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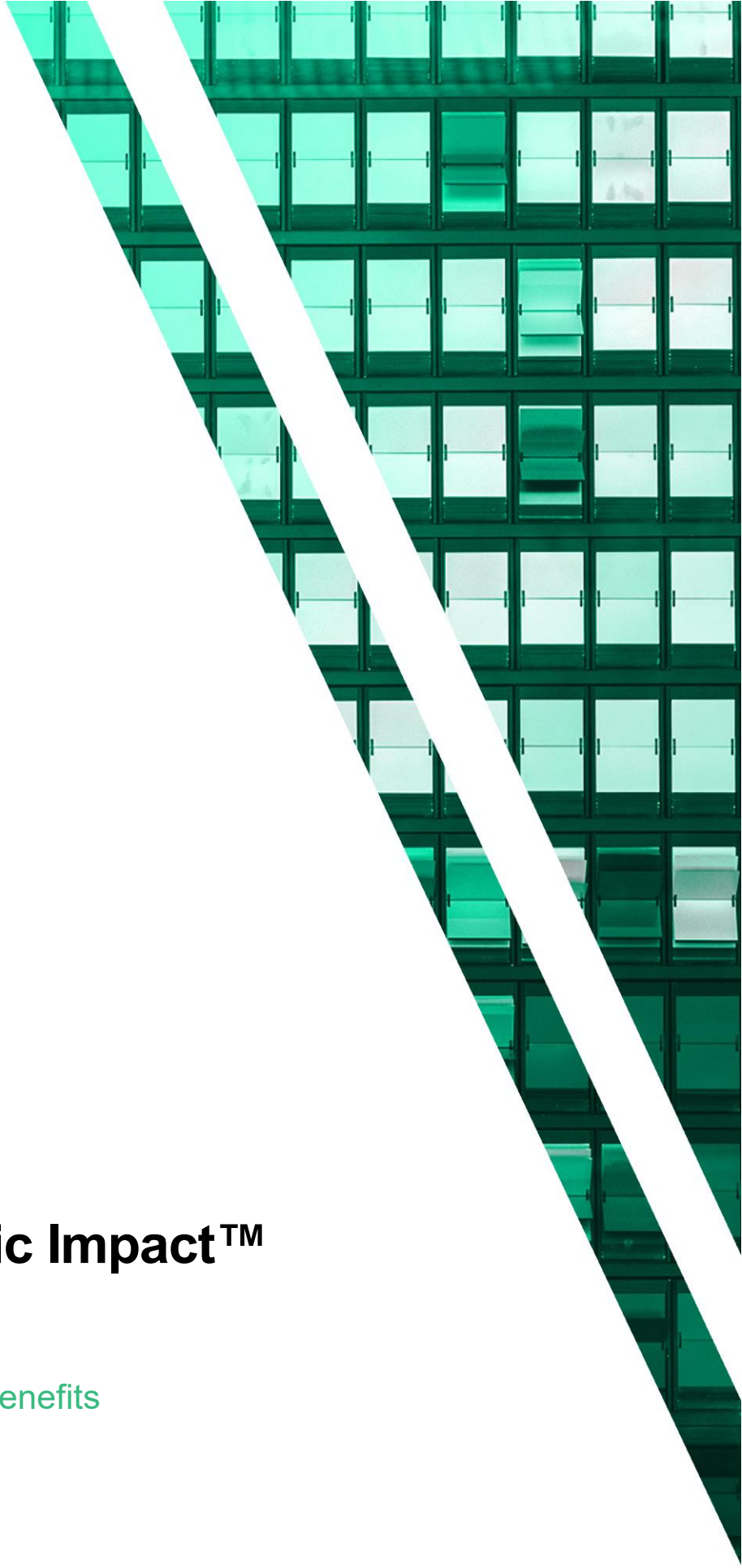

The Total Economic Impact™ Of Nutanix Era

Cost Savings And Business Benefits Enabled By Nutanix Era

October 2020

Table Of Contents

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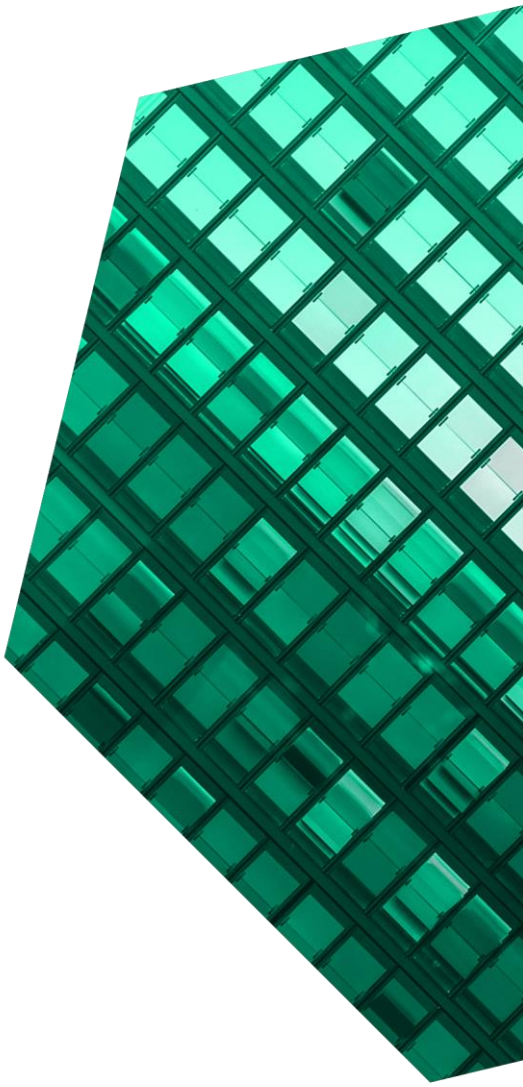


Executive Summary

Databases are critical to company success as enterprise applications rely on databases to process data, perform, and scale. Nutanix Era simplifies database management, enabling a new level of efficiency, standardization, cost savings, and improved employee experience. A composite organization that invests in Era would experience an ROI of 291% and a payback period of under six months.

