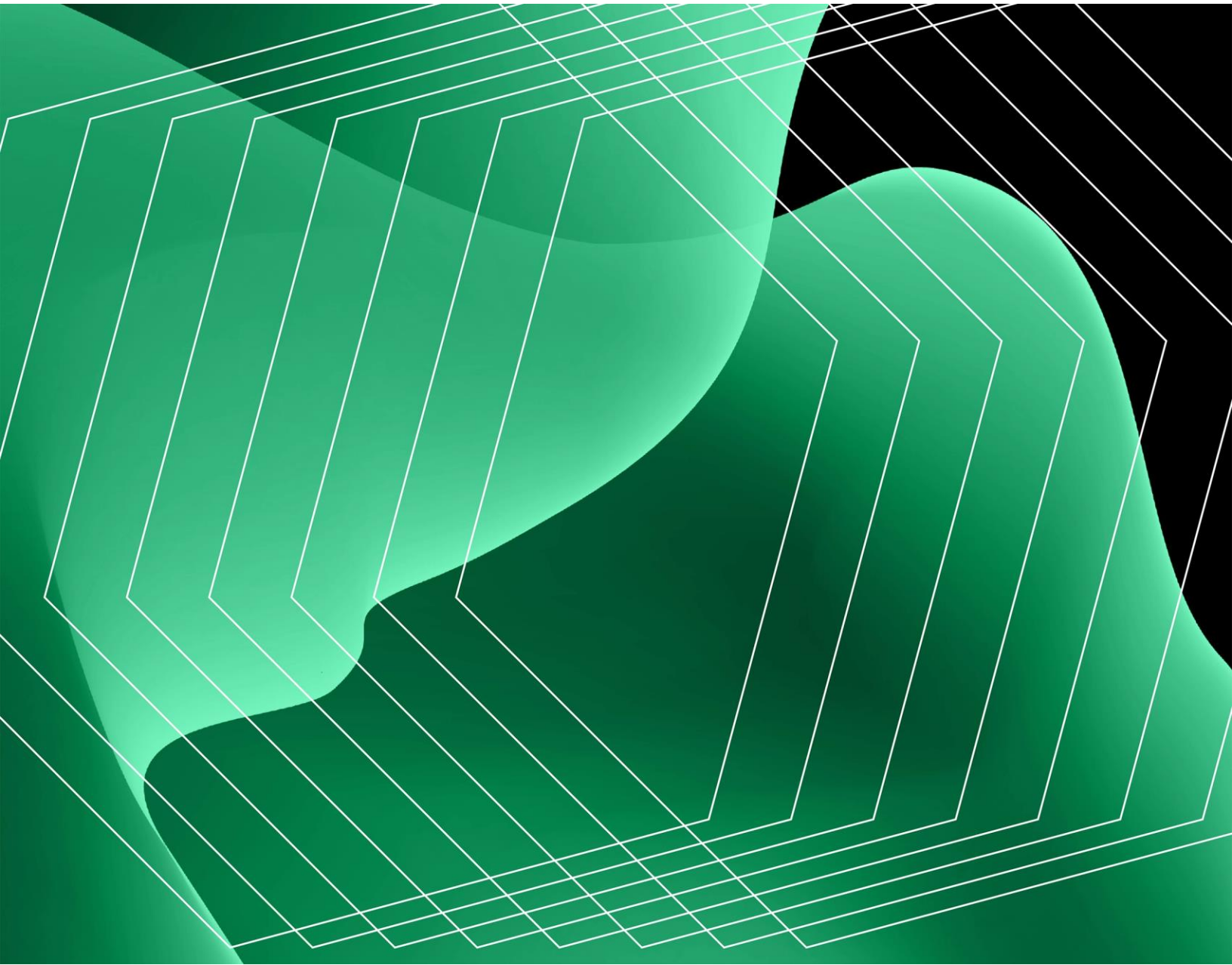


Table Of Contents

Consulting Team:

Eric Hall

ABOUT FORRESTER CONSULTING

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

Executive Summary

Managing enterprise-level IT infrastructure is a challenge, combining existing hybrid and multicloud infrastructure with a push to transition more on-premises workloads to the cloud. Many organizations lack central visibility and asset management across environments, hindering strategic and operational optimization. Central visualization and control can provide labor productivities, improve cybersecurity, enable policy and operational standards, and facilitate strategic activities, such as cloud migration and AI initiatives.

Azure Arc combines with Azure governance, management, networking, and security services from Microsoft to provide a mechanism to visualize and manage assets across hybrid, multicloud IT infrastructures. It helps with overall IT strategy management, policy standardization, best practices application, and license cost reduction, while also allowing IT operations to focus more of their time on cloud migrations, infrastructure modernization, and AI initiatives.

Microsoft commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Azure Arc.[1] The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Azure Arc with cloud-based management services on their organizations.

Return on investment (ROI)
304%

Net present value (NPV)
$1.7M

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four decision-makers with experience using Azure Arc. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organization that is a global organization with 4,000 IT assets and annual revenue of $40 billion.

