The Total Economic Impact™ Of Epic On Microsoft Azure

Cost Savings And Business Benefits Enabled By Epic On Azure
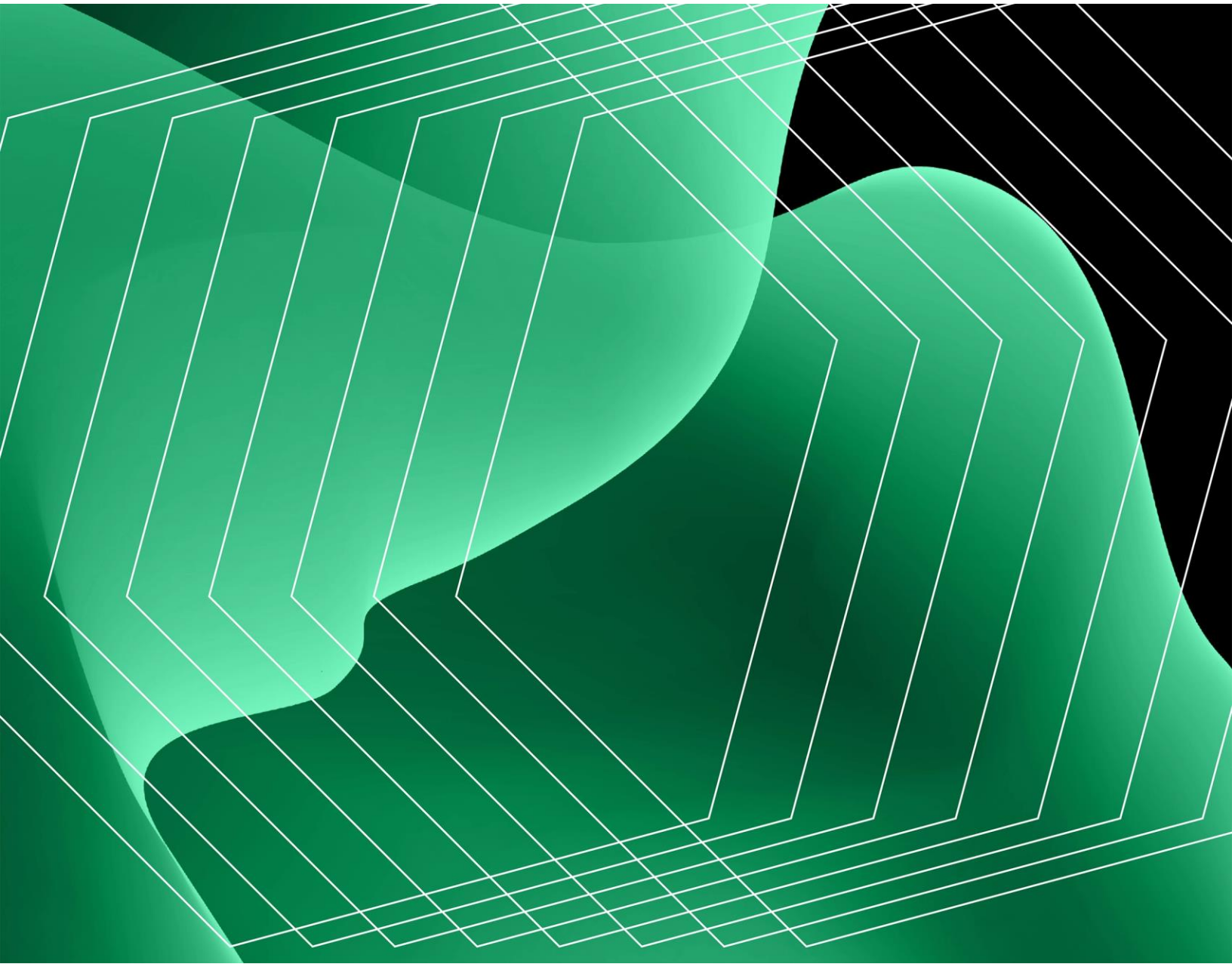
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ABOUT FORRESTER CONSULTING

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.

Executive Summary

As healthcare organizations face mounting pressure to modernize, scale, and innovate, many are adopting a cloud-first strategy to transform their mission-critical Epic environments. Migrating Epic workloads from on-premises infrastructure to Microsoft Azure can enable providers to retire aging systems, accelerate provisioning, and gain granular cost visibility and control, while representing a strategic shift toward agility, resilience, and future-readiness. Through Azure's integration with Epic, healthcare systems can scale resources dynamically, respond to evolving clinical demands, and potentially unlock new capabilities in AI, data analytics, and research.

Microsoft Azure allows healthcare organizations to reframe how they manage Epic environments, transitioning from capital-intensive infrastructure to a flexible opex model that supports dynamic scaling and continuous optimization. Azure's unified platform provisions high-volume, high-velocity data such as imaging, genomics, and real-time monitoring within a consistent cloud environment that can be reserved for predictable workloads or scaled dynamically as needs evolve. This architecture lays the groundwork for advanced analytics and AI-driven innovation without requiring specialized infrastructure or staffing.

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 Epic on Azure.[1] The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Epic on Azure on their organizations.

Return on investment (ROI)
162%

Net present value
$43.2M

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed seven decision-makers from five organizations with experience using Epic on Azure. For the purposes of this study, Forrester aggregated the experiences of the interviewees and combined the results into a single composite organization, which is a US-based healthcare organization with 30,000 employees, revenue of $6 billion per year, and $200 million in infrastructure.

Interviewees said that prior to migrating to Azure, their organizations hosted Epic either in on-premises data centers configured in A/B failover fashion or through managed private cloud services provided by third-party vendors. The on-prem environments were capital-intensive and required multimillion-dollar hardware refreshes every three to five years while also lacking the elasticity they needed to scale with organizational growth.

An interviewed VP of technology and CTO at a healthcare organization said their company used a managed hosting model that became unsustainable when the provider exited the Epic hosting business, which prompted a reevaluation of long-term infrastructure strategy. Furthermore, interviewees said that in order to accommodate future capacity needs, their organizations often purchased hardware months or even years in advance, which tied up capital and resources in infrastructure that would sit idle until needed.

Interviewees said that after investing in Epic on Azure, their organizations shifted toward flexible provisioning, cost control, and resilient access. They also explained that Azure uses a pay-as-you-go model that allowed their organizations to align spend with actual use and that having reserved capacity ensured resource availability, optimized costs, and enabled rapid adoption of newer, more efficient server configurations. One interviewee said their organization created a dedicated cloud cost analyst role to oversee compute and storage utilization daily and optimize spend.

Several interviewees also said their organization leveraged Azure Virtual Desktop (AVD) to streamline Epic access across regions, which enabled rapid failover and minimized disruption during connectivity issues. They explained that these capabilities allowed teams to respond faster to clinical and operational needs, trial new technologies, and adopt emerging innovations without the constraints of legacy infrastructure.

