

FORRESTER®

The Total Economic Impact™ Of IBM Hybrid IT Support

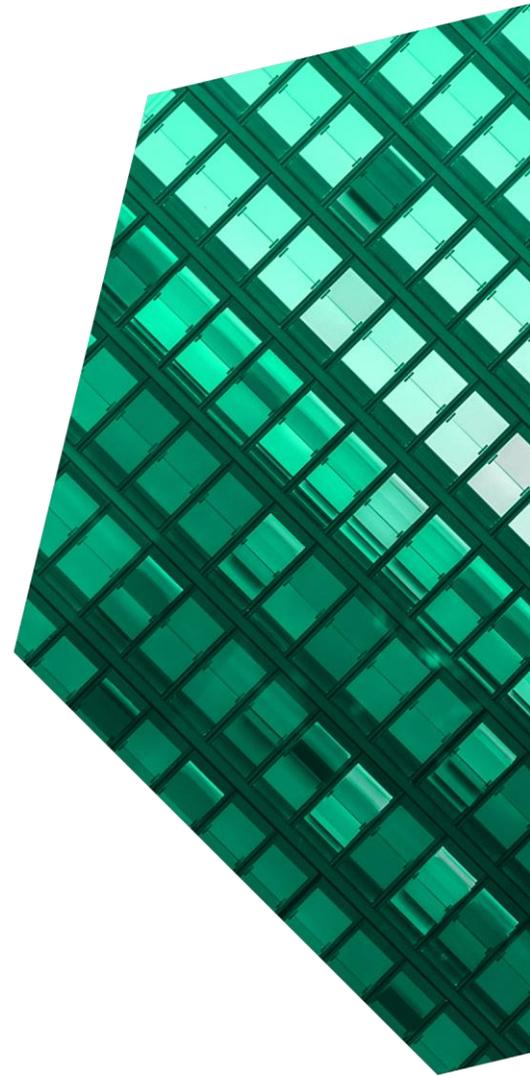
Cost Savings And Business Benefits
Enabled By IBM Hybrid IT Support

January 2021

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ABOUT FORRESTER CONSULTING

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Executive Summary

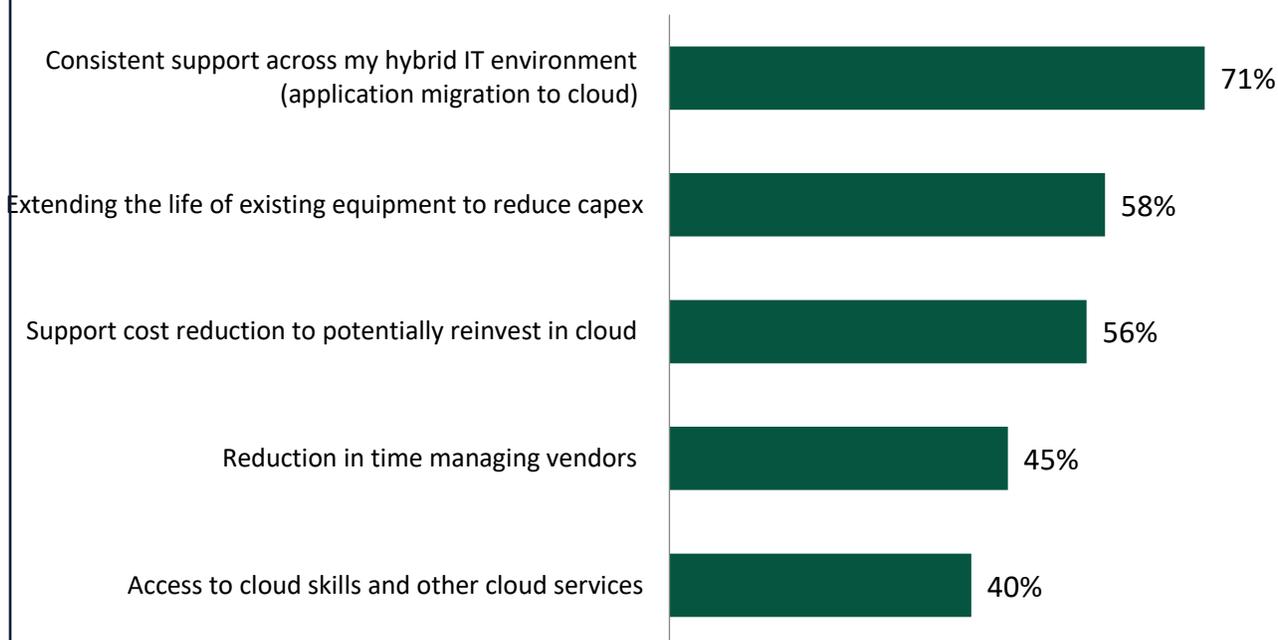
“When we first transferred some of our devices to IBM, we were able to replicate the same level of support we received from our OEM. We continued to migrate devices to IBM and continued to experience the same thing. In fact, in some cases we received better support than what we were originally getting from our OEM.”

– Director of IT management, healthcare

As organizations attempt to digitize their IT environment, many are left attempting to manage support for both cloud and on-premises infrastructures. Providing support for these hybrid environments presents IT leaders with the challenge of managing their growing data centers in cost-effective ways. Many organizations run environments that rely on multiple vendors to support the hardware and software they use. In a survey of 286 IT decision-makers, Forrester found that about half of respondents expect their hardware and software environments to get more diverse, and only 15% or

less expect them to get less diverse. This diversity leads to significant time spent managing support vendors. It also extends the timeline to resolve hardware and software incidents and leads to an overall increase in support spending. The more organizations invest time and money into their on-premise data center, the more they hinder their own cloud migration. Finding a way to mitigate the costs associated with on-premises data centers allows IT leaders to reinvest these funds into their cloud fredeployments.

“How has IBM support services helped in your journey to the cloud?”



Base: 286 US, Asian, and European IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, January 2021

“ If I want to address something in my hardware stack, I can go to a one-stop shop. I am not having to tell a variety of vendors different stories. I have a single thread to work from. Using MVS saves us from a great deal of confusion.”