Interviewees said that prior to using Azure Arc, their organizations lacked the tools to centrally visualize and manage hybrid and multicloud IT infrastructures. In addition to labor inefficiencies, strategies were not holistic, policies and standards were fragmented, and IT operations best practices were limited. Key areas suffered, including security, administration, licensing activities, and performance tuning.

After the investment in Azure Arc and other Azure services, the interviewees' organizations could provide a single interface to a significant portion of its hybrid, multicloud IT infrastructure. Key results from the investment include significant IT operations productivities, cybersecurity risk reduction, licensing savings for both Windows Servers and SQL Servers, and a reduction in third-party tools.

KEY FINDINGS

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

- **IT operations productivity gains of 30%.** The IT operations team has a single interface to manage on-premises and multicloud assets. Productivities associated with automation, simplification of update processes, standardization, broad visibility improvements, and more efficient cross-domain communications allow the composite's IT operations team to focus on more value-add tasks, such as cloud migrations, infrastructure modernization, and AI initiatives.
- **Breach risk reduction by 50%.** The composite organization not only reduces the risk of security breaches by utilizing security services from Microsoft, but it also gains a visualization of the infrastructure landscape due to the discovery capabilities of Azure Arc, allowing the composite to identify assets that are not meeting the latest security standards more easily. Also, automation within Azure Arc ensures that the composite organization's Windows Server and SQL Server extended security updates are performed thoroughly and in a timely manner.
- **On-premises Windows Server and SQL Server pay-as-you-go saves 10% on licensing and extended security updates fees are reduced by 30%.** The composite organization benefits from on-premises Windows Servers and SQL Servers shifting from a fixed rate to the cloud approach with pay-as-you go (PAYG) licensing, saving money while spreading costs across monthly payments. For extended security updates (ESU),

the composite organization switches from a multiple-country, multiple-vendor procurement process for ESUs to direct contracting with Microsoft, reducing procurement costs and eliminating third-party vendor markups.

- **Deprecated tool savings by up to 15%.** Azure Arc and added Azure services allows the composite organization to eliminate or reduce the use of third-party solutions and tools while providing a comprehensive and unified approach to managing its IT infrastructure.

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

- **Enhanced visibility and control.** Azure Arc provides visibility across the composite organization's on-premises and multicloud environments. Capabilities include the ability to discover rogue assets, manage inventory, make better strategic decisions, and optimize resource usage.
- **Employee and customer satisfaction.** Using Azure Arc led to a reduction in manual processes for the composite organization and an increase in automation, allowing employees to focus on more value-add activities. Azure Arc enhances customer satisfaction by enabling better service and support, leading to improved retention of external customers and more dialog from internal customers on ideas for value-add activities.
- **Assistance from the Microsoft team.** The Microsoft team assists the composite organization during the implementation process. Ongoing assistance and guidance includes helping with infrastructure management and discovery.
- **Audit and compliance improvements.** Central visibility and the reporting capabilities of Azure Arc simplifies audit preparation and compliance reporting, leading to valuable time savings for the composite organization and the shortening of the preparation time window.

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

- **Azure service consumption fees.** While Azure Arc is a no-cost service, the composite organization uses Azure governance, management, networking, and security services from Microsoft.

- **Training and implementation costs.** Primary training for the IT operations team is completed in approximately a month, with ongoing training as new initiatives or service enhancements occur. Implementation for the composite organization includes strategy changes and the development of new policies, processes, and workflows. Implementation is ongoing, based upon organizational priorities.

The representative interviews and financial analysis found that a composite organization experiences benefits of $2.3 million over three years versus costs of $562,000, adding up to a net present value (NPV) of $1.7 million and an ROI of 304%.

> “We have it as a standard for the world.”
>
> **HEAD ARCHITECT OF INFRASTRUCTURE AND SECURITY, MANUFACTURING**

Return on investment (ROI)