Nutanix commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Nutanix Era. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Era on their organizations. Nutanix Era is an extension of the enterprise cloud platform that provides a database-as-a-service model to simplify database management and operation.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four customers with experience using Era. For the purposes of this study, Forrester aggregated the experiences of the interviewed customers and combined the results into a single composite organization.

Prior to using Era, the customers managed their traditional legacy database estates with the help of multiple solutions that were highly manual, slow, and had significant storage and compute requirements. IT inefficiencies, inconsistent performance, and cumbersome and expensive database estates sprung from these complex environments.

After the investment in Era, the customers were able to bring a fresh approach to their database administration that drove efficiency, automation, and simplification.

KEY STATISTICS

Return on investment (ROI)
291%

Net present value (NPV)
$6.7M

KEY FINDINGS

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

- **Increased speed of database provisioning by 97%.** The reduction of the average provisioning from two weeks to hours removed bottlenecks and improved both database administrator (DBA) and developer productivity. Over three years and a cumulative total of 120 provisioning requests, the shorter provisioning cycle is worth more than $371,000 to the composite organization.
- **Decreased storage requirements for copies and backups by 60%.** Database clones within Era require 60% less storage, which saves the composite organization $800 per terabyte (TB) of avoided storage. Over three years, the storage savings are worth more than $4.3 million to the composite.

- **Simpler database management reduced the need for DBA overtime by up to 50%.** For the composite organization, removing complexities and improving DBA productivity reduces monthly overtime from 100 hours to 50. Over three years and a cumulative total of 1,500 avoided overtime hours, the cost savings are worth more than $119,000 to the composite.
- **Reduced costs related to administration tool sets and licenses.** Era provides savings by reducing reliance on administration tools and licenses. Over three years and after migrating all databases onto Nutanix, the licensing savings are worth more than $2.6 million to the composite organization.
- **Automated database patching and management avoids losses of $35,000 per hour.** For the composite organization, the reduction of the downtime from 4 hours per patching event to 30 minutes avoids financial consequences for six patching events each year. Over three years and a cumulative total of 63 avoided downtime hours, the improved patching capabilities are worth more than $1.6 million to the composite.

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

- The Nutanix team provided exemplary service.
- Era included out-of-the-box best practices to simplify managing a complex environment.
- Avoided legacy hardware and software refreshes, saving millions.
- Improved employee experience and made the interviewed organizations better able to attract and retain young people.

Costs. Risk-adjusted PV costs include:

- **Implementation and training costs under $154,000.** For the composite organization, five resources spend three months on the Era implementation and seven resources each receive 16 hours of training as part of the process.
- **Three-year licensing costs of $1.6 million.** Era has a subscription term-based software license that is based on the concept of managed database server virtual central processing units (vCPUs). The consumption-based model allowed customers to license just the database servers that Nutanix Era manages.
- **One DBA and .25 FTE administrator dedicated to ongoing management.** The team providing ongoing management of the Nutanix Era investment to the composite organization includes a fully dedicated FTE DBA and a partial Nutanix administrator.

Synopsis. The customer interviews and financial analysis found that the composite organization would experience benefits of $9.0 million over three years versus costs of $2.3 million, adding up to a net present value (NPV) of $6.7 million and an ROI of 291%.

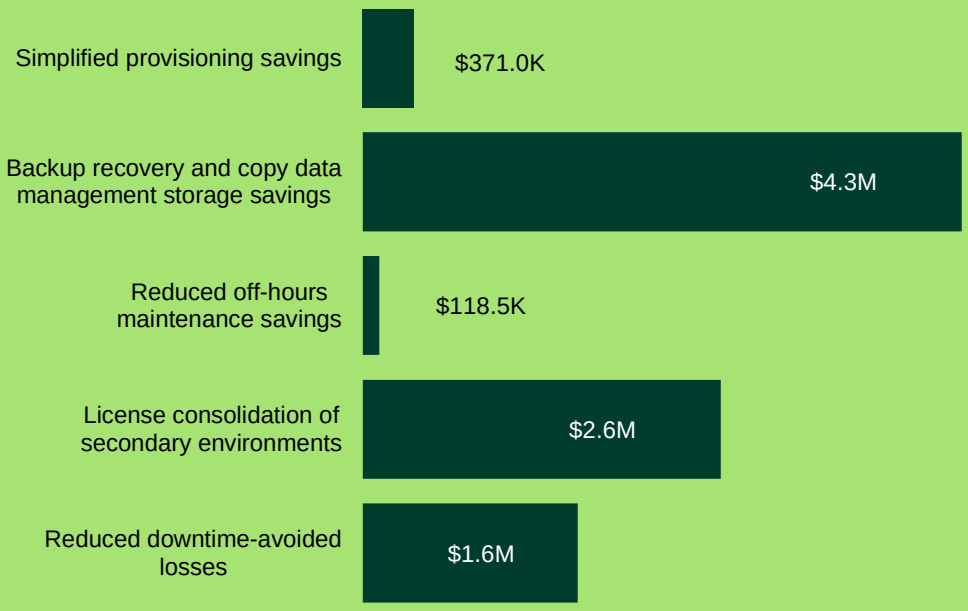
ROI
291%

BENEFITS PV
$9.0M

NPV
$6.7M

PAYBACK
<6 months

Benefits (Three-Year)



With Nutanix, we are in a position to do more with less. We can provide a faster turnaround and a more highly available service for our customers. Era provides a cloudlike experience on-premises that maximizes the investment we've already made in our Nutanix infrastructure, and it answers the challenges that we have as a database administration team.