— Capacity infrastructure planner, hardware manufacturing

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying [IBM Multivendor Support Services](#) (MVS) to maintain hybrid IT infrastructures located on- or off-premises (including data centers, private clouds, public clouds, connected devices, and more) with orchestration among the various platforms. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of IBM MVS on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed respondents from three organizations and surveyed 286 IT decision-makers with experience using IBM MVS. For the purposes of this study, Forrester aggregated the experiences of the interviewed and surveyed organizations and combined the results into a single [composite organization](#).

Prior to using IBM MVS, the organizations relied on original equipment manufacturers (OEMs) for their hardware and software support. Because the interviewed organizations dealt with a wide variety of

software and hardware vendors, there were periods of organizational change during which IT departments struggled to keep up with vendor management, inventory, and support coverage.

With the investment in IBM MVS, the organizations are able to: reduce the complexity of their IT environments; optimize their spending on hardware maintenance and support; improve availability and reduce the impact of outages; save time on their hardware support; improve ROI for open-source software; and reduce spending for third-party proprietary software support spending. The combined cost and time savings enabled these organizations to invest more resources into other business initiatives such as increased support for cloud migration journeys.

KEY FINDINGS

Quantified benefits. Risk-adjusted present value (PV) quantified benefits include:

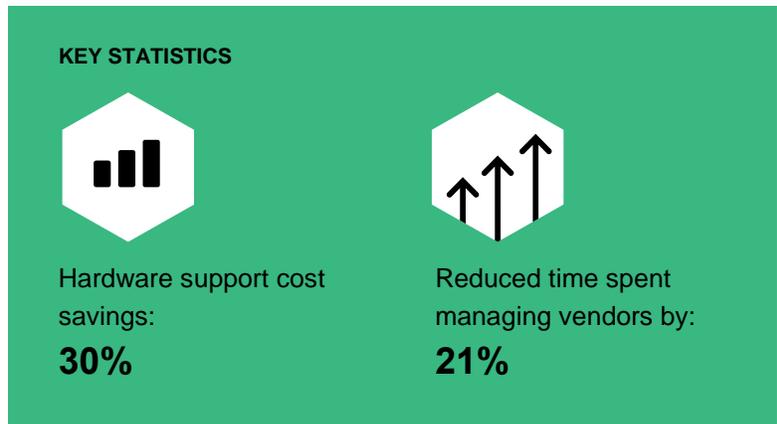
- **A reduction in hardware maintenance and support spending by 30%.** In their legacy states, the interviewed and surveyed

organizations relied on original equipment manufacturers (OEMs) and third parties to support their hardware environments. By consolidating these support contracts with IBM, organizations reduce their overall spending on hardware support and maintenance. The predictive maintenance, cognitive capabilities, proactive monitoring, and asset and life-cycle management of IBM MVS enable organizations to save an average of \$4.3M over three years.

- Time savings on hardware support tasks of 22%.** In addition to reducing hardware support spending, IBM MVS enables organizations to streamline inventory management tasks. Organizations use IBM's proprietary asset management and support portal to reduce the time they spend on hardware support tasks and reallocate this time to more productive tasks.
- Mitigating the effects of hardware outages, saving over \$400K in resolution costs.** By using IBM's proprietary tools, organizations can better respond to outages in their hardware systems. The IBM Client Insights Portal assists organizations with problem determination and parts replacement services. IBM Electronic Service Agent allows customers to automate their IT maintenance requests, which enables them to recover from incidents faster and to subsequently save employee time. This benefit results in over \$400,000 of savings over three years.
- A reduction in open source software support spending by 15%.** Many organizations leverage community open source software stacks to modernize their IT initiatives. In legacy workflows, these organizations depended on open source communities, open source vendors, and consulting services for their open source support. IBM's continuous remote software support services provide organizations with more sophisticated support for their open

source software, saving \$142,500 per year in support spending.

- A reduction in time that staff spend supporting third-party proprietary software providers by up to 22%.** Survey respondents noted that an additional benefit of using IBM for their software support is their ability to reduce the total time their employees spend interacting with third-party proprietary software providers. This allows them to focus on more business-critical initiatives, and it saves the organization \$22,649 over three years.
- Streamlining vendor management with IBM reduces the time staff spend on these tasks by 21%.** Consolidating IT support vendors to one central IT support system allows organizations to reduce the time they spend maintaining multiple support relationships, leading to \$26,887 in savings.



Unquantified benefits. Benefits that are not quantified for this study include:

- Freeing up staff time and funds to support cloud migration.** Ninety-two percent of respondents expect their maintenance and support strategy to change with cloud migration, and they are looking IBM for support in this transition. Thirty-seven percent of survey respondents stated that they are able to use the savings generated by IBM MVS to fund other critical facets of their business such as cloud migration.
- Extending the useful life of hardware equipment.** Organizations extend the useful life of certain hardware devices by approximately two years. Additionally, 46% of surveyed organizations shift or defer capital expenses by extending the useful life of equipment.
- Avoiding costly hardware incidents.** Survey participants noted that using IBM for their hardware support enables them to reduce the number of hardware incidents they experience annually. Simplifying IT support environments provides organizations with deeper visibility into their hardware stacks, allowing them to make proactive adjustments that prevent system failures.
- Redistributing support licenses to provide coverage to the correct devices.** Interviewees noted that the flexibility provided by IBM MVS is a major strength of the service. As device usage across departments and teams shifts, IBM provides organizations with the flexibility to shift support licenses to relevant devices. This both reduces the need to negotiate support contracts for these devices and prevents organizations from paying for support on unused devices.

- Implementation and training costs.** Organizations spent time planning for their migration to IBM support. Organizations described that they would typically migrate their support environment incrementally. To ensure a well-managed transition to IBM support, organizations invested time in training specific users on the functionality of IBM MVS.

The financial analysis based on the interviews and survey found that a composite organization experiences benefits of \$5.1M over three years.

