

# The Total Economic Impact™ Of Hitachi Vantara Hyperconverged Infrastructure Powered By VMware vSAN

Cost Savings And Other Business Benefits  
Enabled By Hitachi Vantara HCI

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## ABOUT FORRESTER CONSULTING

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## Executive Summary

Forrester Research forecasts a 5.9% increase in global tech spend by 2025.<sup>1</sup> A portion of that budget will likely be allocated by organizations toward increased infrastructure and storage for their business. According to Forrester's Future Fit Survey, 2022, 87% of business and technology professionals agreed innovation was critical to making their organizations resilient.<sup>2</sup> A key factor that can support organization resilience is a hyperconverged environment to streamline data operations across an organization.

Hitachi Vantara commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying [Hitachi Vantara Hyperconverged Infrastructure \(HCI\) with VMware vSAN](#) for their hybrid cloud solutions.<sup>3</sup> The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Hitachi Vantara HCI on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed the representative of an organization who has experience using Hitachi Vantara HCI and VMware together. Forrester used this experience to project a three-year financial analysis.

Prior to using Hitachi Vantara HCI, the interviewee noted how their organization frequently experienced storage failures with its aging storage systems, which led to outages, elevated technical incidents, and required remediation time. The interviewee also felt limited by the previous solution's ability to scale and deploy updates across the organization, slowing decision-making and business operations.

After the investment in Hitachi Vantara HCI, the organization improved storage from eight simple compute nodes with SAN to 16 HCI nodes, which helped to significantly expand operations. Whereas IT teams previously spent hours regularly dealing with disaster recovery at storage centers, today they are able to scale storage across international

### KEY STATISTICS



Return on investment (ROI)

**142%**



Net present value (NPV)

**\$5.0M**

locations and avoid costly mistakes. As a result, the average recovery time objective (RTO) shrank from 1 hour to 30 minutes, and the average recovery point objective time (RPO) was cut from 2 hours to 1 hour.

Paired with VMware to support its hyperconverged infrastructure, the organization became hybrid cloud-ready and improved in several areas: eliminating costs around maintaining legacy infrastructure, improving time to market on deployments across the organization, accelerating decision-making, and reducing downtime and incident support costs from more reliable hardware.

### KEY FINDINGS

**Quantified benefits.** Three-year, risk-adjusted present value (PV) quantified benefits include:

- **Avoided \$1.4 million in legacy infrastructure costs annually.** The organization has decommissioned 30% of its legacy infrastructure since deploying Hitachi Vantara HCI and moving

operations to the new hyperconverged infrastructure. The organization had greater visibility over its network and performance of component pieces, helping it to identify areas where hardware needed to be replaced or where resources could be shifted and become more efficient with operations overall.

- **Increased annual revenue by \$35 million from faster time to market and user efficiencies.**

The organization became more agile with servicing deployments and providing solutions to staff around the world by using Hitachi Vantara. Increased storage availability enabled remote branches and workers to access and leverage data from across the organization, as well as receive deployments of tools from the cloud without purchasing additional server space. These tools helped support data analysis and accelerated decision-making, driving faster recognition of revenue and more sales.

- **Reduced 75% of production downtime and incident support costs.** Since implementing Hitachi Vantara HCI with VMware at the organization, the number of technical incidents leading to a production outage declined from eight per month to just one. End-user interruptions were minimized for any incidents that still occurred, with supporting compute and storage infrastructure preserving production uptime. Hitachi Vantara HCI also helped IT team members to streamline standardization of security requirements across storage solutions, helping to further protect their organization from attacks.

**Unquantified benefits.** Benefits that were recognized but are not quantified in this study include:

- **Ease of management for integration into hybrid environment.** Hitachi Vantara offered robust integration support for apps and database software from Oracle and SAP, among others.

VMware helped to streamline integration of these solutions for IT teams. Integration support was especially critical for the organization because of the large number of legacy solutions that needed to be upgraded, while IT teams sought to avoid any potential downtime from integration errors.