KEY FINDINGS

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

- **Epic infrastructure footprint reduction of 90% over three years.** Epic and its supporting systems accounts for 50% to 60% of the composite organization's infrastructure footprint. By migrating its Epic workloads to Azure, the composite modernizes its Epic infrastructure strategy by shifting from capex-heavy, overprovisioned environments to scalable, cloud-native services. Because it gradually decommissions its legacy infrastructure and physical footprint — including storage and colocation costs — it reduces those costs by 50% in Year 1, 75% in Year 2, and 90% in Year 3. Transitioning

from capex to opex also improves the organization's cost visibility and asset optimization. Overall, the migration allows the composite to avoid $46.7 million in hardware refresh costs.

- **Accelerated infrastructure modernization.** By leveraging Microsoft's integrated cloud ecosystem — including Defender, Sentinel, and Fabric — the composite organization retires two legacy platforms: a cybersecurity solution that costs $6 million and a data analytics platform that costs $4 million. Rather than building and maintaining separate cloud-native security and analytics stacks, the composite adopts Microsoft's native security and analytics stack to gain full-spectrum protection and insight. This shift eliminates the organization's integration complexity, operational overhead, and need for third-party licensing, resulting in $21.1 million in avoided costs over three years.

- **Server provisioning efficiency.** The composite typically spins up 50 servers annually, and each costs $4,500 with an additional 10% in colocation fees. By moving to Azure, the organization streamlines server deployment from weeks or months per instance to minutes while eliminating the need to overprovision infrastructure up front. Having this flexibility combined with saving 40 hours of IT time per server saves the composite $641,000 in avoided investment and labor costs over three years.

- **Reduction in exposure to breach costs from external attacks by 35%.** The composite does not incur any breaches before or after migrating its Epic workloads to Azure. By consolidating its security operations into Microsoft Defender and Sentinel, the organization gains real-time visibility into its risk landscape and proactively addresses 75% of external attack vectors, which lowers its likelihood of having a breach and the impact of related costs. This strategic alignment contributes to $1.2 million in avoided breach costs over three years.

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

- **Strategic agility and elastic scalability.** Azure's cloud-native architecture enables the composite organization to dynamically scale infrastructure in response to changing clinical and operational demands, which enables rapid provisioning of test environments while supporting innovation and growth through mergers, acquisitions, and organic expansion without the need to overprovision.

  Azure also has multiregion architecture that supports the composite's failover strategies, ensuring continuity of clinical operations during high-demand periods and enabling proactive risk management. Additionally, built-in compliance capabilities designed to

meet HIPAA and Health Information Trust Alliance (HITRUST) standards reduce the organization's need for manual patching while streamlining operations.

- **Future-proofing through AI readiness.** Azure's integrated AI capabilities and scalable compute power help the composite organization with clinical and operational innovation. Colocating Epic data with Azure's AI services reduces the organization's latency and complexity, enabling experimentation with large language models (LLMs), predictive analytics, and automation.

- **Microsoft's strategic partnership with Epic.** Epic's deployment of its platforms directly in Azure reflects Microsoft's enterprise-grade capabilities. For the composite organization, this alignment creates a seamless ecosystem that simplifies data integration and accelerates insights.

> "Moving to Azure was a resiliency play that comes from operational resiliency and data center resiliency ... and then the final leg is financial resiliency. … We moved Epic to the cloud to build it differently [and] build it in a way that could support zero trust type architecture methodologies."
>
> **CTO AND CISO**

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

- **Azure licensing costs of $19 million.** The composite organization invests $600,000 per month in Azure licensing, which includes Microsoft Defender, Sentinel, and related services. This represents a strategic shift from on-premises systems to a more secure, scalable cloud infrastructure.

- **Professional services costs of $4.5 million.** To accelerate its cloud transformation and ensure the environment evolves with Epic's infrastructure requirements, regulatory mandates, and technical standards, the composite partners with a Microsoft-recommended third-party provider to architect and implement Azure over an 18-month timeline.

- **Internal implementation costs of $2.3 million.** Because Epic migration demands deep operational alignment (e.g., system configuration, data migration, integration, rigorous testing), the composite's internal teams test and validate workflows, optimize post-migration performance, and ensure the deployment reflects the organization's clinical and operational priorities.

- **Ongoing internal management costs of $853,000.** To maintain compliant, uninterrupted operations and ensure consistent upkeep — including patching, upgrades, and performance tuning — the composite's internal teams maintain continuous coordination with Epic and Microsoft to align with evolving clinical and operational needs.

- **Training fees of $77,000.** To empower system administrators, engineers, and database specialists to be proficient across both cloud and on-prem environments, the composite's IT staff members are cross-trained in Azure to manage hybrid infrastructure and support cloud-based Epic deployments.

The financial analysis that is based on the interviews found that a composite organization experiences benefits of $68.2 million over three years versus costs of $26.6 million, adding up to a net present value (NPV) of $41.7 million and an ROI of 157%.

Reduction in Epic infrastructure costs over three years

90%

ROI

162%

BENEFITS PV

$69.8M

NPV

$43.2M

PAYBACK

<6 months

Benefits (Three-Year)

Savings from avoiding on-premises Epic hardware refresh — **$46.7M**

Cost avoidance of other legacy solutions — **$21.1M**

Time and cost savings per new server spin up in Azure — **$641K**

Cost avoidance of a security breach — **$1.2M**
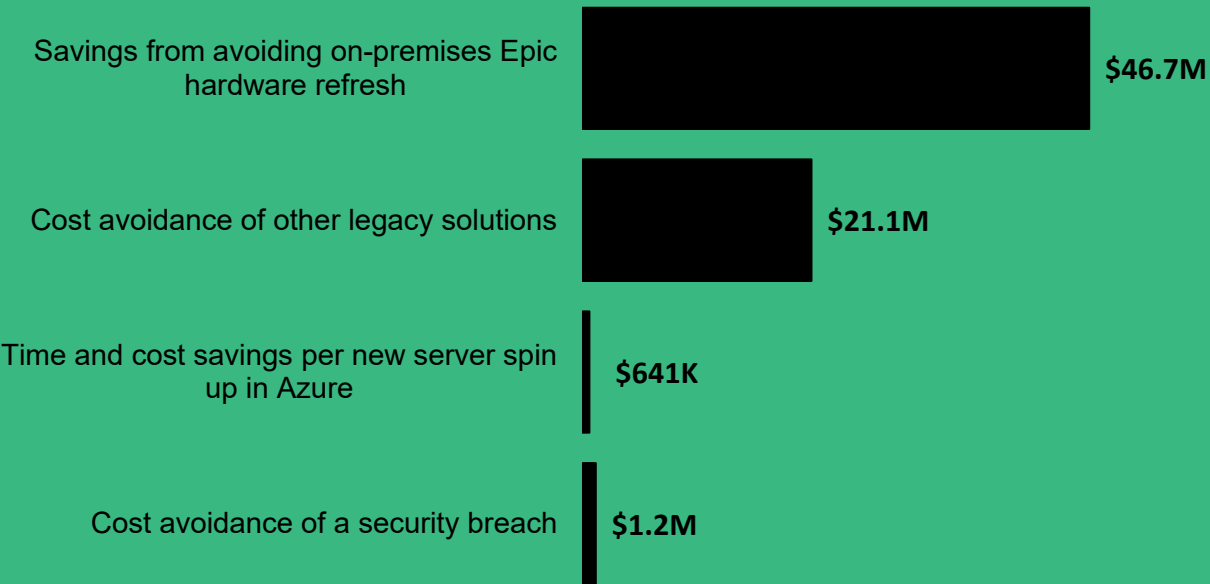
TEI FRAMEWORK AND METHODOLOGY

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

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 Epic on Azure 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 Epic on Azure.