Reduced time spent on vendor management: \$27K

Reduced third-party proprietary software: \$23K

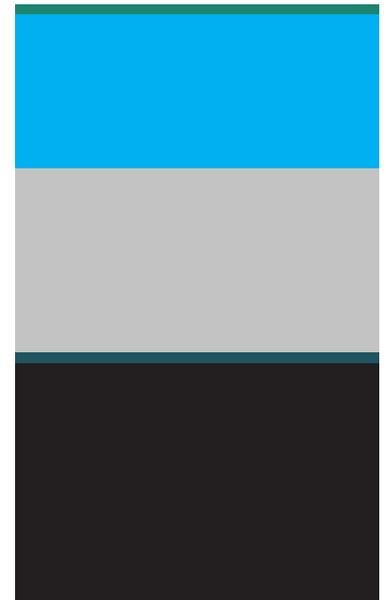
Reduced open source software support spending: \$319K

Mitigated effects of hardware outages: \$402K

Reduced time spent on hardware maintenance support: \$23K

Reduced hardware maintenance and support spending: \$4.3M

Benefits (Three-Year)



Total Benefits (PV): \$5.1M

Costs. Risk-adjusted PV costs include:

TEI FRAMEWORK AND METHODOLOGY

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

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 IBM MVS can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by IBM 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 report to determine the appropriateness of an investment in the IBM MVS.

IBM 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.

IBM provided the organization names for the interviews but did not participate in the interviews.

Forrester fielded the double-blind survey using a third-party survey partner.



DUE DILIGENCE

Interviewed IBM stakeholders and Forrester analysts to gather data relative to MVS.



ORGANIZATION INTERVIEWS AND SURVEY

Interviewed three decision-makers and surveyed 286 decision-makers at organizations using IBM MVS to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewed and surveyed organizations.



FINANCIAL MODEL FRAMEWORK

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



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 IBM Hybrid IT Support Customer Journey

Drivers leading to the IBM MVS investment

KEY CHALLENGES

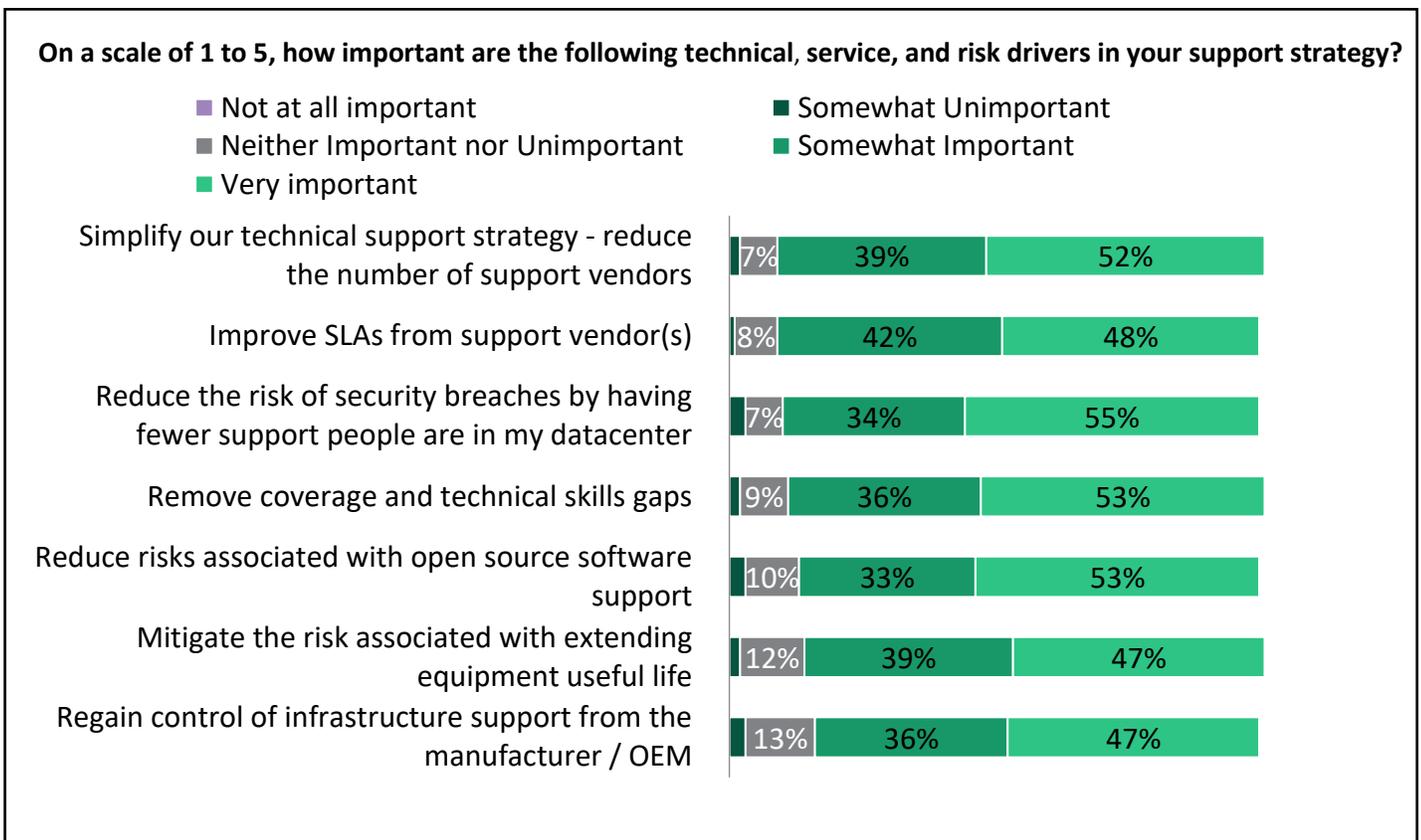
Forrester surveyed 286 IT decision-makers and interviewed three organizations with experience using IBM MVS. For more details on the organizations that participated in this study, see [Appendix B](#).