304%

Benefits PV

$2.3M

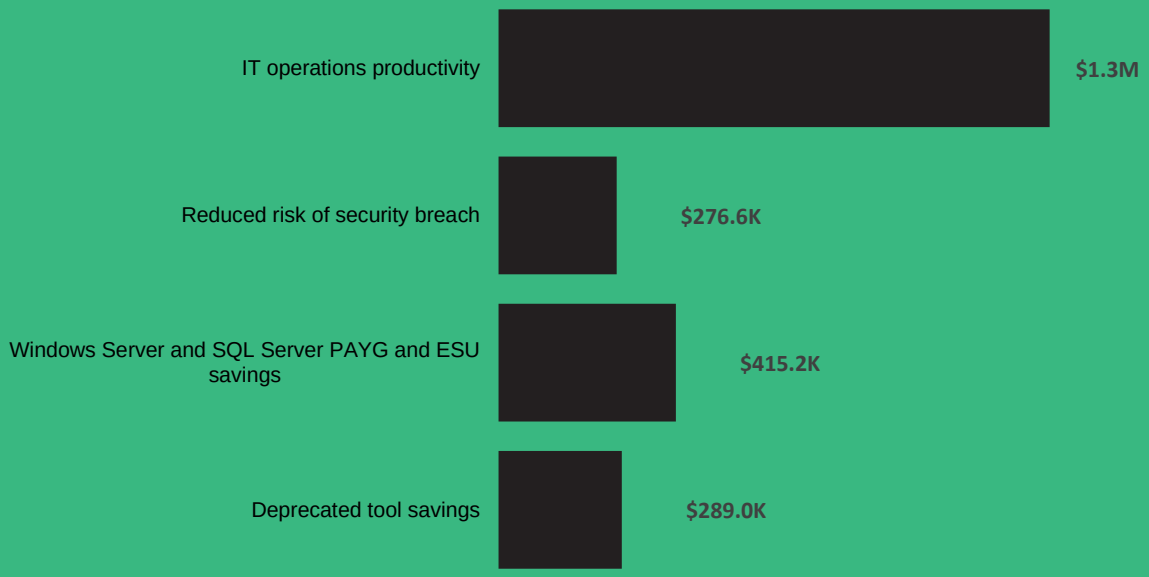
Net present value (NPV)

$1.7M

Payback

<6 months

Benefits (Three-Year)



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 Azure Arc with cloud-based management services.

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 Azure Arc can have on an organization.

DISCLOSURES
Readers should be aware of the following:

This study is commissioned by Microsoft 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 Azure Arc.

Microsoft 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.

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

Due Diligence
Interviewed Microsoft stakeholders and Forrester analysts to gather data relative to Azure Arc.

Interviews
Interviewed four people at organizations using Azure Arc to obtain data about 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 Microsoft Azure Arc Customer Journey

Drivers leading to the Azure Arc investment

Interviews			
Role	**Industry**	**Region**	**Revenue/Budget**
IT operations director	Manufacturing	Global	$30 billion in revenue
Solutions manager	Cloud solutions provider	Global	$2.5 billion in revenue
IT statewide manager	State government	US	$50 billion state budget
Head architect of infrastructure and security	Manufacturing	Global	$100 million in revenue

KEY CHALLENGES

Before implementing Azure Arc, the interviewees' organizations lacked the tools to centrally visualize and manage their vast, hybrid, multicloud IT infrastructure. This meant that security, administration, performance tuning, and licensing activities were suboptimal. In addition to labor inefficiencies, there was greater security risk, a lack of enforceable standard policies, missed licensing optimizations, and limited ability to apply best practices widely. Interviewees' organizations lack an aggregated view of their infrastructures, which hindered thorough strategy development and implementation, such as establishing a common strategy of transitioning to cloud environments.

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

- **A lack of visibility and control.** The lack of a centralized toolset with visibility across the interviewees' organizations' IT infrastructure hindered the ability to set standards, making it difficult to deliver consistent and efficient services across the organizations. It became increasingly harder to discover weaknesses and apply best practices, leading to

a more reactive environment, thus causing the IT operations teams to respond to incidents rather than proactively preventing them.

- **Suboptimal environment managed by multiple tools.** Having multiple tools and platforms to manage their systems was not only more costly for the interviewees' organizations from a software cost standpoint but also increased administration costs due to time needed for context-switching and multiple log-ons. It also required specific skills to use the various tools, leading to additional labor costs for training.
- **Risks with security.** Interviewees' organizations struggled to create and enforce cybersecurity standards, leading to greater risk. The lack of visibility led to issues when applying patches and updates essential to maintaining a secure environment.
- **Costly extended security update processes.** Interviewees' organizations were faced with a global procurement nightmare each year, with annual renewals spanning across multiple countries and multiple vendors. This led to significant time and effort by multiple teams and challenges coordinating and validating proper updates.
- **A hindrance to strategic initiatives.** Lack of full infrastructure visibility led to challenges to setting applicable strategies. Building cloud-native applications or even transitioning to the cloud were difficult. Visibility was a problem, and both IT and the business were hesitant to commit to the cloud because it required massive effort, considering the variety of cloud-based administrative and security systems.
- **Inefficient use of administrative and security labor.** Having multiple domains and systems that did not communicate with each other led to inefficiencies and wasted time on extra hardware and software management. Coordinating with different domain owners and conducting meetings to deliver security updates was time-consuming. Reporting, both for operational use and audits, required drawing information from multiple reports.

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 interviewees' organizations, and it is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. A corporation with $40 billion in annual revenue, the composite organization has an IT infrastructure with 4,000 assets, including 1,000 Windows Servers and 250 SQL Servers, as well as virtual machines, other databases, and Kubernetes clusters. The composite organization has assets running in on-premises locations, Azure, and other cloud platforms. The IT operations team providing infrastructure support has 10 members.

