

A Forrester Total Economic  
Impact™ Study  
Commissioned By  
IBM

Project Director:  
Michael Speyer  
September 2016

# The Total Economic Impact™ Of IBM Multivendor Support Services

## Table Of Contents

<b>Executive Summary .....</b>	<b>3</b>
<b>Disclosures .....</b>	<b>4</b>
<b>TEI Framework And Methodology .....</b>	<b>5</b>
<b>Interview And Survey Highlights.....</b>	<b>6</b>
<b>Analysis .....</b>	<b>11</b>
<b>IBM MVS: Overview .....</b>	<b>20</b>
<b>Appendix A: Total Economic Impact™ Overview.....</b>	<b>21</b>
<b>Appendix B: Glossary.....</b>	<b>22</b>
<b>Appendix C: Endnotes.....</b>	<b>23</b>

### ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit [forrester.com/consulting](http://forrester.com/consulting).

---

© 2016, Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, RoleView, TechRadar, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies. For additional information, go to [www.forrester.com](http://www.forrester.com).

---

## Executive Summary

According to Forrester Research, between 70% and 75% of a typical tech budget goes to keeping the lights on and the business running, even if there are no new projects.<sup>1</sup>

A critical objective for any CIO is to keep spending under control, in order to maintain and operate the organization, systems, and equipment and make sure spending grows more slowly than overall revenues. That goal will become even more challenging as CIOs spend more of their new project budget on business technology (BT) to help firms win, serve, and retain customers. To help meet this goal, Forrester recommends that organizations should consider outsourcing operations and maintenance for older apps and systems, which can make a lot of sense for more than cost-saving reasons. Letting an outsourcer manage these older systems in the phase-out period provides protection against the risk of losing employees who have deep knowledge of these systems.<sup>2</sup>

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the financial benefit the organizations may realize by deploying IBM's Multivendor Support Services (MVS). MVS provides hardware maintenance support to a wide range of non-IBM devices like servers, storage, and networking equipment that are out of original equipment manufacturer (OEM) warranty or are approaching end of life. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact that MVS may have on their organizations.

To better understand the benefits, costs, and risks associated with an MVS deployment, Forrester interviewed an existing IBM customer with multiple years of experience using IBM hardware support services and surveyed 24 organizations that use IBM hardware support services.

Prior to deploying IBM MVS, the surveyed organizations used OEMs, third-party, and internal resources to support their hardware. As various hardware devices approached end of life or were no longer covered by OEM warranty, the organizations sought to extend the useful life of these devices with the least amount of risk. They also wished to lower their equipment maintenance expense while proactively planning for equipment upgrades. Improving support vendor service level agreements (SLAs) and regaining control of their infrastructure from the OEMs were also important components of their support strategies.

### IBM MVS HELPS ORGANIZATIONS REDUCES OVERALL HARDWARE MAINTENANCE SPENDING

Our financial analysis found that a composite organization based on the characteristics of the surveyed organizations experienced the risk-adjusted benefits shown in Figure 1.<sup>3</sup>

**IBM Multivendor Support Services can help organizations lower their overall hardware maintenance expense. A composite organization based on 24 IBM support services customers was able to:**

- **Extend the useful life of equipment by an average of 2.5 years.**
- **Reduce the time needed for hardware support tasks by 37%.**
- **Reduce the time needed for vendor relationship management by 43%.**

**FIGURE 1**  
Financial Summary Showing Three-Year Risk-Adjusted Results



Source: Forrester Research, Inc.

- › **Benefits.** The composite organization experienced the following three-year risk-adjusted benefits, which represent those experienced by the surveyed companies:
  - **Reduction in support and maintenance spending of \$114,939.** This savings results from switching hardware support from OEM and other third-party support vendors to IBM.
  - **Reduction in time needed for hardware support tasks of \$26,368.** This is the reduction in internal labor effort needed for hardware support and maintenance tasks, and it represents a 37% time savings.
  - **Reduction in time needed for vendor relationship management of \$37,363.** This is the reduction in internal labor effort needed for managing vendors that provide hardware support and maintenance, and it represents a 43% time savings.
- › **Costs.** The composite organization experienced the following three-year risk-adjusted, costs:
  - **Fees paid to IBM annually.** The fees paid to IBM vary with the number and type of equipment under the support agreement. For a small/midsize deployment of 38 devices, the fees are \$156,734. For a midsize deployment of 341 devices, the fees are \$620,917. For a large deployment of 3,197 devices, the fees are \$1,347,379.

## Disclosures

The reader should be aware of the following:

- › The 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 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 customer name for the interview but did not participate in the interview. The survey respondents were obtained from an anonymous online panel.