Prior to making an investment in IBM MVS, organizations typically relied on OEMs and other third-party vendors for their hardware and software support environment. These organizations struggled with common challenges, including:

- Desire to improve availability and reduce the impact of outages.** Disruption in business-critical hardware has significant financial impacts. Ninety-seven percent of survey respondents indicated that the improvement in availability of their data center's equipment is a key driver in data center support strategy.

Organizations were also interested in seeking a solution that could reduce the impact of these outages. A multitude of support vendors meant navigating complex processes and support contacts while attempting to resolve an outage, extending the time-to-resolution.

- Difficulty adapting to organizational changes.** Organizations struggled to adapt to changes required by the business while relying on a diverse hardware and software environment with multiple support providers and SLAs. IT staff spent time communicating with vendors attempting to explain new and developing policies or other various organizational changes. This often-caused dissimilar IT practices across organizations, leading to inefficient practices and confusion during periods of downtime.



- **Need to simplify support for the IT environment.** Ninety-one percent of the surveyed organizations sought to reduce the amount of time employees spend managing support vendors and inventorying devices. Additionally, 91% of respondents also wanted to reduce the number of support vendors so that they could simplify their technical support strategy. Managing relationships with multiple vendors was too time-consuming, and organizations wanted to reduce the time their staff spent on vendor management so that they could focus on more pressing business needs.
- **Desire to track assets more effectively.** Eighty-seven percent of survey respondents listed the enablement of proactive planning for equipment upgrades as an important driver in their data center support strategy, and 89% sought to remove support coverage gaps. In order to enhance planning, organizations needed greater insight into their environments. However, legacy asset tracking was accomplished through a variety of different hardware and software vendors. This made asset tracking increasingly difficult as these companies grew.

COMPOSITE ORGANIZATION

Based on the interviews and survey, Forrester constructed a TEI framework, a composite company, and a ROI analysis that illustrates the areas financially affected. The composite organization is representative of the three companies that Forrester interviewed and the 286 IT decision-makers that Forrester surveyed. 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 global organization with over 25,000 employees and \$4 billion in annual revenue. Prior to

investing in IBM MVS, the composite organization had a heterogeneous data center environment with multiple vendors operating across their data centers. The composite organization found that managing multiple vendors was a time-intensive and costly activity. The composite organization wanted to optimize its data center costs, reduce time spent managing open source software applications, and free up budget to support future cloud migration.

Deployment characteristics. The composite organization transitions maintenance support for devices to IBM as they come off support contracts, transitioning 1,000 devices in Year 1 and up to 1,400 devices by Year 3. The composite organization also shifts third-party proprietary and open source software support to IBM in Year 1.

Key assumptions

- **\$4B annual revenue**
- **25,000 employees**
- **Support for 1,400 devices transferred to IBM MVS by Year 3**
- **Support coverage for open source and third-party proprietary software**

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	Reduced hardware maintenance and support spending	\$1,465,714	\$1,758,857	\$2,052,000	\$5,276,571	\$4,327,766
Btr	Reduced time spent on hardware support	\$8,249	\$9,166	\$10,082	\$27,497	\$22,649
Ctr	Mitigated effects of hardware outages	\$161,690	\$161,690	\$161,690	\$485,070	\$402,099
Dtr	Reduced open source software support spending	\$134,480	\$134,480	\$134,480	\$403,441	\$318,932
Etr	Reduced time spent on third-party proprietary software issues	\$8,249	\$9,166	\$10,082	\$27,497	\$22,649
Ftr	Reduced time spent on vendor management	\$9,738	\$10,884	\$12,030	\$32,652	\$26,887
	Total benefits (risk-adjusted)	\$1,788,121	\$2,084,243	\$2,380,364	\$6,252,728	\$5,136,482

REDUCED HARDWARE MAINTENANCE AND SUPPORT SPENDING

Eighty-nine percent of survey participants listed the desire to lower equipment maintenance expenses as a driving factor for their data center support strategy. IBM can help organizations by consolidating support costs across multiple hardware vendors.

Organizations found that by using IBM MVS they were able to reduce the number of vendors required to support their storage environment by an average of four vendors, allowing them to significantly save on their support costs. As one interviewee noted: “We were planning on doing a major storage refresh. The OEM vendor we relied on for our support was proving to be very costly. So, we took our entire storage infrastructure and handed it to IBM. They were able to support it at a fraction of the cost.”

Modeling and assumptions. For the composite organization Forrester assumes:

- The composite organization reduces its hardware support spending by 30% with IBM, as compared to legacy support contracts.

“We used to use another vendor for multivendor service. We were looking for more flexibility and wanted to improve the service level agreement and reduce cost. So, we reached out to our local team from IBM and moved all the machines that we had in the other vendor to this new contract.”

*Chief technology officer,
telecommunications*

- The composite organization initially transitions support for 1,000 devices to IBM in Year 1. This number increases to 1,400 devices by Year 3.

Risks that could impact this benefit estimate include:

- The extent to which an organization relies upon IBM for their hardware support.
- The rate at which an organization’s support environment is transitioned to IBM.
- The total amount spent on hardware support prior to using IBM.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$4,327,766.

Reduced Hardware Maintenance And Support Spending					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Maintenance and support spending pre IBM MVS		\$5,142,857	\$6,171,429	\$7,200,000
A2	Maintenance and support spending with IBM MVS	30% reduction	\$3,600,000	\$4,320,000	\$5,040,000
At	Reduced hardware maintenance and support spending	A1-A2	\$1,542,857	\$1,851,429	\$2,160,000
	Risk adjustment	↓5%			
Atr	Reduced hardware maintenance and support spending (risk-adjusted)		\$1,465,714	\$1,758,857	\$2,052,000
Three-year total: \$5,276,571			Three-year present value: \$4,327,766		

REDUCED TIME SPENT ON HARDWARE SUPPORT

In addition to the direct cost savings provided by IBM MVS, organizations also reduce the amount of time they spend on hardware support activities such as IT device discovery, inventorying devices, and validating support status. Prior to investing in IBM MVS, disparate support contracts made these maintenance and support tasks difficult. Forty-five percent of survey respondents listed time savings on hardware support as a significant benefit of using IBM MVS.