Deployment characteristics. The composite organization centralizes control of the IT infrastructure to maximize use of the cloud and Azure Arc. The transition to Azure Arc and related services was 40% in Year 1, with a decrease to an additional 20% in Year 2 and 15% in Year 3. This decrease is due to factors like infrastructure management responsibilities and assets that can't be transitioned to Azure Arc management sooner due to multiyear licenses or other situations.

Key Assumptions

$40 billion in revenue
4,000 assets
1,000 Windows Servers
250 SQL Servers
10 FTEs in IT infrastructure operations

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	IT operations productivity	$362,880	$544,320	$680,400	$1,587,600	$1,290,937
Btr	Reduced risk of security breach	$68,478	$114,130	$159,782	$342,390	$276,622
Ctr	Windows Server and SQL Server PAYG and ESU savings	$222,488	$156,506	$111,244	$490,238	$415,184
Dtr	Deprecated tool savings	$60,000	$120,000	$180,000	$360,000	$288,956
	Total benefits (risk-adjusted)	$713,846	$934,957	$1,131,425	$2,780,228	$2,271,700

IT OPERATIONS PRODUCTIVITY

Evidence and data. Interviewees shared that the IT operations personnel in their organizations experienced a time savings of approximately 30% for their regular responsibilities, which included tasks like configuring and updating infrastructure, managing policies and permissions, and troubleshooting and resolving issues. The interviewees also stated that the productivity of the IT operations team improved not only due to the convenience of managing hybrid and multicloud infrastructure through a single interface, but also because of the added benefits of automation. As a result, the time saved allowed the interviewees' organizations' IT operations teams to focus on more valuable tasks, such as innovation.

- Interviewees noted that Azure Arc provided automation capabilities that streamlined processes and reduced the need for manual intervention. This resulted in time savings and improved operational efficiency.

> "We spent a lot of time building out automation. … This saves time and improves onboarding."
>
> HEAD ARCHITECT OF INFRASTRUCTURE AND SECURITY, MANUFACTURING

- Azure Arc simplified the process of pushing updates and rollouts for the interviewees' organizations' on-premises Windows Servers and SQL Servers, reducing the time and effort required for these tasks.

> "Azure Arc saves us approximately 75% of the time for updates and rollouts for our many on-premises Windows Servers."
>
> HEAD ARCHITECT OF INFRASTRUCTURE AND SECURITY, MANUFACTURING

- According to interviewees, Azure Arc enabled centralized administration and better visibility of licensing, which reduced administrative burden and the time spent managing licenses. This led to significant labor productivity improvements for the interviewees' organizations.
- Azure Arc provided better control and visibility over the entire infrastructure at the interviewees' organizations, which enabled efficient vulnerability management and patching. Streamlining security operations reduced the time and effort required for security-related tasks.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization has 4,000 total infrastructure assets.
- By Year 1, the composite organization has enabled 40% of supported assets in Azure Arc. It enables 60% by Year 2 and 75% by Year 3.

- Before Azure Arc, IT operations personnel spent an average 30 hours per year governing each infrastructure asset.
- Once the asset is Azure Arc-enabled, average asset administrative effort is reduced by 30%.
- IT operations team members capture and use 75% of the time they save for other productive tasks (e.g., innovation).

Risks. This benefit may vary across organizations for the following reasons:

- The number of infrastructure assets that can be Azure Arc-enabled is specific to each organization.
- Time spent managing each asset before and after Azure Arc enablement based on resource availability and skill.
- IT operations compensation.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $1.3 million.

> "The automation code that Azure Arc provides has helped us go faster in the enrollment process."
>
> **IT OPERATIONS DIRECTOR, MANUFACTURING**

IT Operations Productivity					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
A1	Total infrastructure assets (e.g. servers, VMs, etc.)	Composite	4,000	4,000	4,000
A2	Percentage of Azure Arc-enabled infrastructure assets	Interviews	40%	60%	75%
A3	Infrastructure assets that are Azure Arc-enabled	A1*A2	1,600	2,400	3,000
A4	IT operations on-premises annual updates and governance (hours/asset)	Interviews	30	30	30
A5	Percentage of IT operations time saved due to Azure Arc	Interviews	30%	30%	30%
A6	IT operations total hours saved annually due to Azure Arc	A3*A4*A5	14,400	21,600	27,000
A7	Fully burdened hourly rate for an IT operations team member	Composite	$42	$42	$42
A8	Percentage of time captured for productive use	Composite	75%	75%	75%
At	IT operations productivity	A6*A7*A8	$453,600	$680,400	$850,500
	Risk adjustment	↓20%			
Atr	IT operations productivity (risk-adjusted)		$362,880	$544,320	$680,400
	Three-year total: $1,587,600			**Three-year present value: $1,290,937**	

REDUCED RISK OF SECURITY BREACH

Evidence and data. According to the interviewees, integrating Azure Arc with their organizations' infrastructures resulted in enhanced security in two key ways. Firstly, it provided an easier means for identifying and updating infrastructure that did not meet the latest security standards. Secondly, the organizations were able to safeguard their Azure Arc-enabled infrastructure using Microsoft observability and security services, such as Azure Monitor, Microsoft Defender for Cloud, and Microsoft Sentinel. With Azure Arc, these security services could be implemented throughout the organizations with additional functionalities. As a result of Azure Arc integration, some interviewees' organizations replaced their previous security solutions and standardized their usage of security services from Microsoft. Interviewees also noted:

- Discovery capabilities identified assets previously not managed by the security operations center.