— Database architect, aerospace and defense

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 Era.

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 Era can have on an organization.

DUE DILIGENCE

Interviewed Nutanix stakeholders and Forrester analysts to gather data relative to Era.

CUSTOMER INTERVIEWS

Interviewed four decision makers at organizations using Era to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION

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

FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the 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 Nutanix Era Customer Journey

Drivers leading to the Era investment

Interviewed Organizations			
Industry	**Region**	**Interviewee**	**Size**
Aerospace and defense	Headquartered in US	Database architect	$4.7 billion revenue 13,000 employees
Telecommunications	Headquartered in Australia	Database and application operations manager	$1.4 billion revenue 2,000 employees
Aviation management	Headquartered in US	Database team lead	$2.0 billion revenue 500+ employees
Travel	Headquartered in US	Manager of database administration	$7.6 billion revenue 22,000 employees

KEY CHALLENGES

The interviewed customers cited several challenges in their prior environments that drove them to look for a new way to manage their database operations:

- **Traditional database management was time-consuming and required frequent overtime.** The DBA teams managed databases on legacy software and hardware technologies, and they typically filled their time with basic tasks like provisioning, patching, and lifecycle management. Management tasks for the existing database estate left little capacity for new requests or strategic projects. To handle the capacity of existing database management and incoming requests, the DBA teams often needed to work overtime and weekends.

> **"It was very tricky for our team to handle requests efficiently because even one refresh took two to three days for one person. There was also a lot of manual intervention, which led to overtime."**
>
> *Database team lead, aviation management*

- **Legacy provisioning was complex, slow, and hindered developer productivity.** Before Era, the customers juggled multiple solutions and required inputs from several teams to provision a database, creating complexities and hampering efficiency. The customers lacked best practices they could apply holistically across several different database types, creating opportunities for mistakes and nonstandard provisioning.

> **"We get requests for new databases all the time, but we have to have a server before we can even start. Our database and operations teams were resource-constrained, and a request could take up to two weeks to deliver. That was just too long."**
>
> *Database architect, aerospace and defense*

- **Proliferation of backups created copy data management and licensing issues.** Before the customers invested in Era, the size of the database estate multiplied regularly from continual cloning, refreshing, and provisioning of

new databases. Managing the growing environments required longer backup windows and increased space requirements. Side effects included performance degradation, and customers began to surpass their existing licensing agreements. To avoid refreshing the existing solution, the interviewed customers looked for an alternative.

> **"We had license compliance issues. We ran most of our databases on [our previous solution], and [our solution provider] told us that we must license every single processor in the data center. So that got us to look at Nutanix to re-platform."**
>
> *Database architect, aerospace and defense*

- **DBAs faced increasing patching challenges and costly downtime.** With today's always-on expectations, downtime is a four-letter word, and it can have significant financial consequences. As the frequency of patching events accelerated for the interviewed customers, they experienced more frequent patching events and increased expected downtime.

> **"In our previous environment, we had challenges with patching. To patch our environment, it took a week's worth of patching activities and it required a significant amount of downtime for all of our applications."**
>
> *Manager of database administration, travel*

- **An aging workforce put pressure on existing teams that struggled to attract and retain talent.** The interviewed customers found it challenging to hire technologists with the specialized skillsets to maintain legacy databases. And while finding, attracting, and retaining talent is a constant challenge, an aging workforce exacerbated this. For the aerospace and defense organization, these factors coalesced into a particularly painful situation when a significant portion of the team retired during one year, putting pressure on the remaining team members. When a veteran DBA leaves or retires, it prompts a knowledge leak, creates a transition gap, and causes quality issues.

> **"Last year, we lost half of our senior DBAs to retirement. The three of us who were left are all over 55, so it's a huge problem. We have more work than we can do in our remaining years."**
>
> *Database architect, aerospace and defense*

WHY NUTANIX?

The interviewed organizations selected Nutanix Era to modernize their database management approach for the following reasons:

- **Nutanix allowed for a seamless migration and avoided legacy refresh costs.** Era is built on the Nutanix hyperconverged infrastructure platform that uses a scalable node structure to meet organizational needs while avoiding large, up-front infrastructure purchases.
- **Era provided a cloudlike and consistent experience across any database.** The interviewed customers chose Era for its ability to provide an on-premise yet cloudlike experience for managing several different types of databases.

Investment objectives

Customers cited several objectives for the Era investment:

- Improve performance
- Drive cost savings
- Improve productivity
- Have a cloudlike experience

"Every time we came to a refresh cycle, it was a huge undertaking. But Nutanix gave us the capability to swap in newer nodes, let the data migrate over, and then swap the older infrastructure out more seamlessly. That migration capability was appealing to us, and it was one of the key reasons we switched from our legacy environment to Nutanix."

Manager of database administration, travel

"IT wants a cloudlike experience. But they understand that we can't migrate. Not every database is a candidate to move to the cloud. But, with Era, we can provide something like that. Database as a service is really what they want."