## TEI Framework And Methodology

### INTRODUCTION

From the information provided in the interview and surveys, Forrester has constructed a Total Economic Impact (TEI) framework for those organizations considering deploying IBM MVS. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision.

### APPROACH AND METHODOLOGY

Forrester took a multistep approach to evaluate the impact that IBM MVS can have on an organization (see Figure 2). Specifically, we:

- › Interviewed IBM marketing, sales, and consulting personnel, along with Forrester analysts, to gather data relative to MVS and the marketplace for MVS.
- › Interviewed one organization and conducted an online survey of 24 organizations that are currently using IBM hardware support services to obtain data with respect to costs, benefits, and risks.
- › Designed a composite organization based on characteristics of the surveyed organizations.
- › Constructed a financial model representative of the interviewed and surveyed organizations using the TEI methodology. The financial model is populated with the cost and benefit data obtained from the interview and surveys as applied to the composite organization.
- › Risk-adjusted the financial model based on issues and concerns the interviewed and surveyed organizations highlighted. Risk adjustment is a key part of the TEI methodology. While interviewed organizations provided cost and benefit estimates, some categories included a broad range of responses or had a number of outside forces that might have affected the results. For that reason, some cost and benefit totals have been risk-adjusted and are detailed in each relevant section.

Forrester employed four fundamental elements of TEI in modeling IBM MVS' service: benefits, costs, flexibility, and risks.

Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

**FIGURE 2**  
TEI Approach



Source: Forrester Research, Inc.

## Interview And Survey Highlights

For this study, Forrester conducted one telephone interview and conducted an online survey of 24 organizations in the US and the UK. The characteristics of the interviewed and surveyed organizations are:

- › Interviewee: We spoke to the asset manager for a multinational clothing retailer. The asset manager oversees hardware maintenance for the company's US data centers. The company has over 600 devices (servers and storage) under maintenance agreement with IBM. The company had been using IBM for extended hardware maintenance for four years.
- › Survey respondents: The survey respondents' roles ranged from IT managers to the senior-most IT decision-makers. The organizations ranged in size from 500 to more than 20,000 employees. The number of devices managed by IBM ranged from 30 to over 4,000, including servers, storage, and networking.

### HARDWARE SUPPORT STRATEGY DRIVERS

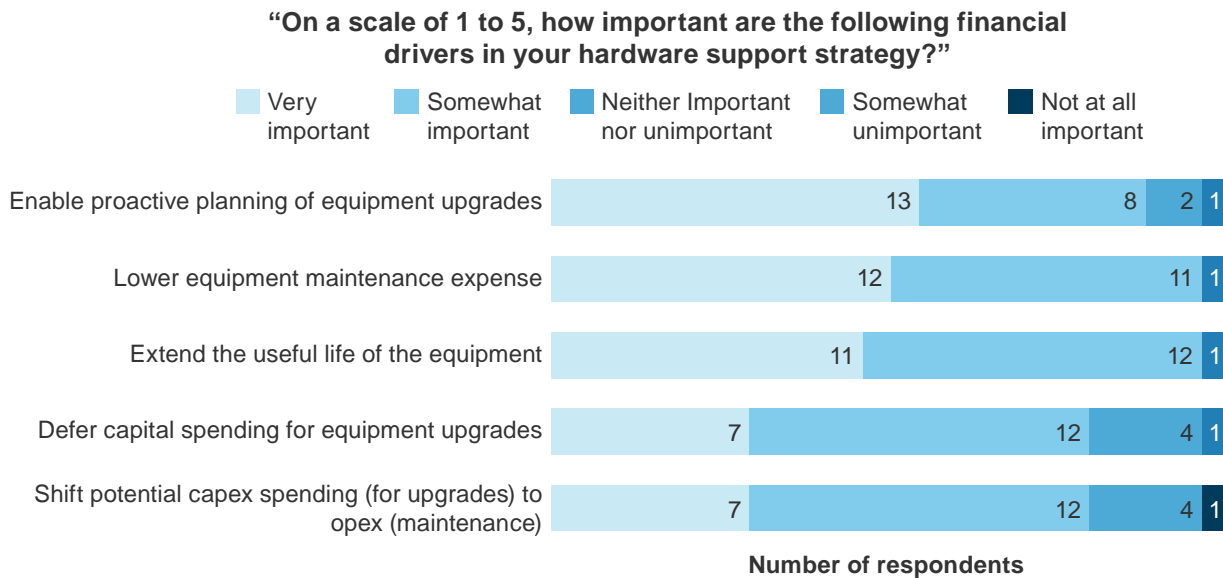
The interviewed organization had used IBM for over four years for a wide range of data center support services, including hardware maintenance. Many of its data center devices were six to eight years old, and IBM had been maintaining them for three to four years. For this company, geographic reach, price, and the ability to support older equipment were important support vendor selection criteria.