- **Increased business agility and ability to expand operations.** Hitachi Vantara HCI with VMware afforded the organization scalability to expand operations through a hyperconverged environment. As a result, IT teams were able to quickly support service requests when filed across business locations and better manage resources.

**“We are going to operate in a hybrid model for years to come, and we don’t see that changing. [Hitachi enables us] to operate in that hybrid model where not only are we reducing costs but we’re adapting to this changing world and are able to scale the environment.”**

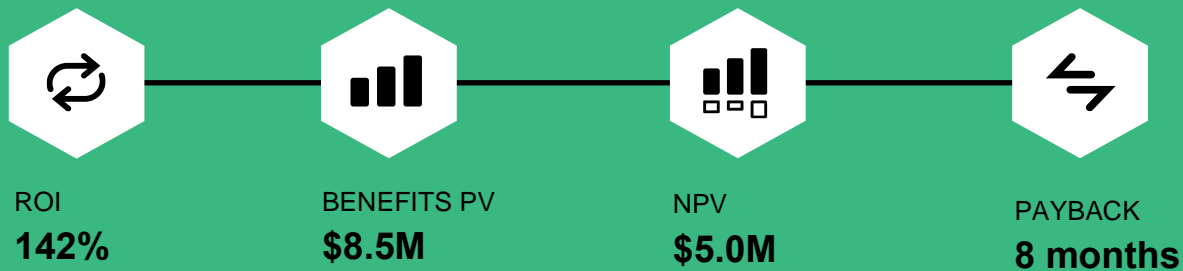
*Global director of IT, retail*

**Costs.** Three-year, risk-adjusted PV costs include:

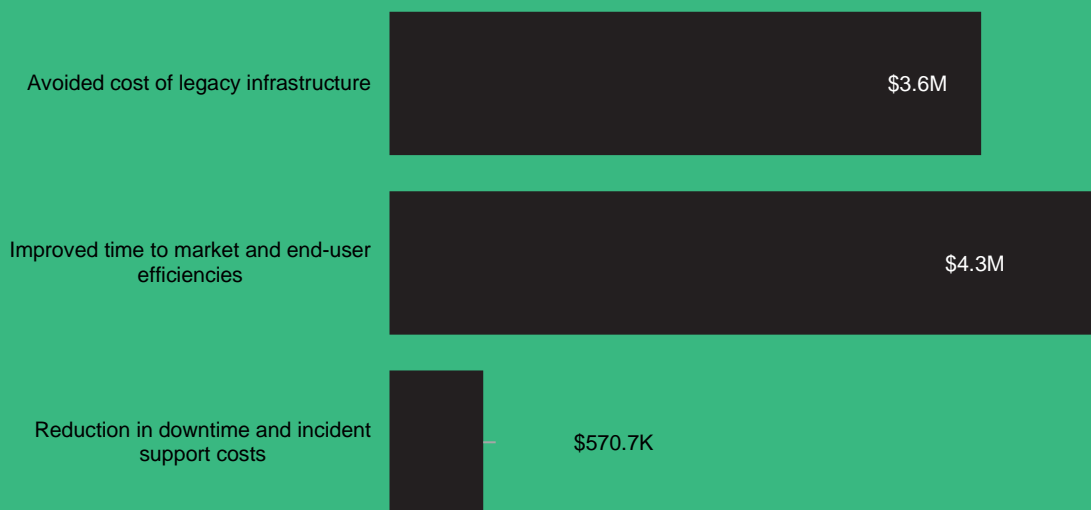
- **Licensing, hardware, and maintenance costs.** The organization paid for Hitachi Vantara HCI hardware and initial maintenance upfront. Following deployment, the organization incurred an annual license fee and recurring maintenance support cost.
- **Implementation costs.** Several business and IT personnel across teams at the organization supported implementation of Hitachi Vantara HCI

with VMware. Implementation planning was straightforward based on Hitachi's single-pane-of-glass experience with VMware. Timelines varied across teams based on data processes and workflows they migrated over from legacy infrastructure to the new solutions.