Modeling and assumptions. For the composite organization Forrester assumes:

- Prior to their IBM MVS investment the composite organization spent 720 hours per year on hardware support tasks. IBM MVS reduces the time required for these tasks by as much as 22% over the analyzed period.

- The fully loaded hourly compensation for a hardware support staff member is \$67 per hour.

Risks that could impact this benefit estimate include:

- Variability in the length, frequency, and complexity of various hardware support tasks.
- The rate at which a company transitions its hardware to IBM MVS

To account for these risks, Forrester adjusted this

Reduce time spent on hardware support by

22%

benefit downward by 5%, yielding a three-year, risk-adjusted total PV of \$22,649.

Reduced Time Spent On Hardware Support					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Time spent prior to investing in IBM MVS (total hours)		720	720	720
B2	Time saved with MVS		18%	20%	22%
B3	Average fully loaded hourly compensation, engineer		\$67	\$67	\$67
Bt	Reduced time spent on hardware support	$B1*B2*B3$	\$8,683	\$9,648	\$10,613
	Risk adjustment	↓5%			
Btr	Reduced time spent on hardware support (risk-adjusted)		\$8,249	\$9,166	\$10,082
Three-year total: \$27,497			Three-year present value: \$22,649		

MITIGATED EFFECTS OF HARDWARE OUTAGES

The consolidated support provided by IBM MVS helps organizations mitigate the financial impact of a hardware incident or outage. Consolidating support allows organizations to more quickly and easily identify the source of the outage and resolve issues faster.

IBM leverages existing relationships with OEMs to diagnose hardware issues and expedite the resolution of these issues, minimizing the impact of these events on organizations. Organizations spend less time diagnosing the source of a critical issue and more on resolving said issue and minimizing its impact.

Modeling and assumptions. For the composite organization Forrester assumes:

- The composite organization experiences two critical incidents each year that affect the performance of its hardware environment.
- Survey respondents indicated that an average hardware outage cost their organization \$370,000.

- Consolidating support vendors and leveraging the support expertise provided by IBM enables the composite organization to reduce its mean-time-to-resolution (MTTR) by 23%.

Risks that could impact this benefit estimate include:

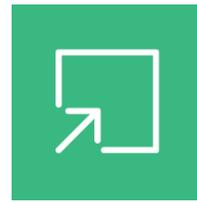
- The number of critical incidents an organization experiences annually.
- The total cost of a hardware outage will vary dependent on the nature and extent of the outage.

“If we have any issues in our hardware stack, IBM talks to the OEM directly. The beauty is we don’t have to be in the middle of that. So, as soon as IBM gets the devices under their support umbrella, they deal with the OEM-related communication. This is a major relief when we are trying to fix or resolve issues as we can focus on damage control while they help us fix the issue.”

Director of IT, healthcare

- The impact IBM has on MTTR will vary based on the how much of the environment is covered by MVS and the other solutions and processes in place to mitigate the effects of a critical incident.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of \$402,099.



Reduced MTTR by:
23%

Mitigated Effects Of Hardware Outages

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Number of critical incident per year		2	2	2
C2	Average cost of a critical incident		\$370,000	\$370,000	\$370,000
C3	Reduction in MTTR with IBM MVS		23%	23%	23%
Ct	Mitigated effects of hardware outages	$C1 * C2 * C3$	\$170,200	\$170,200	\$170,200
	Risk adjustment	↓5%			
Ctr	Mitigated effects of hardware outages (risk-adjusted)		\$161,690	\$161,690	\$161,690
Three-year total: \$485,070			Three-year present value: \$402,099		