- Expanded asset visibility led to more comprehensive best practices assessments, helping to identify and fill security gaps.
- Azure Arc provided visibility into patching and updates, ensuring servers were up to date with critical security updates and ESU patches.
- A single security solution allowed standardization of security policies and controls and allowed enhanced threat detection across critical pathways.
- Next-generation monitoring and response shortened time to identify and to respond to security incidents, thus reducing both the risk of a breach and the magnitude of a breach if one were to occur.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite's mean cumulative cost of total breaches per year totals $5,086,000.[2]
- The composite's likelihood of experiencing one or more breaches in a year is 68%.[3]
- The percentage of breaches originating from external attacks targeting organizations is 33%.[4]
- The percentage of those external attacks that are addressable with security services from Microsoft is 15% in Year 1, 25% in Year 2, and 35% in Year 3.
- The risk reduction for a breach due to security services from Microsoft is 50%.

Risks. This benefit may vary across organizations for the following reasons:

- The cost of a data breach based on industry, organization size, etc.
- The risk of a data breach from noncompliant infrastructure before enabling security and observability services due to both unique characteristics of the organization (e.g., some industries may have higher exposure) as well as factors outside the organization's control (e.g., global trends).
- The percentage of infrastructure noncompliant with security standards before security services from Microsoft.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $277,000.

Security Spotlight

"In our security operations center, instead of getting three different workspaces each with all these different signals, now all the telemetry is flowing into one. And so, it allows us to better do threat hunting to recognize threats when they're occurring on the network."

SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER

"Azure Arc has given us visibility across the estate and helped us identify servers that weren't receiving patches regularly."

IT STATEWIDE MANAGER, STATE GOVERNMENT

"It has helped us when it comes to vulnerability management and really getting the patching done timely and correctly."

HEAD ARCHITECT OF INFRASTRUCTURE AND SECURITY, MANUFACTURING

"It simplifies it by having that single security appliance … if you need to make a change, you can do so very quickly."

SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER

"Azure Arc enabled us to have our current security strategy. Without having Arc, you need to find a different way of enabling these things."

HEAD ARCHITECT OF INFRASTRUCTURE AND SECURITY, MANUFACTURING

Reduced Risk Of Security Breach					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
B1	Cumulative cost of breaches for the composite	Forrester Research	$5,086,000	$5,086,000	$5,086,000
B2	Likelihood of the composite will experience one or more breaches	Forrester Research	68%	68%	68%
B3	Percentage of breaches originating from external attacks targeting organizations	Forrester Research	33%	33%	33%
B4	Percentage of those attacks addressable with security services from Microsoft	Interviews	15%	25%	35%
B5	Annual risk exposure addressable with security services from Microsoft	B1*B2*B3*B4	$171,195	$285,325	$399,454
B6	Reduced risk of exposure to breach costs from addressable attacks with security services from Microsoft	Interviews	50%	50%	50%
Btr	Reduced risk of security breach	B5*B6	$85,598	$142,663	$199,727
	Risk adjustment	↓20%			
Btr	Reduced risk of security breach (risk-adjusted)		$68,478	$114,130	$159,782
	Three-year total: $342,390			**Three-year present value: $276,622**	

WINDOWS SERVER AND SQL SERVER PAYG AND ESU SAVINGS

Evidence and data. Interviewees reported that Azure Arc provided a PAYG pricing feature for on-premises Windows Server and SQL Server like Azure's consumption pricing model, leading to savings over the prior capacity pricing. ESUs for Windows Servers and SQL Servers that were no longer receiving security updates as part of licensing could shift from reseller licensing to direct licensing through Microsoft. This saved the interviewees' organizations money by eliminating vendor markups and also enabled month-to-month payments vs. annual payments, which reduced upfront costs and the cost for deprecated servers to the months that they were in service. In addition, interviewees noted procurement processes were simplified by working only with Microsoft instead of multiple vendors in multiple countries.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization has 1,000 total Windows Servers.
- By Year 1, the composite organization has 50% of Windows Servers on-premises. It has 35% of Windows Servers on-premises by Year 2 and 25% by Year 3.
- The composite has Windows Servers with an average licensing cost of $3,000 per year.
- The composite organization has 250 total SQL Servers.
- By Year 1, the composite organization has 50% of SQL Servers on-premises. It has 35% of SQL Servers on-premises by Year 2 and 25% by Year 3.
- The composite has SQL Servers with an average licensing cost of $7,500 per year.
- Savings per server due to PAYG licensing is 10% of the historical license total.
- By Year 1, 10% of Windows Servers and SQL Servers require ESUs. By Year 2, 7.5% of Windows Servers require ESUs and 5% of Windows Servers require ESUs by Year 3.
- The composite has a server ESU cost of $480 per year.
- Savings per server due to ESU licensing is 10% of the historical ESU cost.