The interview and financial analysis found that the representative's organization experienced benefits of \$8.5 million over three years versus costs of \$3.5 million, adding up to a net present value (NPV) of \$5.0 million and an ROI of 142%.



### Benefits (Three-Year)



**“A lot of our on-premises applications are critical to our business. Hitachi’s hyperconverged environment gives us the ability to get increased performance, flexibility, and scalability, which we would not have with [our prior solution].”**

— Global director of IT, retail

## 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 Hitachi Vantara HCI with VMware vSAN.

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 Hitachi Vantara HCI with VMware can have on an organization.

### DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Hitachi 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 Hitachi Vantara HCI.

Hitachi 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.

Hitachi provided the customer name for the interview but did not participate in the interview.



### DUE DILIGENCE

Interviewed Hitachi Vantara stakeholders and Forrester analysts to gather data relative to Hitachi Vantara HCI with VMware.



### INTERVIEW

Interviewed the representative of an organization using Hitachi Vantara HCI with VMware to obtain data with respect to costs, benefits, and risks.



### FINANCIAL MODEL FRAMEWORK

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



### 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 Hitachi Vantara HCI With VMware Customer Journey

## ■ Drivers leading to the Hitachi Vantara HCI with VMware investment

### INTERVIEWEE'S ORGANIZATION

Forrester interviewed the global director of IT at a wholesale retailer who has experience deploying and using Hitachi Vantara HCI with VMware. Their organization has the following characteristics:

- Global operations with presence and data centers in North America, EMEA, and APAC.
- Annual revenue of \$3.5 billion.
- More than 2,400 employees worldwide.
- Eight simple compute nodes with prior solution, upgraded to 16 HCI nodes with Hitachi Vantara HCI.
- Average RTO of 1 hour, reduced to 30 minutes with Hitachi Vantara HCI.
- RPO time of 2 hours, reduced to 1 hour.

### KEY CHALLENGES

Prior to adopting Hitachi Vantara HCI, the organization had a mix of enterprise-size infrastructure and simple storage solutions from various vendors. This varied state of technology was due to business acquisitions carrying over legacy solutions and storage growth over the period of several years, leaving the company with outdated solutions.

The interviewee noted how their organization struggled with common challenges, including:

- **Storage failures leading to downtime for users and lost data.** The retailer experienced storage failures with aging servers on a weekly basis that could not be solved remotely since they were not in the public cloud or a hyperconverged environment. For IT teams, recovery of data was not guaranteed when as many as three drives in an array could be lost to

storage failure. In a few instances, the severity of these outages led to users losing access to the system for several hours at a time.

- **Technical incidents and outages requiring extended onsite support.** IT resources at the retailer faced service level agreements (SLAs) of 4 to 6 hours to ensure that technical incidents were resolved. This work included employees retrieving replacement drives and other hardware, traveling to the source of the technical errors, and changing out pieces. In several cases, these incidents would occur on the weekend, requiring overtime, travel, and other expenses.

**“You have to choose the right vendors that give you the ability to adapt to a changing environment and have the resiliency to be able to survive in any type of market. When you go with leaders in the space [like Hitachi Vantara], that’s what you get.”**

*Global director of IT, retail*

- **Lack of flexibility with solutions slowed business decision-making.** Reliance on a complex mix of on-premises servers and colocation environments complicated efforts to provision resources and streamline scale out of operations because employees lacked visibility into the infrastructure. Often, this resulted in teams not having the necessary resources to



address server and application deployment challenges. Delays in deployment slowed delivery of actionable insights to business decision-makers, which in turn stymied their decision-making, impacting the overall bottom-line revenue results for the organization.