Database architect, aerospace and defense

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four companies that Forrester interviewed and 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 headquartered in the United States and it has global operations. It generates $3 billion in annual revenue and has 10,000 employees. The company provides B2C services.
- **Previous environment.** The status quo was to manage the traditional legacy databases manually with the help of multiple point solutions. The organization used some existing scripting to automate routine tasks, but, in general, the legacy system was slow and had significant storage and compute requirements. The database team and operations engineers were two separate teams with mutually exclusive duties. The organization has five database administrators and two Nutanix administrators.
- **Deployment characteristics.** The composite organization refreshed its existing database with Nutanix infrastructure before investing in Era. The composite has a hybrid cloud strategy and an on-premises deployment of Era. The enterprise estate is comprised of six production databases, each with several secondary database copies for functional testing, user acceptance testing, development, disaster recovery, pre-production, and high availability. Each database holds approximately 10 TB of data.

Key assumptions

- **$3 billion revenue**
- **10,000 employees**
- **5 DBAs**

"We started with a refresh of our existing database with Nutanix infrastructure and then we laid Era on top for database management capability. We leveraged Era to build all production, disaster recovery [DR], and pre-production databases to the same standard. Then we leveraged it for patching to make sure there's consistency with patching across the virtual databases."

Manager of database administration, travel

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	Simplified provisioning savings	$149,178	$149,178	$149,178	$447,535	$370,984
Btr	Backup recovery and copy data management storage savings	$1,503,360	$1,758,240	$2,013,120	$5,274,720	$4,332,269
Ctr	Reduced off-hours maintenance savings	$29,160	$58,320	$58,320	$145,800	$118,524
Dtr	License consolidation of secondary environments	$900,900	$1,044,225	$1,208,025	$3,153,150	$2,589,603
Etr	Reduced downtime-avoided losses	$624,750	$624,750	$624,750	$1,874,250	$1,553,661
	Total benefits (risk-adjusted)	$3,207,348	$3,634,713	$4,053,393	$10,895,455	$8,965,041

SIMPLIFIED PROVISIONING SAVINGS

One key challenge customers faced was having complex and manual database provisioning processes. This required several individuals to provide inputs, which created bottlenecks and inefficiencies. These bottlenecks caused delays downstream that were felt across the organization. The interviewed organizations cited several ways that Era helped them improve their provisioning practices and reduce the deployment cycle:

- **Provisioned in a fraction of the time.** Traditionally, a new database request would require the DBA to submit three separate requests from three separate teams: one for storage allocation, one for compute provisioning, and one for an operating system. By combining these three roles, customers used single-click automation and templates to deploy a new database environment in a fraction of the time required in the legacy environment.

"A new database build used to be a very manual process. Now with Era, we have a more automated and seamless method. We configured one gold copy, and we use that for all of our new database builds. Before Era, it used to take us two weeks to get a database available for use. Now, it [takes] maybe 30 minutes at worse."

Manager of database administration, travel

"What matters is how fast can we deliver, because there is a team on the other side waiting for a test environment. With Era, we can deliver an environment quickly, so the waiting time of our developers has been cut short."

Database application operation manager, telecommunications

- **Reduced idle time and improved service-level agreement (SLA) response.** Provisioning automation greatly reduced idle time for employees involved in the database and server provisioning, and it helped them meet SLA timelines. Employees downstream were able to begin or continue tasks that were previously put on hold.
- **Standardized provisioning created consistency.** Customers created gold images for provisioning, which resulted in consistent and standardized database creation, regardless of database type or which DBA executed the provisioning.

> **"The beauty of provisioning with Era is that it's standardized because we provision from templates. So, regardless of who's spinning up the server or who's doing the database, they're going to be stood up the same way."**
>
> *Database architect, aerospace and defense*

Modeling and assumptions. To capture the benefit realized by the interviewed organizations, Forrester assumes the following about the composite organization:

- It responds to 40 provisioning requests annually.
- In the prior environment, a provision request required two weeks to fulfil.
- With the investment in Era, the elapsed time to provision a new environment decreases by 97%, saving 3,104 hours each year.
- The burdened hourly cost of a DBA is $72.
- Only a portion of the elapsed time is spent actively provisioning. The rest of the time is lost to process inefficiencies. To conservatively capture only the active working time, Forrester assumes DBAs are actively involved with provisioning for 50% of the elapsed time.
- The downstream application owners also avoid downtime of 3,104 hours each year. They can spend these hours on application development and allow faster time-to-market.
- The burdened hourly cost of an application owner is $58.
- Forrester assumes a 30% productivity recapture for application owners and their avoided downtime.

Avoided downtime over 3 years
9,312 hours

Risks. Forrester recognizes that these results may not be representative of all experiences, and the benefit will vary between organizations depending on frequency of provisioning requests, burdened costs of resources, and degree of productivity recaptured for value-added activities. The downstream impact of faster provisioning may be more impactful than modeled here. Consider the productivity lift of application teams beyond the application owner, the potential revenue generating abilities of applications developed, and other opportunity costs.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $371,000.