We learned from the survey that 100% of respondents had a formal hardware support strategy. We asked the survey respondents to rank the importance of various financial and nonfinancial drivers in their hardware support strategies. We learned that:

- › **Squeezing the most life out of hardware at the best cost is a strong financial driver.** Collectively, extending the useful life of the equipment, lowering equipment maintenance expenses, and enabling proactive planning of equipment upgrades were the most important economic drivers behind the respondents' hardware support strategies (see Figure 3). Deferring capital expenditures or shifting capex to opex were of lesser importance.
- › **Ensuring equipment runs reliably is the most important nonfinancial driver.** Mitigating the risk associated with extending equipment useful life, improving SLAs from support vendors, and simplifying technical support strategies were the most important nonfinancial drivers (see Figure 4). Respondents want to ensure that their equipment runs reliably and that their support vendors can deliver on what they promise.
- › **Regaining control of infrastructure support from the OEM is another key driver in hardware support strategies.** This suggests decreasing satisfaction with the OEM-centric support and refresh-cycle model. The negative perceptions about using OEMs are apparent by the importance that customers place on achieving benefits they believe are inhibited by the OEM. Some of these are highly direct, including the ability to reduce labor and cost associated with support tasks, while others are less direct, such as the ability to reduce security incidents as a result of having fewer individuals involved with the support process.

For the company that we interviewed, the price that it pays its support vendors and the vendors' geographic reach were important components of its hardware support strategy.

**FIGURE 3**  
**Financial Drivers Of Hardware Support Strategies**



Base: 24 US and UK IT professionals who use IBM hardware support services  
 Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, June 2016

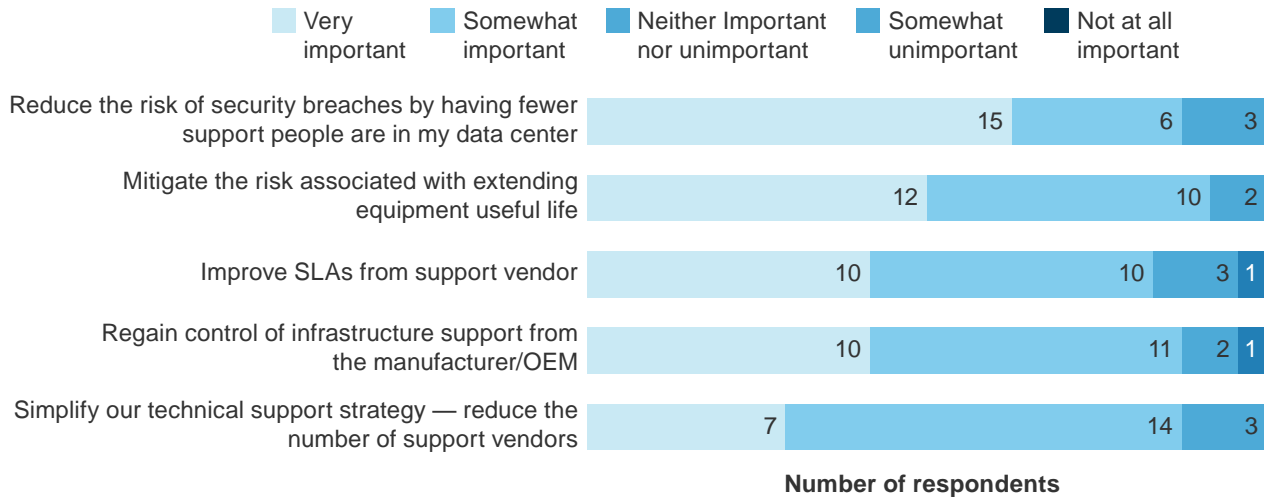
*“One of the benefits is the broad range of geographies and broad range of hardware devices that are covered. I don’t have to worry about whether or not they [IBM] support the eastern US or whether they support Canada.”*

~ Hardware asset manager, multinational clothing retailer

The ability to regain control over equipment upgrades is important to buyers. Some respondents even deemed it more important than extending the life of the equipment itself, which they almost universally endorsed as at least somewhat important to them. Virtually all respondents also indicated that lower equipment maintenance costs are at least somewhat important to them.

**FIGURE 4**  
**Nonfinancial Drivers Of Hardware Support Strategies**

“On a scale of 1 to 5, how important are the following technical, service, and risk drivers in your hardware support strategy?”