#### Key Details

- Wholesale global retailer
- \$3.5 billion annual revenue
- 2,400+ employees
- Eight simple computer nodes (upgraded to 16 HCI nodes)

#### INVESTMENT OBJECTIVES

The interviewee's organization searched for a solution that could:

- Upgrade from simple storage and enable digital transformation with hyperconverged infrastructure.
- Decrease costs for physical equipment, maintenance, and incident support for system downtime.
- Partner with a consistently reliable solution from an industry leader.
- Innovate and grow features in connection with VMware, its current compute, and virtualization solution.

#### USE CASE DESCRIPTION

The global IT director at the retailer saw deployment of Hitachi Vantara HCI with VMware as an opportunity to upgrade existing storage and enable future business operations with a hyperconverged environment. The retailer took advantage of synchronizing on-prem data with the cloud to facilitate more holistic analysis and generate deeper insights. Hitachi Vantara helped improve scalability for environments internationally across the organization and enable support applications that operate in the hybrid model and will continue to do so for in the years to come.

**“The unique value proposition [of Hitachi Vantara] was the ability to scale and thus upgrade the environment based on our storage needs. We wanted someone who would be there in the future. It was their focus on customer support where Hitachi Vantara really shined.”**

— Global director of IT, retail

# Analysis Of Benefits

■ Quantified benefit data

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Avoided cost of legacy infrastructure	\$1,448,000	\$1,448,000	\$1,448,000	\$4,344,000	\$3,600,962
Btr	Improved time to market and end-user efficiencies	\$1,740,375	\$1,740,375	\$1,740,375	\$5,221,125	\$4,328,055
Ctr	Reduction in downtime and incident support costs	\$229,500	\$229,500	\$229,500	\$688,500	\$570,733
	Total benefits (risk-adjusted)	\$3,417,875	\$3,417,875	\$3,417,875	\$10,253,625	\$8,499,750

## AVOIDED COST OF LEGACY INFRASTRUCTURE

**Evidence and data.** Since adopting Hitachi Vantara HCI, the retailer has decommissioned 30% of its legacy infrastructure and moved those critical operations to the hyperconverged setup. The global IT director said they expect to decommission even more legacy infrastructure in the near future as they further reduce dependency on legacy applications.

With its hyperconverged infrastructure through Hitachi Vantara HCI with VMware, the organization had greater visibility into its network and the performance of each component piece. As a result, it could optimize performance compared to their legacy solution and cut back infrastructure requirements. In many cases, IT decision-makers saw that operations were running smoothly without the entirety of recommended resources by vendors and thus were able to retire hardware. They also saw opportunities to shift resources and increase operational reliability and performance.

Cost savings for the retailer came from avoided capex, facilities costs and maintenance, and consulting support. Specifically, less hardware needed by the organization reduced the capex charge to upgrade or build upon the equipment. In

addition, the retailer needed fewer colocation facilities for power and cooling to hold servers. Meanwhile, the retailer reallocated employee resources who had previously maintained legacy technology to higher-value tasks.

**“We’ve taken legacy equipment that should have been decommissioned many moons ago, and we moved those critical components onto hyperconverged [infrastructure]. Not only have we seen an increase in performance but [we’ve also seen] greater reliability.”**

*Global director of IT, retail*

**Modeling and assumptions.** For the financial model, the interview informed the following:

- Each year the retailer avoids \$800,000 in storage and server infrastructure costs. This represents 44% of the total costs saved.
- The retailer also avoids \$400,000 in maintenance and support costs annually.
- Avoided power and cooling costs for the retailer total \$400,000 annually, while facilities and capital expenditures total \$210,000.

**Risks.** Differences in organizations that may impact the benefit result include:

- The scale of data operations and hardware leveraged by the organization.

- The organization’s level of dependency on colocation facilities.
- The speed with which an organization plans to move operations to its hyperconverged infrastructure.
- The type and age of legacy storage solutions deployed by the organization.