Simplified Provisioning Savings: Calculation Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Number of provisioning requests	Composite	40	40	40
A2	Elapsed hours to provision a server and database in legacy environment	Interviews: 2 weeks	80	80	80
A3	Percentage of time saved using Era	Interviews	97%	97%	97%
A4	Hours saved provisioning with Era (showing rounded value)	A1*A2*A3	3,104	3,104	3,104
A5	Burdened hourly cost of DBA (showing rounded value)	$150,000/2,080 hours	$72	$72	$72
A6	Percentage of elapsed time that DBA is actively involved with provisioning	Assumption	50%	50%	50%
A7	Subtotal: Productivity lift impact on DBA	A4*A5*A6	$111,744	$111,744	$111,744
A8	Application owner idle time avoided per provision request	A4	3,104	3,104	3,104
A9	Burdened hourly cost of application owner	$120,000/2,080 hours	$58	$58	$58
A10	Productivity recapture	Assumption	30%	30%	30%
A11	Subtotal: Downstream impact of faster provisioning (showing rounded value)	A8*A9*A10	$54,010	$54,010	$54,010
At	Simplified provisioning savings	A7+A11	$165,754	$165,754	$165,754
	Risk adjustment	↓10%			
Atr	Simplified provisioning savings (risk-adjusted)		$149,178	$149,178	$149,178
Three-year total: $447,535		**Three-year present value: $370,984**			

BACKUP RECOVERY AND COPY DATA MANAGEMENT STORAGE SAVINGS

A key challenge customers faced was that traditional database management resulted in multiple copies, backups, upgrades, and refreshes. This led to high storage costs and long backup and recovery cycles. Era simplified lifecycle management by allowing DBAs to restore to any point in time with lesser storage requirements than previous solutions did. Customers cited several improvements related to their backup recovery and copy data management, including:

- **Increased frequency of backups from once a day to twice an hour.** Limited by legacy environment capabilities, the customers performed backups only once every 24 hours. After the Nutanix investment, the frequency increased to once every 30 minutes.

> **"Era's backup and recovery abilities is a valuable tool in the toolbox, especially for point-in-time recovery. That was traditionally very painful for us. But to have a graphical user interface with a slide bar that you can recover to a specific point in time down to sub-seconds, that's amazing, I've never seen anything like it"**
>
> *Database architect, aerospace and defense*

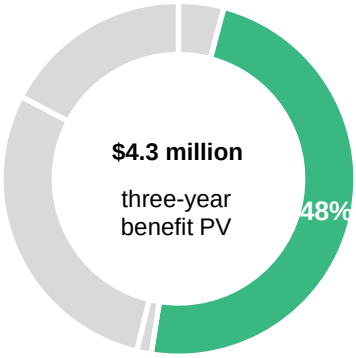
- **Duration of backup reduced from 1 hour to seconds.** For the customers, a full backup cycle took an hour in their legacy environments. With Era, the same backup takes only seconds. The database and application operations manager said, "The reason we use Era is that it saves us a lot of time."
- **Storage costs shrunk by up to 80%.** During the legacy backup hour, the system used a phenomenal amount of server resources. Customers noted this caused performance problems and negatively impacted users. With the ability to run backups in seconds, performance improved, and disk storage requirements dropped by up to 80%.

> **"We are counting on an 80% reduction in storage cost because of the Nutanix platform and the ability it has to reduce the amount of storage for the backups and copies."**
>
> *Database architect, aerospace and defense*

Modeling and assumptions. To capture the benefit realized by the interviewed organizations, Forrester assumes the following about the composite organization:

- Its database estate managed by Era has six, seven, and eight production databases in Years 1, 2, and 3, respectively. Each database contains 10 TB of data.
- The composite completes full backups of its production databases once per week, or 52 times a year.
- With the investment in Era, the composite organization reduces its space requirements by 60%.
- A TB of storage costs $800.
- The composite organization has 36, 43, and 50 secondary databases in Years 1, 2, and 3, respectively. These include testing, user acceptance testing (UAT), development, disaster recovery, high-availability, and pre-production databases.

- Each secondary database contains 10 TB of data.



- With the investment in Era, the composite organization reduces its copy data management space requirements by 60%.

Risks. Forrester recognizes that these results may not be representative of all experiences and the benefit will vary between organizations depending on the size of database estate, actual copy data management efficiencies driven by era, and actual storage costs per TB.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $4.3 million.

Backup Recovery And Copy Data Management Storage Savings: Calculation Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Number of production databases	Composite: +1 annual growth	6	7	8
B2	TB per database	Composite	10	10	10
B3	Frequency of full backups	Once per week * 52 weeks	52	52	52
B4	Number of TB required in legacy environment for backup storage	B1*B2*B3	3,120	3,640	4,160
B5	Reduction in backup storage requirements	Interviews	60%	60%	60%
B6	TB avoided using Era	B4*B5	1,872	2,184	2,496
B7	Cost per TB of storage	Composite	$800	$800	$800
B8	Subtotal: Backup recovery savings	B6*B7	$1,497,600	$1,747,200	$1,996,800
B9	Number of secondary databases	Composite	36	43	50
B10	Reduction in storage requirements for secondary databases	Interviews	60%	60%	60%
B11	Subtotal: Copy data management savings	B9*B2*B10*B7	$172,800	$206,400	$240,000
Bt	Backup recovery and copy data management storage savings	B8+B11	$1,670,400	$1,953,600	$2,236,800
	Risk adjustment	↓10%			
Btr	Backup recovery and copy data management storage savings (risk-adjusted)		$1,503,360	$1,758,240	$2,013,120
	Three-year total: $5,274,720			**Three-year present value: $4,332,269**	

REDUCED OFF-HOURS MAINTENANCE SAVINGS

Customers noted that complexities in their legacy environments and high volumes of cloning and provisioning often led DBAs to work outside of business hours to meet SLAs and business needs. Customers experienced the following with Era:

- **Less need for DBA overtime.** DBA teams were able to accomplish their work more efficiently using Era automation. The database architect noted that her team typically performed 100 off-hours of work each month, and it expected to decrease that requirement by 50%. She also noted that the DBA team members appreciated having more control over the entire environment, their schedules, and the work they perform.