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.

1. **Due Diligence**
   Interviewed Microsoft stakeholders and Forrester analysts to gather data relative to Epic on Azure.

2. **Interviews**
   Interviewed seven decision-makers at five organizations using Epic on Azure to obtain data about costs, benefits, and risks.

3. **Composite Organization**
   Designed a composite organization based on characteristics of the interviewees' organizations.

4. **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.

5. **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 Epic On Microsoft Azure Customer Journey

Drivers leading to the Epic on Azure investment

Interviews				
Role	**Industry**	**Revenue**	**Number Of Hospitals**	**Number Of Employees**
CTO and CISO	Healthcare	$15B	32 hospitals	68,000
AVP for IT strategy and finance	Healthcare	$4B	14 hospitals	21,000
Lead enterprise architect	Healthcare	$4B	14 hospitals	21,000
VP of technology and CTO	Healthcare	$4B	12 hospitals	20,000
Finance operations director	Healthcare	$4B	12 hospitals	20,000
Chief transformation officer	Healthcare	$3.7B	11 hospitals	16,000
Executive director of enterprise architecture	Healthcare	$1.6B	4 hospitals	9,000

KEY CHALLENGES

Interviewees said that prior to migrating Epic to Microsoft Azure, their organizations had heavily invested in on-prem infrastructure to support Epic and related workloads. They explained that while these environments were well-managed, they still presented persistent challenges that limited agility, increased costs, and constrained scalability.

Interviewees described how their organizations struggled with common challenges, including:

- **Excess capital costs, overprovisioning, and infrastructure inefficiencies.**
  Interviewees said legacy infrastructure required significant up-front investment and long-term planning to accommodate future growth. The executive director of enterprise architecture explained: "I have to buy over capacity. ... [My organization needs] enough capacity today to last five years. In Azure, I don't have to do that. I can set aside and

reserve what I need today. Then I can grow that over time, or if I see that the vendors had over-specified the hardware, I can shrink it as well."

The chief transformation officer said: "We have a data center. … We've only used about half of the capacity of the data center. So there's a whole half of it that hasn't even been built out yet, which — now that we're moving to the cloud — we probably won't have to build it out."

- **Operational friction from supply chain and provisioning delays.** On-prem and managed hosting models required lengthy procurement cycles, manual hardware configuration, and coordination across multiple infrastructure teams. The executive director of enterprise architecture said, "We had to purchase hardware months in advance — often before we actually needed it — just to ensure that we would have it available when we did."

  The VP of technology and CTO emphasized: "If I had to go through a capital equipment purchasing cycle in our environment, that would probably be somewhere between two and three months that I would have to wait in order to get the hardware. And then my team would have to rack and stack it in the data center, connect it, load the operating system, and get it ready to roll." This approach created excess overhead and tied up capital in infrastructure the organization might not have needed for months or years.

- **Limited agility in testing and deploying new applications.** Legacy environments made it difficult to experiment with new technologies or scale up quickly. The executive director of enterprise architecture said: "Whenever we have a new application that we're trying out to replace [another solution] … typically, we would have to buy additional hardware to be able to support both at the same time. But because we don't have to buy that hardware, we now have the ability to spin up a proof of concept without making infrastructure purchases."

- **Constrained visibility into resource utilization and cost attribution.** Interviewees' organizations struggled to accurately track resource consumption and allocate costs in shared environments. The VP of technology and CTO said, "When you're using shared storage [on-prem], you have to make assumptions about what percentage of the environment those applications may be using because there's really no way of making that determination."

- **Storage growth and infrastructure management complexity.** Expanding storage capacity in the organizations' on-prem environments required significant manual effort and planning. The executive director of enterprise architecture said: "We are going to

have to ramp up our storage because we are on pace to run out of what we are currently allocated. In the past, we would have had to purchase additional hardware for that. Now we just can ask for additional storage through Microsoft and change the SKU for it." The interviewee said this shift reduced the manpower required for procurement, installation, and ongoing maintenance.

- **Fragmented disaster recovery and limited failover flexibility.** Interviewees' organizations maintained separate data centers for disaster recovery (DR), which often required full hardware duplication and complex failover processes. The CTO and CISO said: "Failover used to take 45 to 50 minutes and required rehooking all the systems. Now we can fail over to another Azure region in 32 minutes with minimal disruption."

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

Interviewees said their organizations sought a solution that could empower their teams to deliver greater operational resilience, financial agility, and strategic innovation. Their investment objectives centered on enabling transformation across infrastructure, cost management, and future-readiness. Specifically, they required a solution that could:

- **Improve operational and infrastructure resiliency.** The organizations sought a platform that could support high availability, rapid failover, and continuity of care across distributed environments.

- **Enable financial predictability and flexibility.** Interviewees emphasized the importance of shifting from large, up-front capital expenditures to scalable, consumption-based models that could adapt to changing needs.

- **Improve cost visibility and control.** Interviewees said their organizations wanted a platform that could provide granular insight into resource utilization.

- **Strategically align with cloud-native capabilities to support future innovation.** The organizations prioritized finding a platform that could support emerging workloads (e.g., AI, advanced analytics, high-performance computing) without requiring up-front multimillion-dollar investments.

- **Enhance vendor consolidation and ecosystem integration.** The organizations sought to reduce complexity with a unified platform that could integrate seamlessly with their existing Microsoft tools (e.g., Defender, Sentinel, Power BI, Fabric) to reduce overhead and accelerate deployment.

- **Support for Epic workloads and future scalability.** Interviewees said they wanted a strategic platform capable of supporting both current Epic environments and future digital transformation initiatives.

- **Security and compliance capabilities.** The organizations sought a platform that aligns with HIPAA and HITRUST standards, combines with Zero Trust architecture and Defender E5 capabilities, and would help modernize their security postures.

- **Cost and pricing flexibility.** The organizations wanted a platform that would enable predictable budgeting and provide long-term cost efficiency.

> "We are a value play. We have five vendors that are implemented at 85%. Knowing we had this great relationship with Microsoft, we already had all of our security stack in the cloud. … It was Microsoft engineer to Microsoft engineer working seamlessly. We're not looking for best-of-breed, we're looking for best-of-species."
>
> **CTO AND CISO**

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. The composite organization is a US-based healthcare provider with approximately $6 billion in annual revenue and a 25% annual growth rate across 15 campuses. It employs 30,000 individuals, including 100 IT professionals, and 13 are Epic database engineers.

The organization's infrastructure is valued at $200 million and, prior to the Azure deployment, it had an on-prem Epic environment with two data centers that each housed 3,000 servers. These

data centers operated in an A/B configuration: One served as the primary site and the other was dedicated to disaster recovery.

The IT environment supports 20 Epic environments with 25% of the database servers allocated to Epic systems. Of those, 17% are specifically dedicated to the Epic production environment.