**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 \$3.6 million.

### Avoided Cost Of Legacy Infrastructure

Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Avoided cost for storage and server infrastructure	Interview	\$800,000	\$800,000	\$800,000
A2	Avoided maintenance and support costs	Interview	\$400,000	\$400,000	\$400,000
A3	Avoided power and cooling costs	Interview	\$400,000	\$400,000	\$400,000
A4	Avoided facilities and capital expenditures	Interview	\$210,000	\$210,000	\$210,000
At	Avoided cost of legacy infrastructure	A1+A2+A3+A4	\$1,810,000	\$1,810,000	\$1,810,000
	Risk adjustment	↓20%			
Atr	Avoided cost of legacy infrastructure (risk-adjusted)		\$1,448,000	\$1,448,000	\$1,448,000
<b>Three-year total: \$4,344,000</b>			<b>Three-year present value: \$3,600,962</b>		

“We’ve saved at least 30% across the board [on infrastructure]. I’m sunsetting a lot of equipment, and that capex goes away. When you talk facilities, you have power, cooling, and manpower costs. Eliminating equipment means you can save on those components, and that adds up to a significant amount of money.”

— Global director of IT, retail

## IMPROVED TIME TO MARKET AND END-USER EFFICIENCIES

**Evidence and data.** By moving to a hyperconverged infrastructure with Hitachi Vantara HCI and VMware, IT teams at the retailer became more capable of addressing service requests compared to their experience with the prior storage environment.

For example, the global director of IT is tasked with providing tools to teams to create actionable insights. Their organization expanded operations during the COVID-19 pandemic to new locations around the world. Previously, if a request came from an office in Asia Pacific for deployment of analytics tools, the IT team would have been slow or unable to support the request since it would require purchasing more physical servers — a time-consuming process.

The flexibility of a scalable, optimized environment facilitated by Hitachi Vantara HCI with VMware enabled the interviewee’s IT team to deploy tools from the cloud to offices around the world without purchasing additional physical servers. The organization’s teams were able to access tools faster, derive actionable insights, and make decisions more quickly, leading to accelerated realization of revenue.

The global director of IT explained: “It’s faster based on the employee who’s actually doing the task using the tools at their disposal to optimize performance. [With Hitachi], you see an increase in speed and reliability for deployments because you have everything on a single pane of glass.”

**Modeling and assumptions.** For the financial model, the interview informed the following:

- The organization generates \$3.5 billion in revenue annually.
- Of its annual revenue, the organization sees a 1% improvement in value. This improvement includes faster time to market, server optimization, greater break/fix support, and employee productivity.
- An operating margin rate of 5.85% is applied to the revenue.

**“What we’re doing is allowing them to get to market faster. If [sales] get a solution three months faster, they’ve derived value behind that ... because I provided them the tools, and now they can run and sell.”**

*Global director of IT, retail*

**Risks.** Differences in organizations that may impact the benefit result include:

- The size of and revenue generated by organization.
- The scale of deployment of Hitachi Vantara HCI and areas of the business in which it impacts.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$4.3 million.

<b>Improved Time To Market And End-User Efficiencies</b>					
<b>Ref.</b>	<b>Metric</b>	<b>Source</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
B1	Annual revenue	Interview	\$3,500,000,000	\$3,500,000,000	\$3,500,000,000
B2	Percentage improvement after deploying Hitachi HCI	Interview	1%	1%	1%
B3	Impact on revenue after deploying Hitachi HCI	B1*B2	\$35,000,000	\$35,000,000	\$35,000,000
B4	Operating margin	TEI standard	5.85%	5.85%	5.85%
Bt	Improved time to market and end-user efficiencies	B3*B4	\$2,047,500	\$2,047,500	\$2,047,500
	Risk adjustment	↓15%			
Btr	Improved time to market and end-user efficiencies (risk-adjusted)		\$1,740,375	\$1,740,375	\$1,740,375
<b>Three-year total: \$5,221,125</b>			<b>Three-year present value: \$4,328,055</b>		

## REDUCTION IN DOWNTIME AND INCIDENT SUPPORT COSTS

**Evidence and data.** The global director of IT saw a decrease in the number of technical incidents that led to production outages, primarily stemming from replacing drives, falling from eight per month to one. With Hitachi Vantara HCI with VMware vSAN, some nonproduction outage incidents still occur each month, but are now significantly shorter — and invisible to users — because they all occur in the background, while the supporting compute and storage infrastructure helps replicate and virtualize environments to ensure key services continue running without interruption.