Base: 24 US and UK IT professionals who use IBM hardware support services

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, June 2016

## USE OF HARDWARE SUPPORT VENDORS

Prior to engaging with IBM MVS, the surveyed organizations had used multiple hardware support vendors (see Figure 5). Overall, respondents indicated significant support for a number key priorities, including reducing the risk posed by security breaches associated with more support personnel involved in the equipment support process and mitigating the risk associated with extending the useful life of equipment. Regaining control of the equipment support process by reducing reliance on OEMs for the process is also considered important by respondents, suggesting unhappiness with OEM offerings in this area. Respondents also deemed important — but not necessarily critical — the ability to simplify their technical support strategy by reducing the number of support vendors.



FIGURE 5

## Use Of Hardware Support Vendors

Before engaging with IBM Technical Support Services, how did you support your hardware?" (Select all that apply)			
	OEM	Non-IBM third party	Other
<b>Servers</b>	71%	33%	4%
<b>Storage arrays</b>	63%	46%	4%
<b>Network devices</b>	46%	58%	4%

Base: 24 US and UK IT professionals who use IBM hardware support services

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, June 2016

After engaging with IBM MVS, the interviewed and surveyed companies found that the number of OEM support vendors replaced by IBM ranged from one to five, with an average of 1.9. Similarly, the number of third-party support vendors replaced by IBM ranged from two to three, with an average of 1.8.

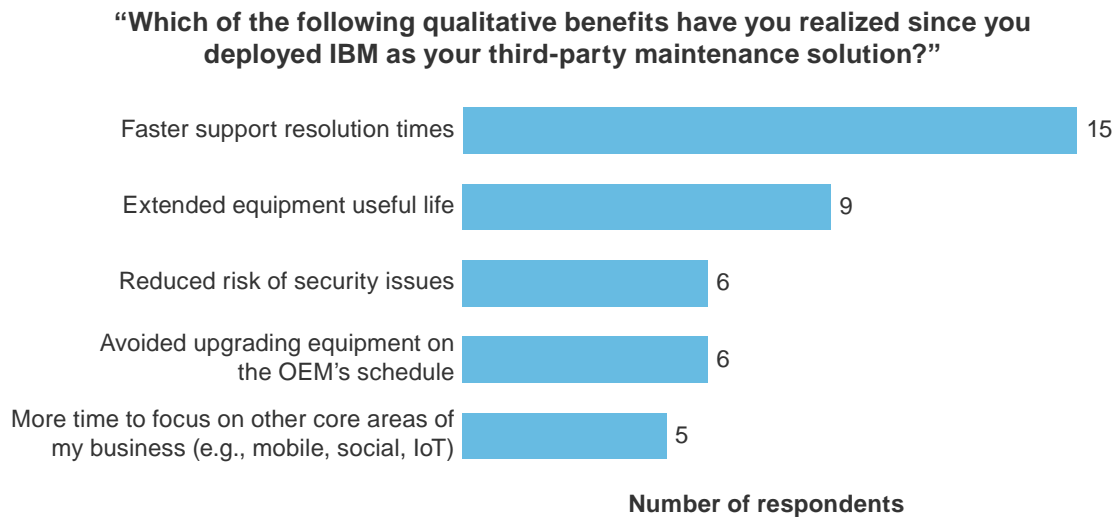
### Results

The interviewed and surveyed companies experienced a broad range of benefits as a result of engaging with IBM MVS (see Figure 6). These benefits include:

- › **Faster support resolution times.** Fifteen of 24 respondents (63%) benefited from the speed of IBM's service delivery. This contributes to the organizations' ability to provide reliable IT services to their constituents.
- › **Extending the useful life of equipment.** Nine of 24 respondents enjoyed this benefit, which suggests that IBM helped these organizations satisfy the support strategy drivers of extending the life of equipment and mitigating the risk associated with extending equipment life. We found that respondents were able to extend the life of their equipment from one to five years, depending on the type of equipment.

FIGURE 6

## Qualitative Benefits Resulting From Using IBM MVS For Hardware Maintenance



Base: 24 US and UK IT professionals who use IBM hardware support services

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, June 2016

In terms of benefits, faster support resolution times were reported by more than half of survey respondents, while more than one-third were able to extend useful life of equipment.

## Analysis

### COMPOSITE ORGANIZATION

Based on the interview and survey results, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization that Forrester synthesized from these results represents an organization with the following characteristics:

- › It is a US-based company with 2,000 employees and over \$500 million in revenues.
- › The organization has 50 x86 servers and one Tier 1 and three Tier 2 storage arrays. It also had seven network devices that had an OEM warranty that was about to expire or were approaching end of life. These devices were installed in a single data center.
- › The organization had been using a mix of OEM and third-party providers to provide support services for these devices. The basic support SLA was 24x7x365.