> **"We typically performed refresh requirements over the weekends. So the whole team had to work over the weekend 30% of the time. But we are not seeing that need anymore. That overtime is gone."**
>
> *Database team lead, aviation management*

Avoided off-hours maintenance hours over three years
1,500 hours

Modeling and assumptions. To capture the benefit realized by the interviewed organizations, Forrester assumes the following about the composite organization:

- In the legacy environment, the database teams performed 100 hours per month of off-hours maintenance.
- With the investment in Era, the simplified management of the database estate drives a 25% decrease in off-hours work in Year 1. In Years 2 and 3, the composite reduces off-hours work by 50%.
- The annual burdened cost of a DBA is $150,000, but off-hours work is considered overtime, and the hourly rate is 1.5x or $108.

Risks. Forrester recognizes that these results may not be representative of all experiences and the benefit will vary between organizations depending on how much overtime was required in the legacy environment, the company culture, and the burdened cost of resources.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $119,000.

Reduced Off-Hours Maintenance Savings: Calculation Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Off-hours maintenance hours before Era	Interviews: 100 hours per month	1,200	1,200	1,200
C2	Reduction in off hours maintenance	Interviews	25%	50%	50%
C3	Off-hours maintenance avoided with Era	C1*C2	300	600	600
C4	Hourly burdened overtime cost of DBA (rounded)	$150,000/2,080 hours*1.5 (time and a half rate)	$108	$108	$108
Ct	Reduced off-hours maintenance savings	C3*C4	$32,400	$64,800	$64,800
	Risk adjustment	↓10%			
Ctr	Reduced off-hours maintenance savings (risk-adjusted)		$29,160	$58,320	$58,320
	Three-year total: $145,800		**Three-year present value: $118,524**		

LICENSE CONSOLIDATION OF SECONDARY ENVIRONMENTS

In the legacy environment, customers incurred costs for specialized tool sets, support costs, and extra database and server licenses. Environment owners clung to their databases, and thereby licenses, even though actual utilization of those licenses was low.

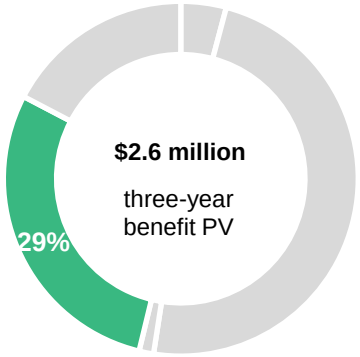
- **Reduced third-party license costs.** With Era, customers were able to reduce their reliance on vendor-specific tool sets and skills, and they avoided licensing costs for inefficiently used databases. When the management of resources became more cloudlike, customers had the same productivity using a fewer number of licenses. The database and application operations manager estimated savings in the region of $40,000 per avoided license.

Modeling and assumptions. To capture the benefit realized by the interviewed organizations, Forrester assumes the following about the composite organization:

- It has 44, 51, and 59 primary and secondary databases managed by Era in its database estate in Years 1,2, and 3, respectively.
- By avoiding licensing these databases individually in the legacy environment, the licensing and operations and maintenance costs avoided for each is $35,000.
- Forrester assigns only 65% of this benefit to Era, as there are several reasons that a customer may retire licenses or choose not to retire legacy licenses.

Risks. Forrester recognizes that these results may not be representative of all experiences and the benefit will vary between organizations. Consider existing license sprawl, reliance on specialized management tools, and the potential for consolidation.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $2.6 million.



License Consolidation Of Secondary Environments: Calculation Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	Number of databases (primary and secondary)	Composite	44	51	59
D2	Per database licensing and O&M costs	Interviews	$35,000	$35,000	$35,000
D3	Attribution to Nutanix	Assumption	65%	65%	65%
Dt	License consolidation of secondary environments	D1*D2*D3	$1,001,000	$1,160,250	$1,342,250
	Risk adjustment	↓10%			
Dtr	License consolidation of secondary environments (risk-adjusted)		$900,900	$1,044,225	$1,208,025
	Three-year total: $3,153,150		**Three-year present value: $2,589,603**		

REDUCED DOWNTIME-AVOIDED LOSSES

A key challenge that customers faced in their legacy environments was patching inefficiencies and costly downtime. The database architect shared: "Previously, we didn't have the ability to patch in a timely fashion. So, the lifecycle management and automation that's available through Era was very appealing. It gives us the ability to quickly identify what has been patched and what hasn't. We can single-click patch and do mass patching through scripting."

- **Reduced downtime for patching.** The manager of database administration described the situation for his organization: "Each application tolerated maybe 4 to 5 hours of downtime within that week, which we have to run applications running their mission-critical. So, it's very impactful."

> **"We're under a lot of pressure to immediately apply patches when they are released quarterly. Seventy percent of all of our databases need to get patched right away, and with Era, it's all automated."**
>
> *Database architect, aerospace and defense*

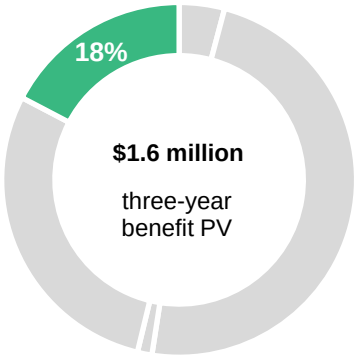
Modeling and assumptions. To capture the benefit realized by the interviewed organizations, Forrester assumes the following about the composite organization:

- It patches applications every other month or six times a year.
- In the prior environment, each patching event required 4 hours of planned downtime.
- After the Era investment, the organization manages patching events from a central location, allowing patches to be conducted in 30 minutes.
- Planned downtime results in $35,000 per hour in losses that include productivity, revenue loss, and downstream impact.