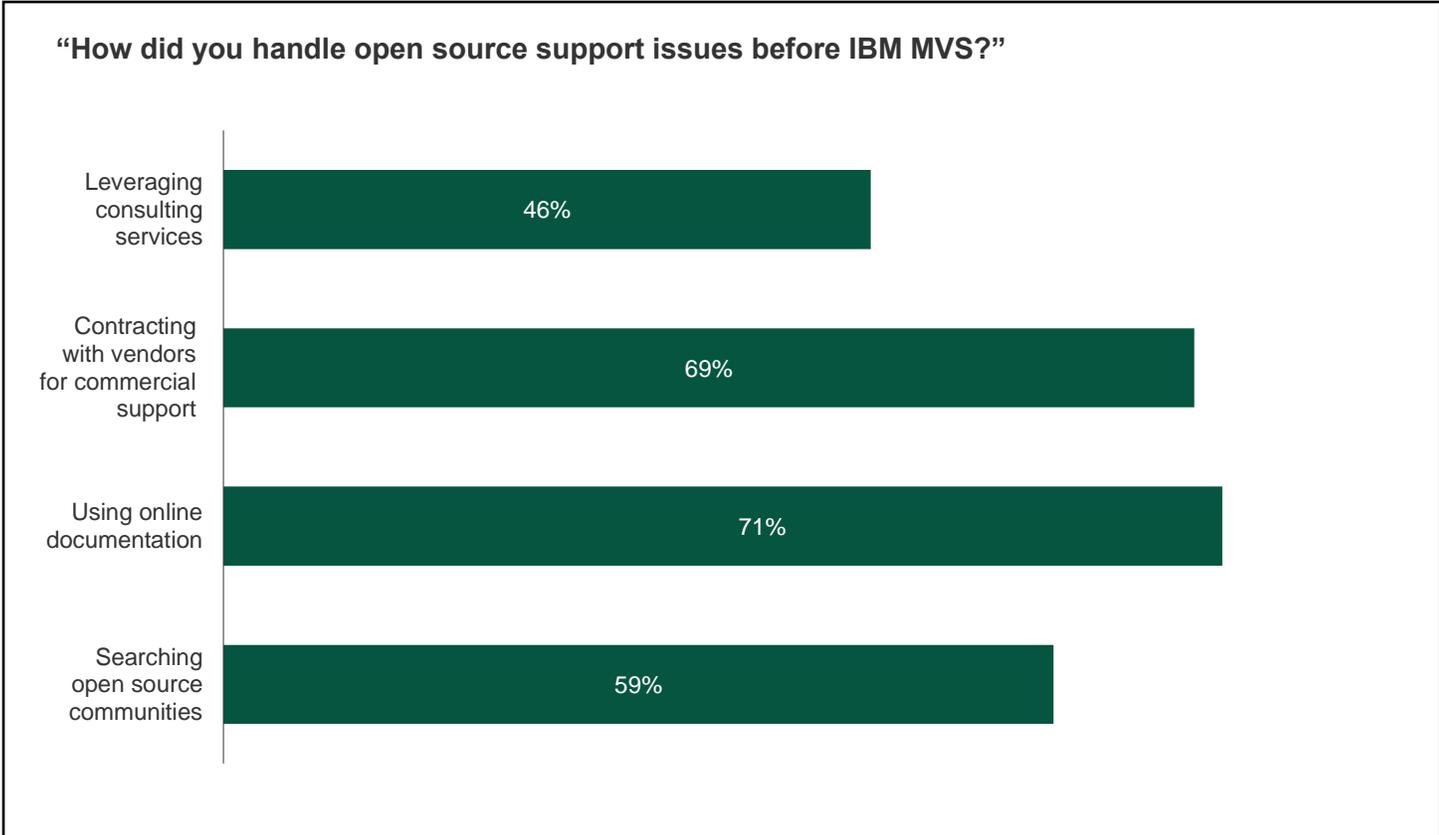
REDUCED OPEN SOURCE SOFTWARE SUPPORT SPENDING

Per a 2019 Forrester report 79% of open source decision makers stated that they struggled with real time support for their open source assets¹. IBM provides support for 245 community open source packages across the Application Stack, Data Platforms, Platform Components and DevSecOps. In their legacy environment, organizations typically relied on online open source communities or vendors with limited ability to support a hybrid open source environment. Ninety percent of respondents in used two or more open source software vendors to support their environment. This limited support often led to costly delays when issues or outages occurred, delaying issue resolution and hurting companies’

bottom lines. IBM provides organizations with 24/7 remote access to industry experts who can help quickly diagnose and resolve issues that arise in open source environments. This enables organizations to reduce both the amount of time they would spend searching through open source

“We are changing the way that we monitor from the infrastructure level to the application level. IBM MVS allows us to work with both teams to make sure we are providing the proper support for our software and hardware teams.”

*Chief technology officer,
telecommunications.*



communities and their total open source software support spending.

Modeling and assumptions. For the composite organization Forrester assumes:

- The composite organization spends \$950,000 annually to support its open source environment. This is inclusive of the direct costs paid to vendors and/or consultants who are needed to maintain open source software applications.
- The insights and expertise provided by IBM allow the organization to reduce its spending on open source software support by 15%.

Risks that could impact this benefit estimate include:

- The extent of open source software use.

- The amount of time organizations spend searching through open source communities for issue resolutions.
- The extent to which an organization relies on IBM for its open source software support.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$318,932.

Base: 286 US, Asian, and European IT decision-makers
 Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, January 2021

Reduced Open Source Software Support Spending					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	Open source software support spending pre-IBM		\$950,000	\$950,000	\$950,000
D2	Open source software support spending with IBM MVS	15% reduction with IBM	\$807,500	\$807,500	\$807,500
Dt	Reduced open source software support spending	D1-D2	\$142,500	\$142,500	\$142,500
	Risk adjustment	↓10%			
Dtr	Reduced open source software support spending (risk-adjusted)		\$134,480	\$134,480	\$134,480
Three-year total: \$384,750			Three-year present value: \$318,939		

REDUCED TIME SPENT ON THIRD-PARTY PROPRIETARY SOFTWARE ISSUES

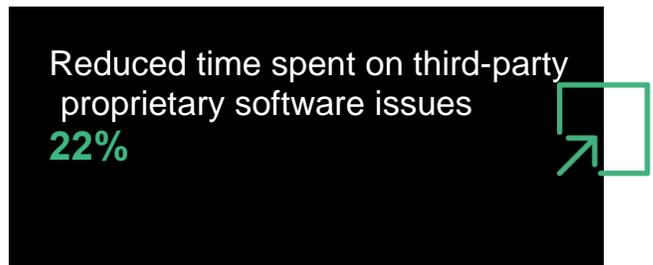
IBM MVS offers support for third-party proprietary software. The expertise and depth of support which IBM offers organizations brings them the same support as their original software providers. Survey respondents noted that shifting to IBM for software support reduced the time employees spent dealing with issues related to their software environment.

Modeling and assumptions. For the composite organization Forrester assumes:

- Prior to investing in IBM MVS, staff collectively spent 60 hours each month attending to support issues with their third-party proprietary software providers.
- Shifting to IBM for software support allows the organization to reduce the amount of time it spends on these tasks by 22%.
- The composite organization pays an average fully loaded hourly compensation of \$67 per hour for a software support staff member.

Risks that could impact this benefit estimate include:

- The total time an organization spends on support tasks related to third-party proprietary software prior to investing in IBM MVS.



- The extent to which an organization relies on IBM MVS for third-party proprietary software support.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of \$22,649.

Reduced time spent on third-party proprietary software issues					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
E1	Time spent before MVS (total hours)	Survey	720	720	720
E2	Time saved with MVS	Survey	18%	20%	22%
E3	Average fully loaded compensation, third-party software management	Assumption	\$67	\$67	\$67
Et	Reduced time spent on third-party proprietary software issues	$E1 * E2 * E3$	\$8,683	\$9,648	\$10,613
	Risk adjustment	↓5%			
Etr	Reduced spending on third-party proprietary software (risk-adjusted)		\$8,249	\$9,166	\$10,082
Three-year total: \$27,497			Three-year present value: \$22,649		

REDUCED TIME SPENT ON VENDOR MANAGEMENT

Finally, in addition to the hardware and software support time and cost savings, organizations also reduce the time spent managing relationships with various support vendors. This is a direct result of the reduced number of support vendors that the interviewed and surveyed organizations presently use in their data centers. Reducing the number of support vendors allows employees to spend less time on contract renewal and relationship management, thus allowing them to focus on more value-added work for their organizations.