Not wishing to incur a large capital expense to upgrade or replace this equipment at this time, the organization was strongly motivated to extend the useful life of this equipment so that it could have time to figure out its equipment upgrade strategy and the potential impact on its data center architecture. Also, the organization considered its outsourced support fees to be too high and wished to lower this expense.

The organization reevaluated its data center hardware support strategy and wished to:

- › Consolidate the number of support vendors that it worked with and reduce its reliance on the OEMs.
- › Extend the equipment's useful life while it planned for equipment upgrades, and do this in a way that lowered the risks associated with extending the equipment's life.
- › Lower its overall support spending.

After conducting an RFP for support services, the organization chose IBM MVS hardware support services.

---

*“In terms of IBM saving us money . . . the obvious play is with them extending the life of our existing hardware; it does save us a capital expense.”*

~ Hardware asset manager, multinational clothing retailer

---

## BENEFITS

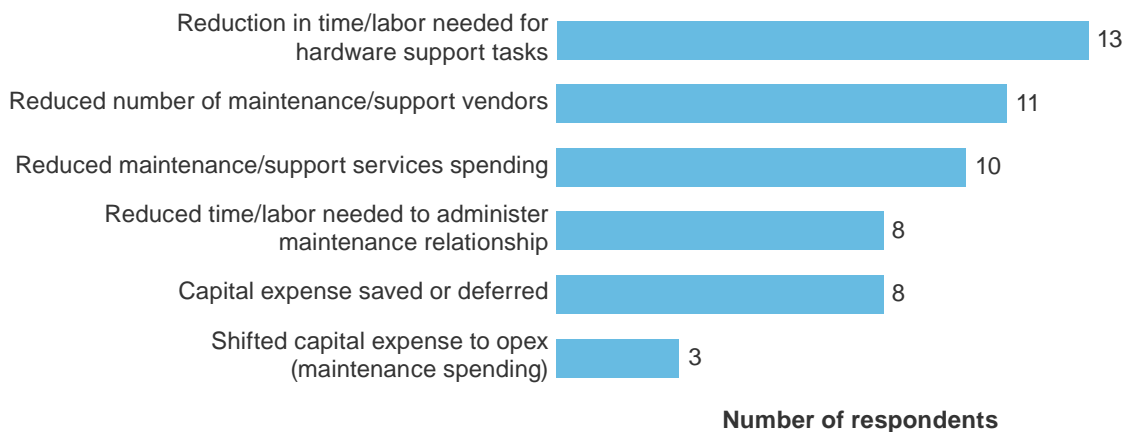
The surveyed organizations experienced a range of economic benefits as shown in Figure 7. The most-mentioned benefits include:

- › **Reduction in labor required to perform hardware support tasks.** Although respondents had been using outside vendors for support and maintenance servers before engaging with IBM, 13 of 24 surveyed respondents reported a reduction in labor effort after engaging with IBM.
- › **Reduction in labor needed to administer support relationships.** Eleven of 24 respondents reported a reduction in the number of support vendors that they use, which may contribute to a reduction in the labor effort needed to maintain the vendor relationships.
- › **Reduction in support services spending.** Ten of 24 respondents reported a reduction in their support services spending after engaging with IBM.

**FIGURE 7**

### Economic Benefits Resulting From Using IBM MVS For Hardware Maintenance

“Which of the following economic benefits have you realized since you deployed IBM as your third-party maintenance solution?”



Base: 24 US and UK IT professionals who use IBM hardware support services

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, June 2016

For the composite organization, we included the following quantifiable benefits in the financial analysis:

- › Reduction in support and maintenance spending.
- › Reduction in time needed for hardware support tasks.
- › Reduction in time needed for vendor relationship management.

### Reduction In Support And Maintenance Spending

The surveyed organizations reported savings on support and maintenance spending ranging from \$5,000 to over \$200,000 annually, but mostly clustered between \$15,000 and \$60,000. These savings stem primarily from



reducing the number of support vendors that are used and possibly obtaining more favorable pricing from IBM. These savings support the respondents' goal of lowering their equipment maintenance expense.

Based on the survey data, we assume that the composite organization lowers its annual support and maintenance spending by \$54,375 annually (see Table 1).

We adjust this downward by 15% to account for the following risks:

- Variation in pricing received from IBM.
- Variation in support service levels.
- Variation in the number and types of devices that are supported by IBM.

This yields a three-year risk-adjusted savings of \$138,656.