Avoided hourly losses
$35,000

Risks. Forrester recognizes that these results may not be representative of all experiences and the benefit will vary between organizations depending on the impact severity caused by downtime. Unplanned downtime is not included in this calculation, but if it was, the benefit could be significantly higher. There is publicly available research that cites the financial impact of a single hour of downtime to be in the millions of dollars.

To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $1.6 million.



Reduced Downtime-Avoided Losses: Calculation Table					
Ref.	**Metric**	**Calculation**	**Year 1**	**Year 2**	**Year 3**
E1	Frequency of patch applications	Interviews	6	6	6
E2	Hours of downtime before Era per patch application	Interviews	4	4	4
E3	Hours of downtime with Era per patch application	Interviews	0.5	0.5	0.5
E4	Avoided downtime (hours) per patch application	E2-E3	3.5	3.5	3.5
E5	Financial impact per hour of downtime	Composite	$35,000	$35,000	$35,000
Et	Reduced downtime avoided losses	E1*E4*E5	$735,000	$735,000	$735,000
	Risk adjustment	↓15%			
Etr	Reduced downtime-avoided losses (risk-adjusted)		$624,750	$624,750	$624,750
	Three-year total: $1,874,250			**Three-year present value: $1,553,661**	

UNQUANTIFIED BENEFITS

In addition to the five benefits quantified above, there are additional benefits that could not be quantified for this study but are nonetheless considered measurements of success for the Nutanix investment. They include:

- **The Nutanix team provided exemplary service.** Customers emphasized that a technology investment requires ongoing support from the vendor, and that level of support was a key reason they chose Era. The database architect said: "We evaluated the support that Nutanix provides — the level, the quality, the speed — whether it's for an issue or future functionality or continuous improvements in its product. The level of commitment and attention to detail was amazing. I've yet to come up with something to request of the Nutanix team that they haven't already started working on."

> **"The Nutanix support teams are always helpful whenever and wherever we need the help. They are really responsive."**
>
> *Database team lead, aviation management*

- **Era included out-of-the-box best practices to simplify managing a complex environment.** The customers ran their databases on a wide variety of legacy software and hardware technologies, creating complexities and databases that were like comparing apples to oranges. Managing this landscape was complex, and no best practice fits all flavors of a database. But with Era, the holistic best practices ease some of the difficulties.

> **"The Nutanix people are database experts, and they bake in best practices. We wasted six months building databases without best practices. Now we are redoing work that could have been avoided if we'd used Era from the beginning. But with Nutanix, it's great to have the right knowledge and the right tool to get deployed correctly with best practices from the get-go."**
>
> *Database architect, aerospace and defense*

- **An avoided legacy hardware and software refresh saved millions.** Customers evaluated costs and implementation efforts when considering Nutanix versus a legacy hardware and software refresh.

> **"If we had chosen to refresh our same equipment, the cost [would have been] in the range of a million dollars over the cost of the Nutanix solution."**
>
> *Manager of database administration, travel*

- **Improved employee experience and made it easier to attract and retain young people.** The database architect said the technology makes it easier for her organization to attract and retain young technologists because "the future database environment will be point-and-click." She also told Forrester how Era is helping to impact the employee experience, noting that DBAs are happier working in Nutanix because the system is friendlier to use. Arming the workforce with the right tools and technologies can impact employee engagement, reduce

burnout and turnover, and improve customer experience (CX).

"Era helps reduce the wear and tear on the DBAs, specifically by not having to work weekends. So, that really helps with keeping someone in the job and attracting young people into these fields."

Database architect, aerospace and defense

FLEXIBILTY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Nutanix Era and later realize additional uses and business opportunities. These include:

- **Exploring other Nutanix platform offerings.** Nutanix is an enterprise cloud platform, and it offers hyperconverged infrastructure (HCI) software, cloud services, and software-defined storage. Any of these product families can be combined to suit company needs and work well together as a suite of technology products. Customers may realize vendor management efficiencies by using a single vendor to cover several business areas.
- **Freeing DBAs to focus of strategic projects has the potential to drive huge benefits.** With the automation that Era provides, DBAs can use their availability to up-level their skillsets and personal development, work on strategic pursuits, and focus on forward-looking projects like planning improvements and even revenue-generating activities. The potential for these previously unrealistic pursuits may drive significant impact.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

Analysis Of Costs

Quantified cost data as applied to the composite

Total Costs							
Ref.	**Cost**	**Initial**	**Year 1**	**Year 2**	**Year 3**	**Total**	**Present Value**
Ftr	Implementation and training	$153,919	$0	$0	$0	$153,919	$153,919
Gtr	Nutanix Era licensing	$0	$572,000	$660,000	$770,000	$2,002,000	$1,643,967
Htr	Ongoing management	$0	$198,000	$198,000	$198,000	$594,000	$492,397
	Total costs (risk-adjusted)	$153,919	$770,000	$858,000	$968,000	$2,749,919	$2,290,283

IMPLEMENTATION AND TRAINING

The interviewed customers were able to implement Era quite quickly. They cited implementation timelines ranging from one week to three months. A cluster administrator, database administrator, and Nutanix-provided engineer typically performed the implementations.

Nutanix provided training to five to seven resources, including DBAs, administrators, and cluster administrators. The trainees shadowed the Nutanix engineers during implementation and then used the environment as a training module.