With IBM MVS, surveyed organizations reported that they were able to reduce the total time spent interacting with various vendors by an average of 21%.

Modeling and assumptions. For the composite organization Forrester assumes:

- The composite organization dedicates 75 hours monthly to managing the relationship with various OEMs and third-party support vendors prior to MVS.

- Consolidating hardware and software support to IBM allows the composite organization to reduce its support spending by up to 21%.
- The composite organization pays an average fully loaded hourly compensation of \$67 per hour for a hardware support staff member.

Risks that could impact this benefit estimate include:

- The amount of time organizations dedicate to support vendor and contract management will depend on the size and complexity of their existing data center and support needs.

To account for this risk, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of \$26,887.

Reduced Time Spent On Vendor Management					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
F1	Time spent before MVS (total hours)	Survey	900	900	900
F2	Time saved with MVS	Survey	17%	19%	21%
F3	Average fully loaded compensation, vendor management	Assumption	\$67	\$67	\$67
Ft	Reduced time spent on vendor management	$F1 * F2 * F3$	\$10,251	\$11,457	\$12,663
	Risk adjustment	↓5%			
Ftr	Reduced time spent on vendor management (risk-adjusted)		\$9,738	\$10,884	\$12,030
Three-year total: \$32,652			Three-year present value: \$26,887		

UNQUANTIFIED BENEFITS

Additional benefits that organizations experienced but were not able to quantify include:

- **Reducing the number of hardware incidents experienced.** Several survey respondents noted that by investing in IBM support they avoid several of the costly hardware incidents that they experienced with their OEM support providers. Twenty-nine percent of the surveyed organizations stated that investing in IBM allows them to avoid an average of seven incidents each year.
- **Extending the useful life of hardware equipment.** The interviewed and surveyed organizations noted that investing in IBM support allows them to extend the life of their investments. Forty-six percent of survey participants noted that MVS helps them defer or save on their capital expenses by extending the useful life of their various hardware solutions.
- **Easily allocating hardware support licenses to provide coverage to the correct devices.**

IBM MVS provides organizations with the flexibility to change their support strategy as their needs change. About 50% of survey participants stated their data centers are become more diverse for hardware and software, and as a result they need a support solution that can adapt to these changes. IBM provides flexibility within its coverage options to quickly adjust support contracts to cover devices that are actually being used by organizations.

“We really value the flexibility IBM provides. For example, if I initially purchase 10 licenses for device A and 10 licenses for device B, and then find I don’t need 10 [licenses] for device A, I just need five of them, but I need 15 [licenses] for device B, I am allowed to swap them. As our data center continues to grow and evolve, this is becoming increasingly valuable to us.”

Director of IT, healthcare

FLEXIBILITY

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

- **Reallocating funds to other core areas of the business such as cloud, AI, or the internet of things (IoT).** Interviewees and survey respondents noted that the savings they experience by streamlining their support environment with IBM MVS can be used to fund other initiatives. Ninety-one percent of survey respondents indicated that freeing up budget and staff to speed migration to the cloud is a very or somewhat important financial driver in their data center support strategy. Thirty-seven percent of survey respondents stated that they are able to use the savings generated by IBM MVS to fund other critical facets of their business.
- **Avoiding costly hardware equipment upgrades on the OEM's schedule.** Extending the useful life of hardware devices has the added benefit of allowing organizations to avoid costly device upgrades. OEMs offer limited or no support for older devices, requiring organizations to frequently upgrade devices. IBM MVS allows organizations to adjust these upgrade cycles to better suit their needs, leading to more potential savings.

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

IBM MVS COSTS

The fees paid to IBM vary with the number and type of devices and software that are under the support agreement. In addition to these factors, the total cost to use IBM MVS can vary based on the age and rarity of covered devices, as finding spare parts can be more challenging for older devices.

To best represent the cost of using IBM MVS in the model, the costs for IBM MVS support are highlighted in the first benefit calculation. Per the interviews and survey responses, the cost of MVS is 30% lower than previous support costs.

To account for a staggered transition from existing support with OEMs and third parties, the composite organization has an incremental increase in the number of devices covered under the IBM MVS support agreement each year. As IBM MVS costs are dependent on the number of devices covered, the cost of using MVS ranges from \$3.6 million in Year 1 for almost 1,000 devices to up to \$5.0 million in Year 3 for over 1,400 devices.

IMPLEMENTATION AND TRAINING

In addition to the cost of IBM MVS support, organizations incur costs associated with planning and implementing IBM MVS. MVS users reported that their planning process began with an assessment of their IT environments to come up with a baseline for the number of devices that needed to be transitioned. Once the assessments were done, organizations transitioned the environments in a phased approach.

Modeling and assumptions. For the composite organization Forrester assumes:

- The composite organization spends 200 total internal hours upfront to plan the transition of hardware and software support to IBM MVS. The organization spends 40 hours each year identifying and communicating to IBM which items should go on or come off of support.
- One hundred staff spend four hours of training each year on how to use the functionality and insights provided by IBM MVS. These staff have a fully burdened salary of \$67 per hour.

Risks that could impact this benefit estimate include:

- The complexity of an organization's data center will affect how long employees spend planning and migrating to IBM MVS.
- The number of staff members who participate in annual training sessions.