> “From a cost standpoint, there are some savings because we’re able to procure directly essentially instead of having to go through an additional party vendor that may have markups.”
>
> **SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER**

Risks. This benefit may vary across organizations for the following reasons:

- Metrics like the number of Windows Servers, Windows Server on-premises percentages, and Windows Server ESU percentages.
- The average cost or savings per Windows Server licensing and ESUs.

- Metrics like the number of SQL Servers, SQL Server on-premises percentages, and SQL Server ESU percentages.
- Average cost or savings per SQL Server licensing and ESUs.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $415,000.

> "The on-premises licensing model is now like cloud utilization. For example, we can turn down SQL servers that we are not needing on weekends or after hours, and don't get charged for that time period."
>
> SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER

> "The ESU procurement process used to be a major burden. The combination of vendor and country combinations meant we had 40 to 50 annual renewals, involving three to four people for each."
>
> HEAD ARCHITECT OF INFRASTRUCTURE AND SECURITY, MANUFACTURING

Windows Server And SQL Server PAYG And ESU Savings					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
C1	Windows Server count	Composite	1,000	1,000	1,000
C2	Percentage of Windows Servers on-premises	Interviews	50%	35%	25%
C3	Windows Server average annual cost per server	Composite	$3,000	$3,000	$3,000
C4	SQL Server count	Composite	250	250	250
C5	Percentage of SQL Servers on-premises	Interviews	50%	35%	25%
C6	SQL Server average annual cost per server	Composite	$7,500	$7,500	$7,500
C7	Server PAYG savings (on-premises)	Interviews	10%	10%	10%
C8	Server percentage requiring ESUs	Interviews	10.0%	7.5%	5.0%
C9	Server annual ESU cost per server	Composite	$480	$480	$480
C10	Server ESU cost savings per server	Interviews	30%	30%	30%
Ct	Windows Server and SQL Server PAYG and ESU savings	C1*C2*C3*C7+C4*C5*C6*C7+(C1+C4)*C8*C9*C10	$261,750	$184,125	$130,875
	Risk adjustment	↓15%			
Ctr	Windows Server and SQL Server PAYG and ESU savings (risk-adjusted)		$222,488	$156,506	$111,244
	Three-year total: $490,238			**Three-year present value: $415,184**	

DEPRECATED TOOL SAVINGS

Evidence and data. According to interviewees, once Azure Arc was implemented, their organizations were able to cut down on the use of third-party software that was previously used to manage and secure their infrastructure. Azure Arc replaced the need for vendor-specific or platform-specific tools by providing a comprehensive and unified perspective of the infrastructure. Additionally, Azure Arc frequently offered enhanced capabilities, particularly in relation to Microsoft solutions. Some interviewees noted their organizations standardized their observability and security services using Azure Monitor, Microsoft Defender, and Microsoft Sentinel.

Modeling and assumptions. Based on the interviews, Forrester assumes that in Year 1, the composite organization deprecates third-party software, saving $75,000. By Year 2, the

organization's deprecated third-party software savings grows to $150,000. By Year 3, the organization's deprecated third-party software savings grows to $225,000.

Risks. This benefit may vary across organizations for the following reasons:

- The ability to sunset third-party software based on the solution capabilities.
- The cost of third-party software to be deprecated.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $289,000.

Deprecated Tool Savings					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
D1	Deprecated monitoring and security tools reduced or avoided costs	Interviews	$75,000	$150,000	$225,000
Dt	Deprecated tool savings	D1	$75,000	$150,000	$225,000
	Risk adjustment	↓20%			
Dtr	Deprecated tool savings (risk-adjusted)		$60,000	$120,000	$180,000
	Three-year total: $360,000		**Three-year present value: $288,956**		

UNQUANTIFIED BENEFITS

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

- **Enhanced visibility and control.** Interviewees noted that Azure Arc provided their organizations with visibility across on-premises and multicloud environments. Discovery capabilities identified assets for a more complete view and management of inventory. Azure Arc enabled the identification of priority servers for migration, patching, and critical security updates. Visibility into server usage enabled the interviewees' organizations to make informed decisions about server enrollments and decommissions, as well as optimize resource usage and financial planning. The manufacturing head architect of infrastructure and security at a manufacturing organization shared, "Azure Arc offers better insight and control over our [other cloud] workloads, which previously were isolated."