The composite allocates $26 million to Epic-related servers, including hardware refresh, software, support services, and management (excluding Epic licensing). With rising vendor costs and aging infrastructure, its on-premises expenses increase by 3% annually.

Deployment characteristics. The composite organization executes an 18-month migration of its Epic environments to Azure. This begins with nonproduction and isolated recovery during the first 90 days to six months and culminates in full production and disaster recovery deployment with the assistance of third-party Microsoft partner.

The organization adopts Microsoft's full security stack licensing to unify its security architecture and leverages Defender, Sentinel, and cloud-posture management tools to implement a Zero Trust framework in an environment configured to Center for Internet Security (CIS) benchmarks.

KEY ASSUMPTIONS

US-based healthcare organization

$6 billion in annual revenue

25% growth rate

15 campuses

30,000 employees

100 employees in IT and security

20 Epic environments

Migrates from an on-prem solution

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	Savings from avoiding on-premises Epic hardware refresh	$12,914,550	$19,954,509	$24,661,891	$57,530,950	$46,760,674
Btr	Cost avoidance of other legacy solutions	$8,500,000	$8,500,000	$8,500,000	$25,500,000	$21,138,242
Ctr	Time and cost savings per new server spin-up in Azure	$253,406	$258,140	$263,014	$774,560	$641,314
Dtr	Cost avoidance of a security breach	$497,797	$497,797	$497,797	$1,493,390	$1,237,947
	Total benefits (risk-adjusted)	$22,165,753	$29,210,446	$33,922,702	$85,298,901	$69,778,177

SAVINGS FROM AVOIDING ON-PREMISES EPIC HARDWARE REFRESH

Evidence and data. Interviewees described Epic and its supporting systems as one of their organizations' most resource-intensive environments, representing a significant portion of their infrastructure footprints with its dedicated hardware, storage, virtual desktops, and specialized support services.

Interviewees consistently emphasized the scale and complexity of Epic environments. The CTO and CISO shared: "[If you include all of my organization's systems that support Epic,] 50% to 60% [of total hardware resources] would be a real number. But if you're saying just the Epic servers — not the virtual desktops we use to access them — it's probably 15%."

The executive director of enterprise architecture reported managing 3,500 servers per data center, with 800 (23%) dedicated to Epic. The VP of technology and CTO explained: "There are about 125 applications that integrate with Epic for functionality that is required for us to have a fully viable, functional environment. … Epic is not a complete monolithic ecosystem."

And prior to migrating Epic to Azure, the organizations faced regular infrastructure refresh cycles every three to five years, driven by performance requirements and hardware end-of-life. The costs ranged from $7 million to $14 million per cycle, depending on the size of the organization and the Epic module expansion.

Managed services contracts that bundled infrastructure, patching, and support started at $6 million to $8 million annually, escalating to $12 million over five years due to environment growth and Epic's increasing demands. The VP of technology and CTO explained: "We have to keep up with the [Epic] release cycle. And with every release, we had to install required additional presentation layer hardware. So, our cost went up over that five-year period. We had no way of looking in that environment, and if we needed to, we could shrink it to lower our cost."

Interviewees said that migrating Epic to Azure led to storage and colocation cost reductions, and their organizations identified long-term savings from reducing their storage footprints and associated colocation costs (e.g., rent, utilities, physical infrastructure).

- The lead enterprise architect shared: "We went from nine cabinets to eight inches in one cabinet for our enterprise storage. ... We did shrink quite a bit of our on-premise storage because of our move to the cloud. … about 700 square feet. So we reduced our footprint by about a third in one of our two data centers."

- The CTO and CISO estimated their organization saves $500,000 to $750,000 on colocation annually, citing reductions in physical space, security, air conditioning, and electricity. They noted these benefits may be realized over time due to multiyear colocation contracts.

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

- The cost of the composite's legacy infrastructure — including hardware refresh, software licensing, support services, and data center operations — is $26 million annually.

- The prices increase 3% year-over-year in Years 2 and 3 due to rising vendor and maintenance costs. These costs represent ongoing operational expenditures and are excluded from the legacy decommissioning benefits modeled for the composite.

- As the organization migrates Epic workloads to Azure, it decommissions 50% of its legacy infrastructure in Year 1, 75% in Year 2, and 90% in Year 3.

- In parallel, the composite decommissions 15 cabinets of Epic-specific storage in Year 1, 23 in Year 2, and 27 in Year 3. These reductions contribute to 10% lower colocation expenses.

- The composite continues to migrate additional workloads to Azure as part of a broader cloud-first initiative.

Risks. The realization of this benefit will vary with:

- The organization's size and the complexity of its Epic infrastructure.

- Capital investment required for Epic database servers.

- Storage infrastructure size and allocation.

- The nature and costs of colocation contracts.

- Azure migration levels and timelines.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $46.7 million.

Savings from avoiding on-premises Epic hardware refresh over three years

$46.7M

"We were looking at close to $11 million in capital just to refresh that hardware in the data center. That was all Epic-specific. By moving to Azure, we avoided that spend entirely."

LEAD ENTERPRISE ARCHITECT

	Savings From Avoiding On-Premises Epic Hardware Refresh				
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
A1	Legacy Epic infrastructure budget (e.g., for hardware refresh, software, support, services, management costs)	Composite	$26,000,000	$27,780,000	$27,583,400
A2	Legacy Epic infrastructure cumulative decommissioned rate	Interviews	50%	75%	90%
A3	Previous spend for on-premises Epic hardware refresh	A1*A2	$13,000,000	$20,085,000	$24,825,060
A4	Removed data storage cabinets	Composite	15	23	27
A5	Cost per cabinet	Composite	$3,000	$3,090	$3,183
A6	Data center storage savings	A4*A5	$45,000	$71,070	$85,941
A7	Data center savings	A3+A6	$13,045,000	$20,156,070	$24,911,001
A8	Colocation costs	Composite	10%	10%	10%
A9	Data center colocation savings	A7*A8	$1,304,500	$2,015,607	$2,491,100
At	Savings from avoiding on-premises Epic hardware refresh	A7+A9	$14,349,500	$22,171,677	$27,402,101
	Risk adjustment	↓ 10%			
Atr	Savings from avoiding on-premises Epic hardware refresh (risk-adjusted)		$12,914,550	$19,954,509	$24,661,891
	Three-year total: $57,530,950		Three-year present value: $46,760,674		

COST AVOIDANCE OF OTHER LEGACY SOLUTIONS

Evidence and data. Interviewees detailed how their organizations retired legacy analytics and security tools and consolidated operations. They said that leveraging Microsoft's integrated cloud ecosystem (Defender, Sentinel, Databricks, Fabric), their organizations streamlined their environments and avoided the complexity and overhead associated with managing disparate vendor solutions.

- **Internal and external cost reductions from vendor tool consolidation.** Interviewees reported that consolidating multiple security tools into Microsoft Defender and Sentinel reduced complexity and enhanced visibility across hybrid environments. The CTO and CISO explained: "We are a heavy Microsoft shop. We're full E5 with P2-level licensing, cloud servers, and cloud server posture management. [By migrating Epic to Azure,] we stay in the breed and the Microsoft environment. We optimize its implementation."