The interviewee credited Hitachi Vantara HCI's self-healing capabilities with resolving issues before they became larger problems in a hyperconverged environment. In particular, with regard to security, IT teams were able to streamline standardization of security requirements across storage solutions and further protect the organization from attacks. Meanwhile, if a substantial amount of data was deleted in the hyperconverged environment, it became easier to recover copies of data without worrying about whether a bad backup had happened.

In the past, IT teams at the organization allocated two team members 4- to 6-hour SLAs to resolve issues. With Hitachi Vantara's HCI, it became rare for teams to face an issue that required close to 4 hours and more than one FTE to resolve.

Most critically for the employee experience, workers were less worried about being called in late at night or on weekends to rush to data centers and replace failed drives. This change saved employees on travel and food costs, and it saved the organization from paying a 1.5x hourly rate for overtime work. The global IT director said: "When you need less people to go in on the weekends and service items, and they can wait until Monday morning to replace a part, that decreases FTE actual on-call rotation. ...That adds up to a substantial amount."

**“If you’re on legacy equipment with simple storage, especially if it’s over five years old, you’re losing drives every single week. ... Having a self-healing hyperconverged environment [with Hitachi] took those incidents down from eight per month to one impacting incident per month.”**

*Global director of IT, retail*

**Modeling and assumptions.** For the financial model, the interview informed the following:

- Downtime and incident support costs prior to Hitachi Vantara VCI required hours of work from multiple employees each month and created outages for users, totaling \$360,000 each year.
- Fewer major incidents reduces costs by 75% to \$90,000 annually.

**Risks.** Differences in organizations that may impact the benefit result include:

- The frequency and severity of downtime incidents prior to Hitachi Vantara HCI.
- The number of employees available to provide support and time required of them.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of nearly \$571,000.

Reduction In Downtime And Incident Support Costs					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Downtime and incident support costs prior to deploying Hitachi Vantara HCI	Interview	\$360,000	\$360,000	\$360,000
C2	Decrease in downtime and incident support costs after deploying Hitachi Vantara HCI	Interview	75%	75%	75%
C3	Downtime and incident support costs after deploying Hitachi Vantara HCI	C1*(1-C2)	\$90,000	\$90,000	\$90,000
Ct	Reduction in downtime and incident support costs	C1-C3	\$270,000	\$270,000	\$270,000
	Risk adjustment	↓15%			
Ctr	Reduction in downtime and incident support costs (risk-adjusted)		\$229,500	\$229,500	\$229,500
<b>Three-year total: \$688,500</b>			<b>Three-year present value: \$570,733</b>		

## UNQUANTIFIED BENEFITS

The interviewee mentioned how ease of management for integration into the hybrid environment has helped the organization, but they were not able to quantify this benefit at this time.

Hitachi Vantara HCI support for various app and database software from Oracle, SAP, and VMware helped to streamline integration of these solutions for IT teams. This was important to the interviewee because their organization had a significant amount of legacy software from VMware, and they needed reliable support to maintain uptime when upgrading equipment. The interviewee also observed that Hitachi Vantara HCI continues to expand component support for partners, which in turn helps their organization to expand the reach of their hyperconverged infrastructure and maximize the benefits from a hybrid cloud operating model.

**“When you invest in storage, you invest in the reliability of the business vendor ... what you’re trying to do is mitigate the risk. We know that VMware is a very reliable, dependable solution. It works quite well [for my company] with directly supported hardware from Hitachi Vantara HCI.”**

*Global director of IT, retail*

The global director of IT spoke to leveraging Hitachi Vantara HCI and VMware together as a “long-term play” for their organization because of the reliability of the services. Employees no longer have to build custom configurations to integrate the solutions and thus avoid any technical setbacks, like dataflow

errors or data not being saved, that can arise from poor integrations. The interviewee said: “We’re mitigating risk by going with the leading players in the market. That’s all you can do to ensure a reliable environment.”