> "We use Azure Arc [and Azure services] as a control plane. … It allows us better management, allows us to simplify how we understand our licensing, security, even AI."
>
> **SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER**

> "Azure Arc [and Azure services] helped us better understand some of the complex networking within our company and reduced our recovery time on some load-balancer issues."
>
> **IT OPERATIONS DIRECTOR, MANUFACTURING**

- **Employee and customer satisfaction.** Automation and standardization brought about by Azure Arc reduced manual processes for the interviewees' organizations and enabled task automation, which allowed their employees to focus on more valuable tasks and fostered growth and transformation. Interviewees noted Azure Arc's ease of use combined with the reduction in manual tasks made ramping up employees a benefit rather than a chore. This also allowed new employees or new team members to be productive members of their teams' earlier. Azure Arc enhanced customer satisfaction by enabling better service and support, leading to improved retention of external customers and more dialog from internal customers on ideas for value-add activities. The state government's IT statewide manager said, "It's a fantastic tool for onboarding somebody new just to give them a quick and dirty overview of an entire footprint."

> "The ability to do hot patching on [our Windows Server] has led to 15% to 20% less downtime."
>
> **SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER**

- **Assistance from the Microsoft team.** Interviewees shared that the Microsoft team helped their organizations throughout the implementation process and beyond. The Microsoft team provided assistance and guidance, simplifying the learning curve and helping the interviewees' organizations with infrastructure management and discovery.

> "I would say there is an extremely simple learning curve, and we got a lot of help along the way from a great team at Microsoft."
>
> **IT STATEWIDE MANAGER, STATE GOVERNMENT**

> "SQL Server management after we transitioned to central management was a nightmare. When we started with Azure Arc, we probably knew about 400 or so servers. The Microsoft team helped us crawl and find all the SQL that was out there."
>
> IT STATEWIDE MANAGER, STATE GOVERNMENT

- **Audit and compliance improvements.** The central visibility, combined with the reporting capabilities of Azure Arc, simplified audit preparation and compliance reporting for the interviewees' organizations. The cloud solutions provider's solutions manager described the reporting accuracy combined with the quickness in reporting development as showcasing their licensing and compliance status, while saving time and effort. They shared, "It makes it a lot easier to just print out one compliance report."

> "We went from months responding to audit findings to weeks. The number of findings continues to go down because we're now able to get ahead of this stuff."
>
> IT STATEWIDE MANAGER, STATE GOVERNMENT

> "From a SQL server compliance standpoint, the ability to see the actual metrics of how that SQL Server's running in real time, we can scale it more appropriately, leading to better runtime for their applications."
>
> SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER

FLEXIBILITY

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

- **Scalability and flexibility (operational agility).** Interviewees shared that by having better tools to manage software and security policies, their organizations became more agile in responding to operational needs and security incidents. Azure Arc helped their IT operations and development teams respond to new requests or change requests more quickly. Due to Azure Arc's central controls, some interviewees noted that their organizations were able to provide dashboards to other internal organizations to understand, monitor, and perform certain administrative activities.

> "The ability to be elastic … saves a lot of time for operational teams."
>
> SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER

> "We've seen a 10% increase in our ability to deliver more quickly."
>
> SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER

- **Preparing for future — AI readiness, cloud migrations.** Interviewees shared that Azure Arc enabled cloud migrations and application modernization, simplified the adoption of other Azure services, and had better prepared their organizations for adopting future technologies, such as AI. The manufacturing IT operations director said, "When we put the agent on the Windows Servers, it auto detected if it had a database and also put the database components on there."

> "It actually helps with our maturity path and build a cloud foundation to be ready for AI."
>
> SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER

> "It's actually introduced some goals for us. … It's helped us accelerate things that we needed to be on time from the beginning."
>
> SOLUTIONS MANAGER, CLOUD SOLUTIONS PROVIDER

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	Azure services consumption fees	$0	$139,200	$208,800	$261,000	$609,000	$495,201
Ftr	Training and implementation costs	$32,340	$13,860	$13,860	$13,860	$73,920	$66,808
	Total costs (risk-adjusted)	$32,340	$153,060	$222,660	$274,860	$682,920	$562,009

AZURE SERVICES CONSUMPTION FEES

Evidence and data. The interviewees' organizations paid no costs to use Azure Arc. To realize the full benefits of Azure Arc, though, the organizations invested in Azure services for the Azure Arc-enabled assets for governance, management, networking, and security.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- There is no cost for onboarding assets to Azure Arc-enabled servers.
- The average cost of various Azure governance, management, networking, and security services from Microsoft is $72.50 per asset per year.
- The composite organization has 4,000 total infrastructure assets. By Year 1, the organization has enabled 40% of supported assets in Azure Arc. By Year 2, it has enabled 60%, and by Year 3, it has enabled 75%.

Risks. This cost may vary across organizations for the following reasons:

- The mix of Azure services.
- The Azure Arc enabled asset count.
- Azure consumption based on organizational needs.

Results. To account for these risks, Forrester adjusted this cost upward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $495,000.