- **Retirement of legacy analytics platforms.** Interviewees also reported cost avoidance by decommissioning legacy analytics solutions. The chief transformation officer said their organization replaced its previous analytics stack with Fabric and Databricks, which enabled faster report development and broader data ingestion while reducing maintenance overhead: "We're able to develop analytic reports and dashboards faster and with less maintenance than others. It certainly has allowed us to develop reports in shorter periods of time and ingest more data and make them more complete."

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

- The composite organization retires two legacy platforms: a third-party cybersecurity solution that cost $6 million and a legacy data analytics platform that cost $4 million.

- These platforms previously required ongoing investments for licensing, infrastructure, and operational overhead.

- By adopting Microsoft's security and analytics architecture, the organization eliminates the need for these legacy solutions and avoids the associated costs.

Risks. The realization of this benefit may vary depending on the cost of the organization's legacy security and analytics solutions.

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 $21.1 million.

Cost avoidance of other legacy solutions over three years

$21.1M

"We're using Databricks and AI tools and features. We're in the process of implementing Microsoft Fabric, which will allow us for more real-time data extraction out of Epic. [That] will then allow further development of AI tools and analytics to help drive the business."

CHIEF TRANSFORMATION OFFICER

Cost Avoidance Of Other Legacy Solutions					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Cost of legacy cybersecurity solution	Composite	$6,000,000	$6,000,000	$6,000,000
B2	Cost of legacy analytical platform and data warehouse	Composite	$4,000,000	$4,000,000	$4,000,000
Bt	Cost avoidance of other legacy solutions	B1+B2	$10,000,000	$10,000,000	$10,000,000
	Risk adjustment	↓ 15%			
Btr	Cost avoidance of other legacy solutions (risk-adjusted)		$8,500,000	$8,500,000	$8,500,000
Three-year total: $25,500,000			Three-year present value: $21,138,242		

TIME AND COST SAVINGS PER NEW SERVER SPIN-UP IN AZURE

Evidence and data. Interviewees said that before migrating to Azure, server provisioning was a complex, resource-intensive process that required coordination across multiple teams and significant lead time. Scaling or deploying new environments involved physical hardware procurement, racking, networking, and OS configuration that could take days or weeks. This hindered agility, especially when rapid testing or disaster recovery drills were needed.

Interviewees said that with Azure, their organizations gained the ability to spin up new environments in minutes, dramatically reducing operational overhead. They also highlighted being able to clone environments, automate deployments, and scale resources on demand. The lead enterprise architect shared: "When we stood up a new server instance on-prem, we needed at least six or seven different people just to deploy it. … We'd have one or two people physically rack the hardware and build out the operating system. That process could take days or even weeks. In the cloud, I'm doing it in 25 minutes."

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

- In the on-premises environment, provisioning a server required approximately 40 hours of effort across seven IT roles. This included time for setup, patching, and decommissioning.

- The composite provisions 50 new servers per year to support nonproduction environments (e.g., training, build, test, and disaster recovery drills).

- Each server previously cost $4,500 with a projected 3% year-over-year increase in Years 2 and 3 due to rising vendor costs and aging infrastructure.

- Colocation costs are estimated at 10% of the server cost and include the costs of power, cooling, rack space, and maintenance.

- The composite reuses and shares servers across environments, resulting in a 75% utilization factor.

- The average hourly rate per IT team member is $75, with a productivity capture rate of 75%.

Risks. The realization of these benefits will vary with:

- The number of new servers provisioned annually.

- The total amount of time required for provisioning and the number of IT team members involved.

- The type and cost of servers selected.

- Colocation expenses and contract terms (e.g., for power, cooling, rack space.)

- The level and speed of the Azure implementation.

- Salaries based on geographic location and skill set.

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 $641,000.

IT team time saved per new server provisioning
40 hours

"If I need a server for a week or two to test something, I can spin it up for a week or two. If I was on-prem, I'd have to purchase that hardware, and it might just sit there for a couple years. In the cloud, I pay for it for the couple weeks that I'm using it, [and then] I can decom it."

LEAD ENTERPRISE ARCHITECT

Time And Cost Savings Per New Server Spin-Up In Azure					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	New or refreshed nonproduction servers deployed (average)	Composite	50	50	50
C2	Cost per new server	Composite	$4,500	$4,635	$4,774
C3	Total cost for new servers for nonproduction, build, or test environment	C1*C2	$225,000	$231,750	$238,700
C4	Colocation costs of nonproduction servers	Composite	10%	10%	10%
C5	Total cost for on-premises nonproduction servers	C3*(1+C4)	$247,500	$254,925	$262,570
C6	Server utilization factor	Composite	75%	75%	75%
C7	Total avoided cost of new server spin-up due to Azure	C5*C6	$185,625	$191,194	$196,928
C8	Avoided time required to set up a nonproduction server (hours)	Composite	40	40	40
C9	Hourly rate per IT team member	Composite	$75	$75	$75
C10	Total FTE efficiencies	C1*C8*C9	$150,000	$150,000	$150,000
C11	Productivity recapture rate	TEI methodology	75%	75%	75%
C12	Time savings per FTE with Azure	C10*C11	$112,500	$112,500	$112,500
Ct	Time and cost savings per new server spin-up in Azure	C7+C12	$298,125	$303,694	$309,428
	Risk adjustment	↓ 15%			
Ctr	Time and cost savings per new server spin-up in Azure (risk-adjusted)		$253,406	$258,140	$263,014
	Three-year total: $774,560		Three-year present value: $641,314		

COST AVOIDANCE OF A SECURITY BREACH

Evidence and data. Interviewees highlighted the strategic value of Microsoft Defender in helping their organizations proactively identify threats, reduce risk exposure, and avoid the high costs associated with security breaches.

- In Forrester's annual security survey, the share of healthcare organizations that reported no data breaches fell by 9 percentage points since the previous year while those experiencing a single breach doubled, which signals a growing exposure to cyberthreats.[2] Interviewees reported zero breaches both before and after the transition

to Azure and said its capabilities helped their organizations stay ahead of attackers who target entire electronic health record (EHR) systems with encryption and ransom demands. The interviewees explained that by migrating to Azure, their healthcare organizations fortified their security postures against a rapidly evolving threat landscape. The chief transformation officer said, "I have heard that Defender has saved us several times."

- The executive director of enterprise architecture emphasized that Azure's built-in Zero Trust security architecture forced their organization to adopt modern best practices, reducing human error and improving the security of the organization's infrastructure deployments.

- The CTO and CISO explained that by consolidating their organization's security operations within the Microsoft ecosystem, it reduced integration complexity, avoided delays in data transfer, and lowered operational costs: "We have automated over 400 playbooks. Now our average response time is 2.2 minutes from the time an event is identified to the time we have it assigned or automatically closed through automation."

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

- The composite organization has never experienced a breach.

- The composite has a 67% likelihood of experiencing a breach in any given year.[3]

- All of those breaches originate from external attacks that target healthcare organizations, external attacks that target remote environments, internal incidents, or attacks or incidents involving the external ecosystem.[4]

- Microsoft Defender and Sentinel addresses 75% of those attacks.