**TABLE 1**  
**Reduction In Support And Maintenance Spending**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Total
A1	Support spending saved		\$54,375	\$54,375	\$54,375	
At	Reduction in support and maintenance spending	A1	\$54,375	\$54,375	\$54,375	\$163,125
	Risk adjustment	↓15%				
<b>Atr</b>	<b>Reduction in support and maintenance spending (risk-adjusted)</b>		<b>\$46,219</b>	<b>\$46,219</b>	<b>\$46,219</b>	<b>\$138,656</b>

Source: Forrester Research, Inc.



### Reduction In Time Needed For Hardware Support Tasks

The surveyed organizations reported a reduction in the labor effort needed to perform hardware support tasks. The reductions ranged from 7% to over 80% and were loosely correlated with number the number of devices supported by IBM. These labor savings may arise for multiple reasons, including outsourcing support tasks that were previously done internally and improved support from IBM versus previous support vendors. These savings support the respondents' goal of lowering their equipment maintenance expense.

For the composite organization, we assume it needed 55 labor hours per month (660 labor hours per year) for hardware support tasks prior to engaging with IBM. This is reduced by 37% after engaging with IBM. Assuming a hardware support engineer has a fully loaded annually salary of \$106,250, or \$58.01 per hour, the annual labor savings are \$12,474 (see Table 2).

We adjust this downward by 15% to account for the following risks:

- Variation in the number of devices that are managed with IBM.
- The amount of support that is done internally before outsourcing to IBM.

This yields a three-year risk-adjusted savings of \$31,809.

**TABLE 2**  
**Reduction In Time Needed For Hardware Support Tasks**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Total
B1	Hours per year for hardware support tasks before IBM	55 hours*12	660	660	660	
B2	Percent reduction in support task time	37%	37%	37%	37%	
B3	Support engineer fully loaded hourly rate	\$85,000*1.25/2,080	\$51.08	\$51.08	\$51.08	
Bt	Reduction in time needed for hardware support tasks	B1*B2*B3	\$12,474	\$12,474	\$12,474	\$37,422
	Risk adjustment	↓15%				
<b>Btr</b>	<b>Reduction in time needed for hardware support tasks (risk-adjusted)</b>		<b>\$10,603</b>	<b>\$10,603</b>	<b>\$10,603</b>	<b>\$31,809</b>

Source: Forrester Research, Inc.



### Reduction In Time Needed For Vendor Relationship Management

The surveyed organizations reported a reduction in the labor effort needed to manage support vendor relationships. These reductions ranged from 12% to over 85%. This labor saving is a direct result of reducing the number of support vendors that the surveyed organizations use and supports their goal of lowering their equipment maintenance expense. As reported earlier, the surveyed organizations reduced their number of support vendors by an average of 2.

For the composite organization, we assume it needed 60 labor hours per month (720 labor hours per year) for vendor relationship management tasks prior to engaging with IBM. This is reduced by 43% after engaging with IBM. Assuming a hardware support engineer has a fully loaded annually salary of \$106,250 or \$58.01 per hour, the annual labor savings are \$15,815 (see Table 3).

We adjust this downward by 5% to account for the following risk:

- Variation in the number of support vendors used prior to engaging with IBM.

This yields a three-year risk-adjusted savings of \$37,363.

**TABLE 3**  
**Reduction In Time Needed For Vendor Relationship Management**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Total
C1	Hours per month for relationship management before IBM	60*12	720	720	720	
C2	Percent reduction in relationship management time	43%	43%	43%	43%	
C3	Support engineer fully loaded hourly rate		\$51.08	\$51.08	\$51.08	
Ct	Reduction in time needed for vendor relationship management	C1*C2*C3	\$15,815	\$15,815	\$15,815	\$47,445
	Risk adjustment	↓5%				
<b>Ctr</b>	<b>Reduction in time needed for vendor relationship management (risk-adjusted)</b>		<b>\$15,024</b>	<b>\$15,024</b>	<b>\$15,024</b>	<b>\$37,363</b>

Source: Forrester Research, Inc.

### Capital Expense Deferred



Eight of 24 surveyed organizations reported capital expense deferred or saved (for new equipment purchases or upgrades). The amount of capital spending deferred ranged from \$15,000 to more than \$200,000. The variance correlates with number of devices that are supported by IBM. The length of deferral ranged from one to five years, with an average 2.5 years. We note that respondents were able to defer a capital expense but not avoid it. Therefore, we did not evaluate or include this benefit in the analysis because we assumed the respondents did or would eventually make the equipment purchases, and it's not an actual savings. We note that deferring capital expenditures offers some financial flexibility and potentially allows companies to invest elsewhere.

### Total Benefits

Table 4 shows the total of all benefits across the three areas listed above, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to be a PV of more than \$178,000.