**“You certainly see an increase in speed and reliability for deployments because you have everything through a single pane of glass. You can go ahead [and] provision, deploy, and not deal with the same challenges of, ‘I can’t set this up because I don’t have resources.’”**

*Global director of IT, retail*

## FLEXIBILITY

The value of flexibility is unique to each customer. In addition to flexibility benefit scenarios outlined in each benefit section, a future business opportunity from the investment in Hitachi Vantara HCI and VMware is the potential for increased business agility and ability to expand operations.

Over time, the organization will become even less dependent on legacy solutions for inventory control and supply chain management and will further reconcile visibility of operations across sites to data flowing through one source. This will enable the organization to expand to additional international locations and scale data centers, all while managing availability of resources to ensure locations receive support when requested.

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

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Dtr	Licensing, hardware, and maintenance support costs	\$1,470,000	\$682,500	\$682,500	\$682,500	\$3,517,500	\$3,167,276
Etr	Implementation costs	\$349,140	\$0	\$0	\$0	\$349,140	\$349,140
	Total costs (risk adjusted)	\$1,819,140	\$682,500	\$682,500	\$682,500	\$3,866,640	\$3,516,416

## LICENSING, HARDWARE, AND MAINTENANCE SUPPORT COSTS

**Evidence and data.** The organization initially paid for the Hitachi Vantara HCI hardware upfront, alongside initial maintenance. From there they paid an annual license fee and a recurring maintenance support cost that covered upgrade and warranty services.

**Modeling and assumptions.** For the financial model, the interview informed the following:

- The organization pays \$1.4 million initially for the hardware and maintenance.

- For each year of Hitachi Vantara HCI service, the organization pays \$370,000 in license fees and \$280,000 in maintenance support costs.

**Risks.** Differences in the size and scale of the deployment of Hitachi Vantara HCI may impact the cost results for other organizations.

**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 less than \$3.2 million.

Licensing, Hardware, And Maintenance Support Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
D1	Annual license fees	Interview		\$370,000	\$370,000	\$370,000
D2	Hardware and ongoing maintenance support costs	Interview	\$1,400,000	\$280,000	\$280,000	\$280,000
Dt	Licensing, hardware, and maintenance support costs	D1+D2	\$1,400,000	\$650,000	\$650,000	\$650,000
	Risk adjustment	↑5%				
Dtr	Licensing, hardware, and maintenance support costs (risk-adjusted)		\$1,470,000	\$682,500	\$682,500	\$682,500
<b>Three-year total: \$3,517,500</b>			<b>Three-year present value: \$3,167,276</b>			

**IMPLEMENTATION COSTS**

**Evidence and data.** Several business and IT personnel across teams were involved in the implementation of Hitachi Vantara HCI with VMware. Implementation timelines varied across business units depending on their data processes and workflows.

Validation of some of the more complex processes that were up for migration to the solution took upward of 20 hours to complete. If a process was not suitable for migration, time spent validating the process on Hitachi Vantara HCI took twice as much time.

The global director of IT commented that the process for implementation was easier compared to prior deployments based on their company’s existing knowledge of VMware and the ease of integration with Hitachi Vantara HCI: “We’re using an environment that we are already built around, so we already have that skill set. We have the knowledge of the VMware, and we already know how [Hitachi HCI with VMware] works to protect and scale our data.”

**Modeling and assumptions.** For the financial model, the interview informed the following:

- The full-time equivalent 12 employees are involved with implementation of Hitachi Vantara HCI.
- The average fully loaded hourly compensation for the implementation team is \$110 per hour.
- Across business units and IT, implementation of the solution takes 230 hours to complete.