- The cumulative cost of a breach for the composite organization is $3.5 million.[5]

- By migrating to Epic on Microsoft Azure, the composite lowers its risk of incurring breach-related costs by 35%.

Risks. The realization of these benefits will vary with the organization's frequency and cost of security breaches.

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 $1.2 million.

Percent of external attacks addressable with Microsoft Defender and Sentinel

75%

"We also have the Zero Trust environment that's built into Azure. Moving to Azure forces you to follow best practices in some ways that are optional on your own on-premises data center but not optional in the cloud."

EXECUTIVE DIRECTOR OF ENTERPRISE ARCHITECTURE

Cost Avoidance Of A Security Breach					
Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Cumulative cost of a breach	Forrester research	$3,538,000	$3,538,000	$3,538,000
D2	Likelihood of experiencing one or more breach	Forrester research	67%	67%	67%
D3	Percent of breaches that originate from external attacks targeting organizations or remote environments, internal incidents, or attacks or incidents involving the external ecosystem	Composite	100%	100%	100%
D4	Percent of attacks addressable with Microsoft Defender and Sentinel	Composite	75%	75%	75%
D5	Risk exposure addressable with Microsoft Defender and Sentinel	D1*D2*D3*D4	$1,777,845	$1,777,845	$1,777,845
D6	Reduced risk of exposure to breach costs from addressable attacks with Microsoft Defender and Sentinel	Interviews	35%	35%	35%
Dt	Cost avoidance of a security breach	D5*D6	$622,246	$622,246	$622,246
	Risk adjustment	↓ 20%			
Dtr	Cost avoidance of a security breach (risk-adjusted)		$497,797	$497,797	$497,797
	Three-year total: $1,493,390		Three-year present value: $1,237,947		

UNQUANTIFIED BENEFITS

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

- **Strategic agility and elastic scalability.** Interviewees said Azure's cloud-native architecture given their healthcare organizations the ability to scale infrastructure dynamically in response to evolving clinical and operational demands. They described Azure as having the ability to rapidly expand compute capacity during periods of peak demand (e.g., public health emergencies), which they said ensures uninterrupted patient access while avoiding the cost and complexity of overprovisioning.

  In addition, they said Azure's multi-region architecture enabled failover strategies that strengthened business continuity. The CTO and CISO reported a 32-minute recovery time with seamless regional transitions, representing a significant improvement over their organization's previous failover time of 45 to 50 minutes, which they said is critical during high-demand periods and essential to maintaining uninterrupted clinical operations.

  Interviewees also explained that because Azure's built-in compliance capabilities meet HIPAA and HITRUST standards, it reduces the need for manual patching and control enforcement, streamlining operations and lowering the burden of maintaining regulatory readiness.

- **Future-proofing through AI readiness.** Interviewees said Azure's integrated AI capabilities and hyperscale compute power positioned their healthcare organizations to lead the next wave of clinical and operational transformation, and they emphasized that there's a strategic advantage to being "AI-ready" without on-premises investments.

  Colocating Epic data with Azure's AI services reduced latency, cost, and complexity, which interviewees said unlocked new opportunities for predictive analytics, automation, and experimentation with LLMs. The CTO and CISO shared: "We're literally in a data center where Microsoft has a million core GPU we could leverage. … We're future-proofed here, too."

- **Microsoft's strategic partnership with Epic.** Interviewees said Microsoft's partnership with Epic further validated their organizations' Azure investments and noted that Epic has begun hosting its own platforms (e.g., Nebula data and analytics environment) directly in Azure. They explained that this alignment creates a seamless ecosystem for

healthcare organizations already running Epic in the cloud, which may enable faster data ingestion, improve interoperability, and enhance analytics.

> "Epic has deployed Nebula in Azure … which is really this massive data ingestion … that whole Nebula platform is built in Azure because [Epic] has recognized that it's the right place to keep large amounts of patient data and be able to share it and slice and dice it 20 different ways."
>
> **LEAD ENTERPRISE ARCHITECT**

FLEXIBILITY

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

- **Workforce enablement and talent attraction.** Interviewees said transitioning to Azure empowered their organizations to modernize their workforce strategies. They explained that existing staff were upskilled and redeployed into cloud engineering roles, which transformed traditional infrastructure positions into future-ready capabilities.

  This internal investment reduced reliance on external hiring and fostered cultures of innovation and continuous learning. Interviewees also consistently reported that using a cloud-forward approach enhanced their organizations' ability to attract top-tier IT talent and that offering more meaningful career paths reduced recruiting costs while improving retention.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Total Economic Impact Approach).

"We have found that [IT professionals] have sought us out and said: 'Hey, I see you guys doing a lot with the cloud. That's the kind of environment I want to work in. That's where I want to be: on that more cutting edge as opposed to just stuck to yesterday's technology.' So, it's helped our recruiting efforts."

CTO AND CISO

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	Annual Azure licensing costs	$0	$7,560,000	$7,560,000	$7,560,000	$22,680,000	$18,800,601
Ftr	Initial implementation costs and ongoing consulting and support costs	$2,475,000	$825,000	$825,000	$825,000	$4,950,000	$4,526,653
Gtr	Internal implementation and deployment labor costs	$514,800	$1,372,800	$686,400	$0	$2,574,000	$2,330,073
Htr	Ongoing management costs	$0	$343,200	$343,200	$343,200	$1,029,600	$853,488
Itr	Training fees	$77,220	$0	$0	$0	$77,220	$77,220
	Total costs (risk-adjusted)	$3,067,020	$10,101,000	$9,414,600	$8,728,200	$31,310,820	$26,588,035

ANNUAL AZURE LICENSING COSTS

Evidence and data. Interviewees consistently emphasized that their organizations made their Azure licensing decisions based on strategic imperatives (e.g., agility, resilience, long-term scalability) rather than short-term cost minimization. They said Azure's ability to support dynamic workloads, streamline operations, and enable rapid innovation were key justifications for the investment.

- Interviewees noted that Azure's flexible consumption models (e.g., pay-as-you-go, reserved capacity pricing) allowed their organizations to align their infrastructure spend with actual usage patterns, which enabled more precise forecasting, reduced the need for up-front capital investments, and supported ongoing optimization efforts.

- Several interviewees said there are operational advantages to Azure's unified licensing structure, which allowed their organizations to consolidate infrastructure, security, and

productivity tools under a single agreement. They explained that this simplified procurement, improved visibility into spend, and reduced administrative overhead.

- Pricing may vary. Contact Microsoft for additional details.

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

- The composite pays monthly Azure licensing costs of $600,000, and these include the cost of Microsoft 365 E5 (user-level security licensing), Defender for Cloud Plan 2 (providing infrastructure-level security), Microsoft Sentinel, and Microsoft Fabric for 20 Epic environments.

- The organization leverages a mix of pay-as-you-go and reserved capacity pricing to align spend with usage and growth projections.

Risks. Annual Azure license costs may vary based on:

- Changes in compute, storage, and networking requirements.

- Licensing needs for additional Microsoft software and services.

- The organization's evolving security, compliance, and data residency requirements.

Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $18.8 million.