**TABLE 4**  
**Total Benefits (Risk-Adjusted)**

Ref.	Benefit Category	Year 1	Year 2	Year 3	Total	Present Value
Atr	Reduction in support and maintenance spending	\$46,219	\$46,219	\$46,219	\$138,656	\$114,939
Btr	Reduction in time needed for hardware support tasks	\$10,603	\$10,603	\$10,603	\$31,809	\$26,368
Ctr	Reduction in time needed for vendor relationship management	\$15,024	\$15,024	\$15,024	\$45,072	\$37,363
	<b>Total benefits (risk-adjusted)</b>	<b>\$71,846</b>	<b>\$71,846</b>	<b>\$71,846</b>	<b>\$215,538</b>	<b>\$178,670</b>

Source: Forrester Research, Inc.



## COSTS

The composite organization experienced the following cost associated with IBM MVS:

- › Annual IBM support expense.

We do not include the vendor relationship management expense in the cost analysis because it is an overall net savings, as shown in the Benefits section.

### Annual IBM Support Expense



According to IBM, the cost of MVS at the device level does not vary with the number of devices of the same types that are managed by IBM, i.e., the per-device cost for one or 100 devices of the same type is the same. However, the age and obscurity of a device can alter pricing. Using older and rarer devices, for which finding spare parts is more challenging, tends to raise prices.

To illustrate how pricing varies with the number of devices under contract, we asked IBM to provide us with pricing for three scenarios: small, midsize, and large deployments. The number and types of equipment for each deployment varies. The number of devices and associated pricing for each deployment scenario is shown in Table 5.

Forrester urges readers to consult with their IBM representative to obtain pricing for their situation.

**TABLE 5**  
**Annual IBM Support Expense**

Ref.	Metric	Small	Midsize	Large
D1	Servers	32	293	757
D2	Storage devices	3	32	572
D3	Network devices	3	16	68
Dt	Annual IBM support expense	\$63,025	\$249,680	\$541,801
	Risk adjustment	0%	0%	0%
<b>Dtr</b>	<b>Annual IBM support expense (risk-adjusted)</b>	<b>\$63,025</b>	<b>\$249,680</b>	<b>\$541,801</b>

Source: Forrester Research, Inc.

## Total Costs

Table 6 shows the total of all costs for three representative IBM MVS deployments.

**TABLE 6**  
**Total Costs (Risk-Adjusted)**

Ref.	Cost	Year 1	Year 2	Year 3	Total	Present Value
Dtr	Small deployment	\$63,025	\$63,025	\$63,025	\$189,075	\$156,734
Dtr	Midsize deployment	\$249,680	\$249,680	\$249,680	\$749,040	\$620,917
Dtr	Large deployment	\$541,801	\$541,801	\$541,801	1,625,403	\$1,347,379

Source: Forrester Research, Inc.

## FLEXIBILITY

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for some future additional investment. This provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so. There are multiple scenarios in which a customer might choose to implement MVS and later realize additional uses and business opportunities.

Eighteen of the 24 survey respondents indicated they would increase the number of devices whose maintenance and support are outsourced to IBM. The increase in the number of devices that they would outsource ranged from 10% to 131%, with the vast majority falling below 30%. We anticipate that these organizations may receive additional benefits in the areas of capital expense deferment, reduction in support and maintenance spending, and reduction in time needed for hardware support tasks.

## RISKS

Forrester defines two types of risk associated with this analysis: “implementation risk” and “impact risk.” Implementation risk is the risk that a proposed investment in MVS may deviate from the original or expected requirements, resulting in higher costs than anticipated. Impact risk refers to the risk that the business or technology needs of the organization may not be met by the investment in MVS, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

**TABLE 7**  
**Benefit And Cost Risk Adjustments**

Benefits	Adjustment
Reduction in support and maintenance spending	↓ 15%
Reduction in time needed for hardware support tasks	↓ 15%
Reduction in time needed for vendor relationship management	↓ 5%

Source: Forrester Research, Inc.

Quantitatively capturing implementation risk and impact risk by directly adjusting the financial estimates results provides more meaningful and accurate estimates and a more accurate projection of the ROI. In general, risks affect costs by raising the original estimates, and they affect benefits by reducing the original estimates. The risk-adjusted numbers should be taken as “realistic” expectations since they represent the expected values considering risk.

The following impact risks that affect benefits are identified as part of the analysis:

- › Variation in service support levels.
- › Variations in the number and types of devices that are supported by IBM.
- › Variation in pricing received from IBM.
- › The amount of support that is done internally before outsourcing to IBM.
- › Variation in the number of support vendors used prior to engaging with IBM.