**Risks.** Differences in organizations that may impact the cost result include:

- The scale of the organization’s migration to the solution.
- The number of employees available to support the migration, their bandwidth, and their hourly rate.

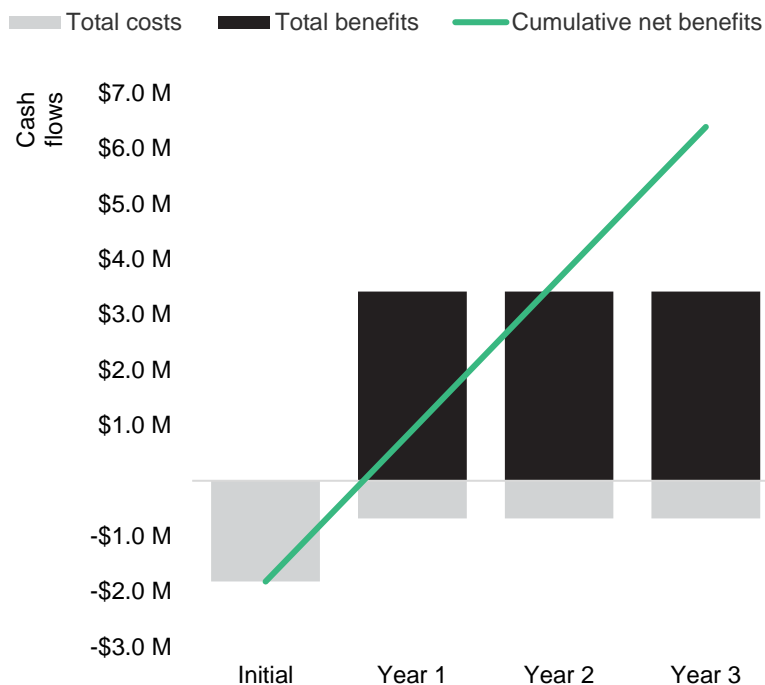
**Results.** To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of \$349,000.

Implementation Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Implementation team FTEs	Interview	12			
E2	Average fully loaded hourly compensation for implementation team	Interview	\$110			
E3	Initial implementation, planning, and data migration hours	Interview	230			
Et	Implementation costs	E1*E2*E3	\$303,600			
	Risk adjustment	↑15%				
Etr	Implementation costs (risk-adjusted)		\$349,140			
<b>Three-year total: \$349,140</b>			<b>Three-year present value: \$349,140</b>			

# Financial Summary

## CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

### Cash Flow Chart (Risk-Adjusted)



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

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

### Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$1,819,140)	(\$682,500)	(\$682,500)	(\$682,500)	(\$3,866,640)	(\$3,516,416)
Total benefits	\$0	\$3,417,875	\$3,417,875	\$3,417,875	\$10,253,625	\$8,499,750
Net benefits	(\$1,819,140)	\$2,735,375	\$2,735,375	\$2,735,375	\$6,386,985	\$4,983,334
ROI						142%
Payback period (months)						8

# Appendix A: Total Economic Impact

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

## TOTAL ECONOMIC IMPACT APPROACH

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

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

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

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

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



## PRESENT VALUE (PV)

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



## NET PRESENT VALUE (NPV)

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



## RETURN ON INVESTMENT (ROI)

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



## DISCOUNT RATE

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



## PAYBACK PERIOD

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

## Appendix B: Supplemental Material

### *Related Forrester Research*

“Navigating The 2023 Downturn: Technology Executive,” Forrester Research, Inc., January 26, 2023

“Global Tech Spend Will Slow to 4.7% in 2023,” Forrester Research, Inc., January 19, 2023

## Appendix C: Endnotes

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<sup>1</sup> Source: “Global Tech Market Forecast, 2022 To 2027,” Forrester Research, Inc., January 18, 2023.

<sup>2</sup> Source: Future Fit Survey, 2022, Forrester Research, Inc., June 2022.

<sup>3</sup> Total Economic Impact is a methodology developed by Forrester Research that enhances a company’s technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

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