> "We knew we were going to wind up in the cloud eventually. We already had workloads in Azure, and it made good logical sense to expand that. Today, we can manage our costs very closely — something we couldn't do before. We've reduced hundreds of thousands of dollars using Microsoft's tools, like quotas and reservations. That level of control and flexibility was a major driver."
>
> **VP OF TECHNOLOGY AND CTO**

Monthly licensing costs for Microsoft 365 E5 and Defender for Cloud Plan 2
$600K

Annual Azure Licensing Costs						
Ref.	Metric	Source	**Initial**	**Year 1**	**Year 2**	**Year 3**
E1	Annual Azure E5 P2 licensing costs	Composite		$7,200,000	$7,200,000	$7,200,000
Et	Annual Azure licensing costs	E1		$7,200,000	$7,200,000	$7,200,000
	Risk adjustment	↑5%				
Etr	Annual Azure licensing costs (risk-adjusted)		$0	$7,560,000	$7,560,000	$7,560,000
	Three-year total: $22,680,000			Three-year present value: $18,800,601		

INITIAL IMPLEMENTATION COSTS AND ONGOING CONSULTING AND SUPPORT COSTS

Evidence and data. Interviewees said their organizations' migrations from on-premises environments followed phased and strategic approaches tailored to their internal capabilities, timelines, and transformation goals. Each adopted a distinct implementation model, ranging from fully homegrown and hybrid to outsourced.

Interviewees whose organizations opted to engage third-party professional services for their migrations did so to accelerate timelines, mitigate risk, and supplement internal expertise, and they said selection criteria focused on partners with proven experience in Epic and Azure migrations — particularly those capable of supporting complex, multiphase implementations during concurrent initiatives (e.g., mergers, infrastructure modernization).

- The executive director of enterprise architecture said: "[Systems integrators and independent software vendors] are really instrumental in the planning architecture … [and during] the planning and project management phase. [I know this because my organization has] done these migrations — specifically EHR migrations to Azure — a few times. When it came to the actual workload migration part, they provided staff augmentation … and subject matter expertise for the implementation … and a lot of help

in consultation for the [maintenance and optimization] and then the next phase planning."

- The CTO and CISO stated: "We [have] the first environment of our size to go to Azure and any cloud environment actually for Epic. … We used about $4.9 million in professional services."

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

- The composite has 15 campuses and 20 Epic environments.

- The organization's migration follows a phased approach, beginning with nonproduction environments and progressing to production and disaster recovery.

- Because the composite's IT team is proficient in Epic but lacks Azure-specific expertise, it partners with Microsoft to select a professional services firm to lead planning and implementation.

- The composite's initial professional services cost is $2.25 million with ongoing managed services costs estimated at $750,000 per year.

Risks. Initial implementation costs and ongoing consulting and support costs may vary based on:

- The size and complexity of the hospital system.

- Complexity of the organization's Epic infrastructure.

- Duration and scope of migration.

- The organization's level of internal resourcing and Azure readiness.

- Additional coding, integration, testing or optimization services required post-deployment.

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 $4.5 million.

Implementation costs and ongoing consulting and support costs over three years

$4.5M

> "[My organization's internal] teams did the development; they built the infrastructure as code configuration, and then our [vendor] made sure that it would all work. They also found ways for us to modernize our on-premises data center management to look more similar to cloud-based management."
>
> EXECUTIVE DIRECTOR OF ENTERPRISE ARCHITECTURE

Initial Implementation Costs And Ongoing Consulting And Support Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Initial implementation costs by professional services	Composite	$2,250,000			
F2	Ongoing consulting and support costs	Composite		$750,000	$750,000	$750,000
Ft	Initial implementation costs and ongoing consulting and support costs	F1+F2	$2,250,000	$750,000	$750,000	$750,000
	Risk adjustment	↑10%				
Ftr	Initial implementation costs and ongoing consulting and support costs (risk-adjusted)		$2,475,000	$825,000	$825,000	$825,000
	Three-year total: $4,950,000			Three-year present value: $4,526,653		

INTERNAL IMPLEMENTATION AND DEPLOYMENT LABOR COSTS

Evidence and data. Interviewees emphasized that due to the complexity of their organizations' Epic migrations, internal deployments were led by cross-functional teams that closely collaborated with Epic and Microsoft.

- Interviewees explained that coordinating with Epic and Microsoft was essential to ensure technical alignment, performance validation, and risk mitigation. The lead enterprise architect said their organization's teams held weekly and monthly meetings with both to address configuration, performance tuning, and infrastructure compatibility. Epic provided guidance about environment sizing and latency thresholds while Microsoft supported infrastructure provisioning and Azure optimization. The interviewee said: "It's really a three-legged stool. You have yourself as the client, obviously, but you need to

have Epic in those conversations. You need to have your cloud provider — in our case, Microsoft — in this conversation."

- The internal teams typically included infrastructure architects, database administrators, application analysts, and virtualization specialists. The lead enterprise architect said their organization completed its migration with a small team of core technical staff members: "We had seven people who migrated this whole thing to Azure. So it was not a big team. It wasn't something where we outsourced it to a third-party company. It was just all homegrown."

- Interviewees described testing and validation as critical to maintaining clinical continuity, and they said their organizations invested heavily in pre-launch testing to meet strict risk tolerance thresholds. The CTO and CISO estimated that their organization's team spent more than 10,000 hours across 18 months validating the environment, which was the equivalent to five full-time employees annually. They said: "It's significant. A lot of it has to do with our risk tolerance." But the interviewee said the investment paid off because the organization reported a seamless go-live with no need to fail back.

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

- The composite's migration process begins with a six-month planning and architecture phase involving 12 cross-functional stakeholders from across the organization.

- This phase includes project planning, environment sizing, resource allocation, and architectural blueprinting. Teams define strategic goals, create user stories, and align infrastructure requirements with Epic and Azure capabilities.

- The migration spans 18 months and is led by an internal IT team of eight cross-functional specialists.

- The implementation is phased, beginning with nonproduction environments and culminating in production and disaster recovery.

- The composite's internal teams work closely with Epic, Microsoft, and a third-party vendor, and the teams are responsible for environment setup, data migration, performance testing, risk management, and post-migration optimization.

Risks. Internal implementation costs may vary based on:

- The complexity of the organization's Epic environments and number of workloads.

- The extent of third-party vendor involvement and support.

- The organization's internal IT team allocation, Azure proficiency, and availability.

- Regional salary benchmarks and skill-set requirements.

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 $2.3 million.