Azure Services Consumption Fees						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
E1	Cost of licensing Azure Arc	Composite		$0	$0	$0
E2	Infrastructure assets that are Azure Arc-enabled	A3		1,600	2,400	3,000
E3	Azure service fees per asset (annual)	Interviews		$72.50	$72.50	$72.50
Et	Azure services consumption fees	E2*E3	$0	$116,000	$174,000	$217,500
	Risk adjustment	↑20%				
Etr	Azure services consumption fees (risk-adjusted)		$0	$139,200	$208,800	$261,000
	Three-year total: $609,000			**Three-year present value: $495,201**		

TRAINING AND IMPLEMENTATION COSTS

Evidence and data. Interviewees shared that initial Azure Arc IT operations training went smoothly and their team was proficient at using Azure Arc within a few weeks to a month. Implementation of Azure Arc included planning through execution. More effort was needed when new policies, processes, and workflows were developed. Training and implementation continued throughout the three-year time period due to enhancements, multiphase initiatives, and focus area changes.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- There are 10 IT operations personnel managing supported infrastructure assets.
- The fully burdened hourly salary for an IT operations team member is $42.
- IT operations personnel receive an initial 20 hours of initial training over approximately a month and then need an average of 10 hours of training in subsequent years.
- IT operations personnel spend 500 hours initially on implementation activities then 200 hours throughout the remainder of Year 1 and in each subsequent year.

Risks. This cost may vary across organizations for the following reasons:

- IT operations experience with Azure and applicable Azure services.
- Training needs based on skill level.
- The average cost of the IT operations team members.
- The complexity of the asset infrastructure.
- The priorities on timing and scope for implementation.

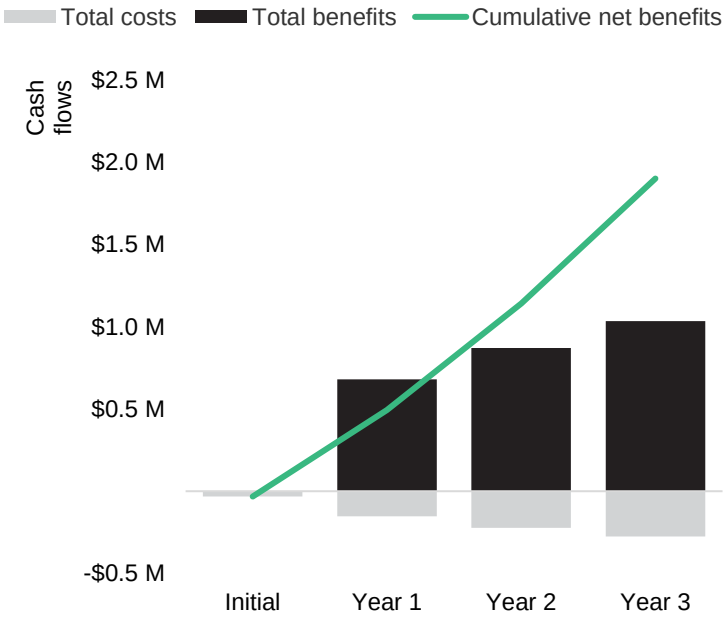
Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $67,000.

Training And Implementation Costs						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
F1	IT operations FTEs managing infrastructure assets	Interviews	10	10	10	10
F2	Initial and on-going training (hours per IT operations FTE)	Interviews	20	10	10	10
F3	IT operations hours per year with implementation activities	Interviews	500	200	200	200
F4	Fully burdened hourly rate for an IT operations FTE	Composite	$42	$42	$42	$42
Ft	Training and implementation costs	(F1*F2+F3)*F4	$29,400	$12,600	$12,600	$12,600
	Risk adjustment	↑10%				
Ftr	Training and implementation costs (risk-adjusted)		$32,340	$13,860	$13,860	$13,860
	Three-year total: $73,920			**Three-year present value: $66,808**		

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	($32,340)	($153,060)	($222,660)	($274,860)	($682,920)	($562,009)
Total benefits	$0	$713,846	$934,957	$1,131,425	$2,780,228	$2,271,700
Net benefits	($32,340)	$560,786	$712,297	$856,565	$2,097,308	$1,709,691
ROI						304%
Payback						<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 solution providers in communicating their value proposition to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of business and technology initiatives to both senior management and other key stakeholders.

Total Economic Impact Approach

Benefits represent the value the solution delivers to the business. The TEI methodology places equal weight on the measure of benefits and costs, allowing for a full examination of the solution's effect on the entire organization.

Costs comprise all expenses necessary to deliver the proposed value, or benefits, of the solution. The methodology captures implementation and 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. 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."

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.

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.

APPENDIX B: ENDNOTES

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

[2] Source: Forrester's Security Survey, 2023. Base 1,542 security decision-makers from organizations that have experienced a breach in the past 12 months. Forrester annually assesses cybersecurity metrics through interviews, surveys, and expertise in the field. Analyses are provided with information rooted with specific data sets most accurately applied to the situations that have been collected in the study.

[3] Ibid.

[4] Ibid.

FORRESTER®