Table 7 shows the values used to adjust for risk and uncertainty in the benefit estimates for the composite organization. Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

## IBM MVS: Overview

The following information is provided by IBM. Forrester has not validated any claims and does not endorse IBM or its offerings.

Storage, server, and networking hardware have lifespans. As the equipment ages, its performance may begin to gradually degrade. However, with cost-effective maintenance and support, it can still perform many useful functions and its life can be extended. Hardware maintenance solutions from OEMs aren't typically based on a life-cycle approach. OEMs traditionally offer end-of-service-life (EOSL) dates for equipment. Once a product reaches EOSL, the OEM maintenance agreement typically expires and the covered product is essentially deemed replaceable by the OEM — without a careful analysis of its actual condition. Tailoring maintenance to a piece of equipment's life cycle is a practical way to help extend its life and cut costs.

The IBM MVS support offering is designed to expand the life and ROI of your non-IBM server, storage, and networking investments. IBM MVS delivers around-the-clock level-one and level-two hardware support for select multivendor storage, networking, and server hardware. IBM MVS also provides advice concerning what hardware you should keep on OEM maintenance or replace or move to IBM maintenance. IBM MVS helps to simplify and reduce costs via pre-priced hardware maintenance services that are designed to be budget friendly and require no configuration options.

Using several service providers for hardware maintenance can be time consuming and complicated, as it requires monitoring multiple contracts and SLAs. Accessing support may be challenging, especially if your in-house resources are burdened with determining the source of the problem beforehand. With a single point of contact, IBM MVS can help you streamline vendor management and focus on your core business. IBM MVS helps you save time by providing both problem determination and support services. With one price and one contract, IBM MVS can ease administrative and budgetary challenges.

## Appendix A: Total Economic Impact™ Overview

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. TEI assists technology vendors in winning, serving, and retaining customers.

The TEI methodology consists of four components to evaluate investment value: benefits, costs, flexibility, and risks.

### BENEFITS

Benefits represent the value delivered to the user organization — IT and/or business units — by the proposed product or project. Often, product or project justification exercises focus just on IT cost and cost reduction, leaving little room to analyze the effect of the technology on the entire organization. The TEI methodology and the resulting financial model place 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. Calculation of benefit estimates involves a clear dialogue with the user organization to understand the specific value that is created. In addition, Forrester also requires that there be a clear line of accountability established between the measurement and justification of benefit estimates after the project has been completed. This ensures that benefit estimates tie back directly to the bottom line.

### COSTS

Costs represent the investment necessary to capture the value, or benefits, of the proposed project. IT or the business units may incur costs in the form of fully burdened labor, subcontractors, or materials. Costs consider all the investments and expenses necessary to deliver the proposed value. In addition, the cost category within TEI captures any incremental costs over the existing environment for ongoing costs associated with the solution. All costs must be tied to the benefits that are created.

### FLEXIBILITY

Within the TEI methodology, direct benefits represent one part of the investment value. While direct benefits can typically be the primary way to justify a project, Forrester believes that organizations should be able to measure the strategic value of an investment. Flexibility represents the value that can be obtained for some future additional investment building on top of the initial investment already made. For instance, an investment in an enterprise-wide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point. However, having the ability to capture that benefit has a PV that can be estimated. The flexibility component of TEI captures that value.

### RISKS

Risks measure the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: 1) the likelihood that the cost and benefit estimates will meet the original projections and 2) the likelihood that the estimates will be measured and tracked over time. TEI risk factors are based on a probability density function known as "triangular distribution" to the values entered. At a minimum, three values are calculated to estimate the risk factor around each cost and benefit.

## Appendix B: Glossary

**Discount rate:** The interest rate used in cash flow analysis to take into account the time value of money. Companies set their own discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 10% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their respective organizations to determine the most appropriate discount rate to use in their own environment.

**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.

**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.

**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.

**Return on investment (ROI):** A measure of a project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

### A NOTE ON CASH FLOW TABLES

The following is a note on the cash flow tables used in this study (see the example table below). The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1. Those costs are not discounted. All other cash flows in years 1 through 3 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 are not calculated until 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.

TABLE [EXAMPLE]  
Example Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3

Source: Forrester Research, Inc.

## Appendix C: Endnotes

<sup>1</sup> Source: “US Tech Market Outlook For 2016 And 2017: Cloud And Business Caution Will Slow Growth,” Forrester Research, Inc., May 6, 2016.

<sup>2</sup> Source: “Tame Your Tech MOOSE Before The BT Agenda Makes It Bigger,” Forrester Research, Inc., May 13, 2015.

<sup>3</sup> Forrester risk-adjusts the summary financial metrics to take into account the potential uncertainty of the cost and benefit estimates. For more information, see the section on Risks.