> "[At our leadership group meeting, the doctors] asked if there was anything that I had to report, and I said we moved Epic to Azure. The doctors said, 'We didn't notice it.' I said, 'Exactly.' That was the outcome that we wanted. They did not notice it."
>
> **VP OF TECHNOLOGY AND CTO**

Cross-functional IT specialists dedicated to Azure implementation by Year 1

8

Internal Implementation And Deployment Labor Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
G1	Implementation and deployment time (months)	Composite	6	12	6	
G2	Developers, Epic platform engineers, and others involved in implementation and deployment	Composite	12	8	8	
G3	Percent of time dedicated to implementation and deployment tasks	Composite	50%	100%	100%	
G4	Average blended fully burdened labor costs	Composite	$156,000	$156,000	$156,000	
Gt	Internal implementation and deployment labor costs	(G1*G2*G3*G4)/12	$468,000	$1,248,000	$624,000	$0
	Risk adjustment	↑10%				
Gtr	Internal implementation and deployment labor costs (risk-adjusted)		$514,800	$1,372,800	$686,400	$0
	Three-year total: $2,574,000			Three-year present value: $2,330,073		

ONGOING MANAGEMENT COSTS

Evidence and data. Interviewees described Epic as a high-performance environment that demands consistent upkeep (e.g., patching, making upgrades, and tuning performance), especially in production. One noted that Epic's infrastructure requirements remain rigorous in Azure, and they said two full-time database administrators dedicate 90% of their time to their organization's Epic support. Others said their organization maintains lean but highly skilled teams to manage platform operations and proactively monitor the environment.

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

- The composite organization has a multicampus footprint and 25% annual growth rate.

- The composite has five FTEs, three Epic platform engineers, and two operations engineers dedicate 40% of their time to ongoing management of Epic on Azure.

Risks. The cost of ongoing management will vary based on:

- Complexity of the Epic environment.

- The IT team's structure and skill level.

- Geographic salary benchmarks.

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 $853,000.

> "We will eventually empty out our data centers and have everything running in the cloud."
>
> **VP OF TECHNOLOGY AND CTO**

	Ongoing Management Costs					
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
H1	Dedicated Epic platform and operations engineers	Composite		5	5	5
H2	Average fully burdened labor cost of an Epic platform or operations engineer	Composite		$156,000	$156,000	$156,000
H3	Percent of time dedicated to ongoing management	Composite		40%	40%	40%
Ht	Ongoing management costs	H1*H2*H3		$312,000	$312,000	$312,000
	Risk adjustment	↑10%				
Htr	Ongoing management costs (risk-adjusted)		$0	$343,200	$343,200	$343,200
	Three-year total: $1,029,600			**Three-year present value: $853,488**		

TRAINING FEES

Evidence and data. Interviewees emphasized that moving Epic to Azure required a shift in skills rather than staffing.

- Instead of reducing headcount or hiring externally, the organizations cross-trained existing teams, which interviewees said enabled continuity and preserved institutional knowledge. They invested in structured internal programs to ensure their teams could manage hybrid environments, support Epic deployments in Azure, and uphold regulatory compliance.

- Interviewees described a mix of in-house training, partner-led workshops, and hands-on implementation experience.

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

- The composite repurposes existing IT team members to manage both cloud and on-prem environments.

- Teams of systems, software, and Epic database engineers participate in a three-month in-house program, with 4 to 6 hours per week of dedicated training time.

Risks. Training costs will vary depending on:

- The organization's level of commitment to a cloud-first strategy.

- The number of IT team members assigned to Epic and Azure and their baseline cloud proficiency.

- The level of training required to support hybrid infrastructure and regulatory compliance.

- Geographic salary benchmarks and skill-set specialization.

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 $77,000.

> "We trained up all of our teams on cloud services. … We didn't downsize or shrink headcount because of moving to the cloud. … At this point, all of our server teams are also cloud teams. … We just upskilled them in that regard."

**LEAD ENTERPRISE ARCHITECT**

Training costs over three years
$77K

	Training Fees						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
I1	IT team members	Composite	13			
I2	Training cost per IT team member	Composite	$75			
I3	Total training time per IT team member (hours)	Interviews	72			
It	Training fees	I1*I2*I3	$70,200	$0	$0	$0
	Risk adjustment	↑10%				
Itr	Training fees (risk-adjusted)		$77,220	$0	$0	$0
	Three-year total: $77,220			Three-year present value: $77,220			

Financial Summary

Consolidated Three-Year Risk-Adjusted Metrics

Cash Flow Chart (Risk-Adjusted)

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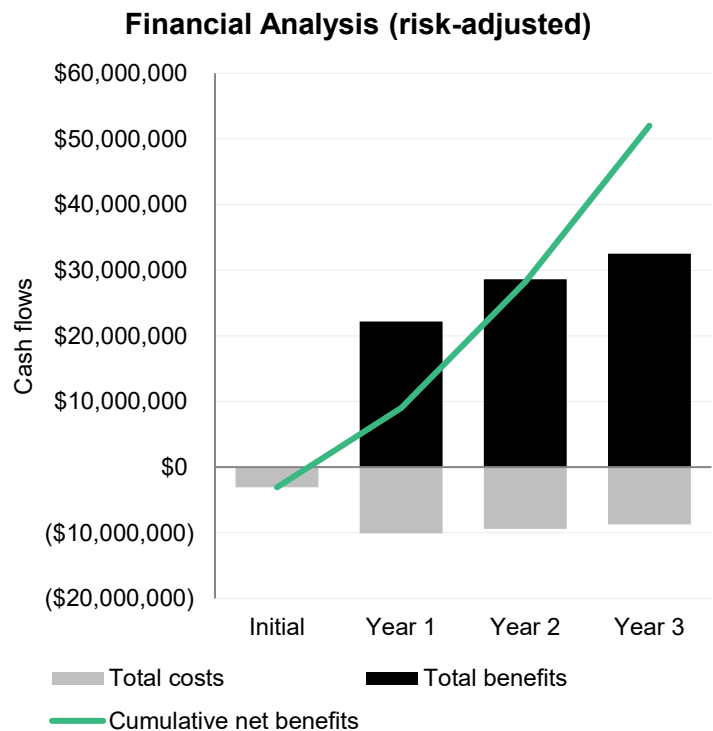
The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

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.

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.

Cash Flow Analysis (Risk-Adjusted)						
	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	($3,067,020)	($10,101,000)	($9,414,600)	($8,728,200)	($31,310,820)	($26,588,035)
Total benefits	$0	$22,165,753	$29,210,446	$33,922,702	$85,298,901	$69,778,177
Net benefits	($3,067,020)	$12,064,753	$19,795,846	$25,194,502	$53,988,081	$43,190,142
ROI						162%
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.

APPENDIX B: SUPPLEMENTAL MATERIAL

Related Forrester Research

"The Total Economic Impact™ Of Microsoft Defender," a commissioned study conducted by Forrester Consulting on behalf of Microsoft, June 2025.

"The Total Economic Impact™ Of Microsoft Defender For Cloud," a commissioned study conducted by Forrester Consulting on behalf of Microsoft, August 2024; updated January 2025.

"The Total Economic Impact™ Of Microsoft Unified," a commissioned study conducted by Forrester Consulting on behalf of Microsoft, March 2025.

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 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, 2025.

[3] Ibid.

[4] To determine the sources of breaches that target healthcare organizations, Forrester compared the number of respondents from hospitals; offices of physicians, dentists, or other healthcare practitioners; outpatient care centers; and medical and diagnostic laboratories answering the following question: "How many times do you estimate that your organization's sensitive data was potentially compromised or breached in the past 12 months?" Source: Forrester's Security Survey, 2024. Base: 106 security decision-makers from healthcare organizations. Source: Forrester's Security Survey, 2025. Base: 101 security decision-makers from healthcare organizations

[5] Source: Forrester's Security Survey, 2025.

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