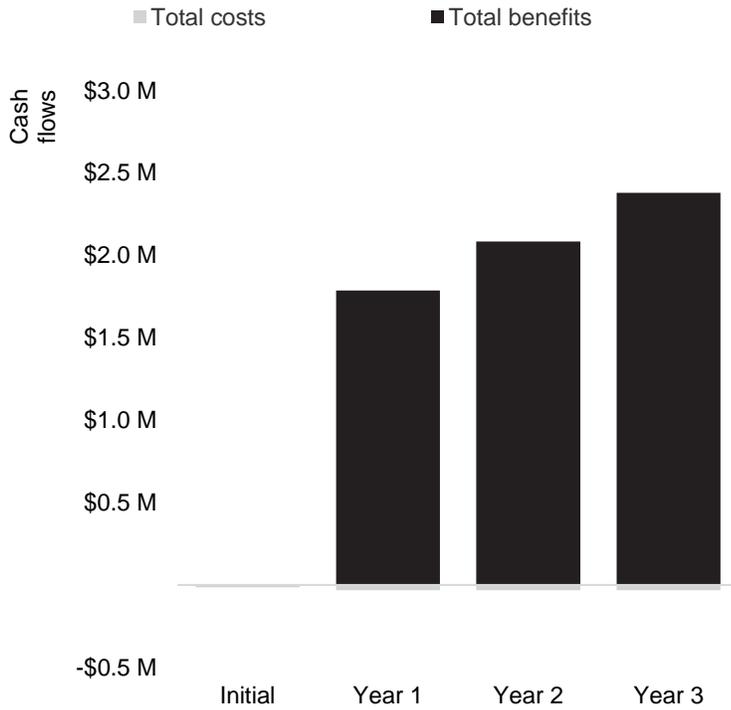
To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$95,384.

Implementation And Training						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
G1	Planning/migration hours		200	40	40	40
G2	Number of staff participating in training			100	100	100
G3	Training hours per year			4	4	4
G4	Average fully loaded hourly compensation		\$67	\$67	\$67	\$67
Gt	Implementation and training	$(G1+(G2*G3))*G4$	\$13,400	\$29,480	\$29,480	\$29,480
	Risk adjustment	↑10%				
Gtr	Implementation and training (risk-adjusted)		\$14,740	\$32,428	\$32,428	\$32,428
Three-year total: \$112,024			Three-year present value: \$95,384			

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 and NPV for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, and NPV 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	(\$14,740)	(\$32,428)	(\$32,428)	(\$32,428)	(\$112,024)	(\$95,384)
Total benefits	\$0	\$1,781,891	\$2,078,012	\$2,374,134	\$6,234,037	\$5,120,989
Net benefits	(\$14,740)	\$1,749,463	\$2,045,584	\$2,341,706	\$6,122,013	\$5,025,605

Appendix A: Total Economic Impact

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

TOTAL ECONOMIC IMPACT APPROACH

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

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

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

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

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



PRESENT VALUE (PV)

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



NET PRESENT VALUE (NPV)

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



RETURN ON INVESTMENT (ROI)

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



DISCOUNT RATE

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



PAYBACK PERIOD

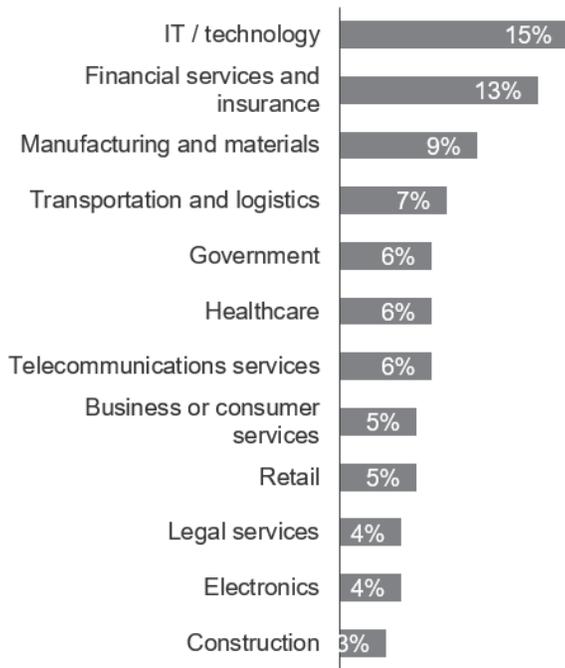
The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Appendix B: Interview And Survey Demographics

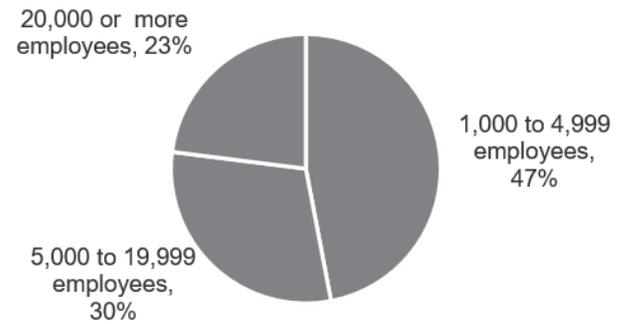
Interviewed Organizations			
Industry	Region	Interviewee	Annual Revenue
Hardware manufacturing	Headquartered in EMEA	Capacity infrastructure planner	\$2B
Healthcare	Headquartered in the US	Director of IT	\$83B
Telecommunications	Headquartered in South America	Chief Technology Officer	\$100M

Survey Demographics

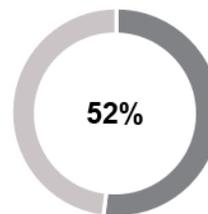
“Which of the following best describes the industry to which your company belongs?”



“Using your best estimate, how many employees work for your firm/organization worldwide?”



“Please indicate your level of responsibility for infrastructure virtualization in your company.”



I have primary responsibility for selecting, deploying, and managing infrastructure virtualization technologies. It is a primary element of my job

“In which country are you located?”

- 49%** United States
- 18%** United Kingdom
- 18%** France
- 18%** Germany

Base: 286 US, Asian, and European IT decision-makers
 Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, January 2021

Appendix C: Endnotes

¹ “Unlock Open Source Technology’s Full Value”, a commissioned study by Forrester research. October 2019.
<https://www.ibm.com/services/technology-support/open-source>

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