> **"The Era implementation was pretty straightforward. I don't think it took more than a few weeks to get up and running. We had Nutanix engineers who were designated to help support us through the implementation phase, which helped streamline the process. Nutanix added training value because my team learned directly from the experts."**
>
> *Manager of database administration, travel*

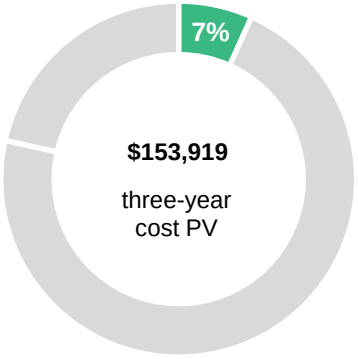
Modeling and assumptions. To capture the experiences of the interviewed organizations, Forrester makes the following assumptions about the composite organization:

- It previously purchased and installed Nutanix hyperconverged infrastructure.
- The Nutanix Era implementation is conducted over three months.
- Five internal resources are involved with the implementation, dedicating approximately 75% of their time to implementation activities. These resources include two database administrators, two administrators, and one cluster administrator.
- The weighted average monthly cost of the resources noted above is $11,250.
- Training is provided to seven resources over the course of two days.
- The hourly cost of a resource is $65.

Risks. Forrester recognizes that these results may not be representative of all experiences and the cost will vary between organizations depending on system requirements, necessary integrations, security requirements, and the ability to dedicate internal resources to the implementation. Organizations may

incur additional costs for training materials or periphery training-related costs.

To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $154,000.



Implementation And Training: Calculation Table

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Months spent on implementation	Interviews	3			
F2	Internal resources (e.g., DBA, Nutanix administrator, cluster administrator) dedicated to implementation	Interviews	5			
F3	Average percent of time spent on implementation	Composite	75%			
F4	Average burdened monthly cost of resources (showing rounded value)	$135,000/12 months	$11,250			
F5	Subtotal: Implementation	F1*F2*F3*F4	$126,563			
F6	Number of resources receiving training	Interviews	7			
F7	Number of hours of training	2-day training sessions	16			
F8	Average burdened hourly cost of resources (showing rounded value)	$135,000/2,080 hours	$65			
F9	Subtotal: Training	F6*F7*F8	$7,280			
Ft	Implementation and training	F5+F9	$133,843	$0	$0	$0
	Risk adjustment	↑15%				
Ftr	Implementation and training (risk-adjusted)		$153,919	$0	$0	$0
	Three-year total: $153,919		**Three-year present value: $153,919**			

NUTANIX ERA LICENSING

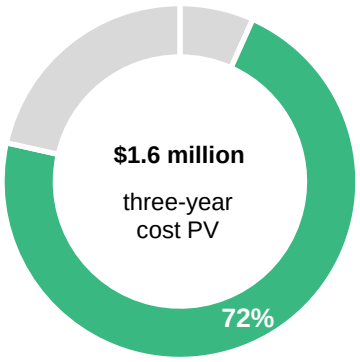
Era has a subscription term-based software license that is based on the concept of managed database server vCPUs. This licensing is a consumption-based model that allows customers to license only the database servers that will Nutanix Era will manage.

Modeling and assumptions. Based on the costs the interviewed organizations incurred, Forrester makes the following assumptions about the composite organization:

- It uses Era to manage 440 TB of data in Year 1. Licensed cores increase each year with increased data needs.
- The cost per core used is $2,500.

Risks. Licensing costs will vary widely by organization, and the best way to estimate licensing costs is to speak directly with a Nutanix representative. Prospective customers should consider the vCPU needs of their organization when estimating the costs of Nutanix licensing. They should also consider the existing hardware and Nutanix software that may already be utilized within the technology stack.

To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $1.6 million.



Nutanix Era Licensing: Calculation Table

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
G1	Number of cores licensed	Composite		208	240	280
G2	Cost per core	Nutanix		$2,500	$2,500	$2,500
Gt	Nutanix Era licensing	G1*G2	$0	$520,000	$600,000	$700,000
	Risk adjustment	↑10%				
Gtr	Nutanix Era licensing (risk-adjusted)		$0	$572,000	$660,000	$770,000
	Three-year total: $2,002,000			**Three-year present value: $1,643,967**		

ONGOING MANAGEMENT

Customers said one to two DBAs are involved with the ongoing management of the Nutanix Era investment. In addition to the DBA resource, customers assigned a partial Nutanix administrator to template building and post-provisioning.

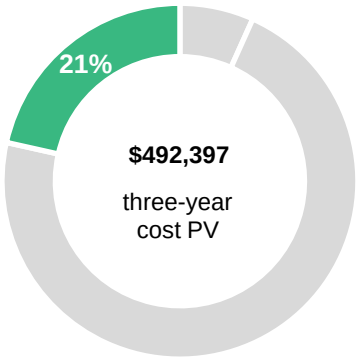
1 DBA and **.25** administrator responsible for ongoing management

Modeling and assumptions. To capture the experiences of the interviewed organizations, Forrester makes the following assumptions about the composite organization:

- The time of one DBA FTE is dedicated to ongoing management. The annual burdened cost of a DBA is $150,000.
- A Nutanix administrator is also considered in the ongoing costs of the Era investment. Only 25% of the administrator's time is spent working on Era.
- The burdened cost of a Nutanix administrator is $120,000.

Risks. The number of administrators and DBAs and the amount of time they dedicate to maintaining the Era environment will vary by organizational needs and existing skill sets. Consider the market rate and burdened costs of resources assigned to these tasks.

To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $0.5 million.



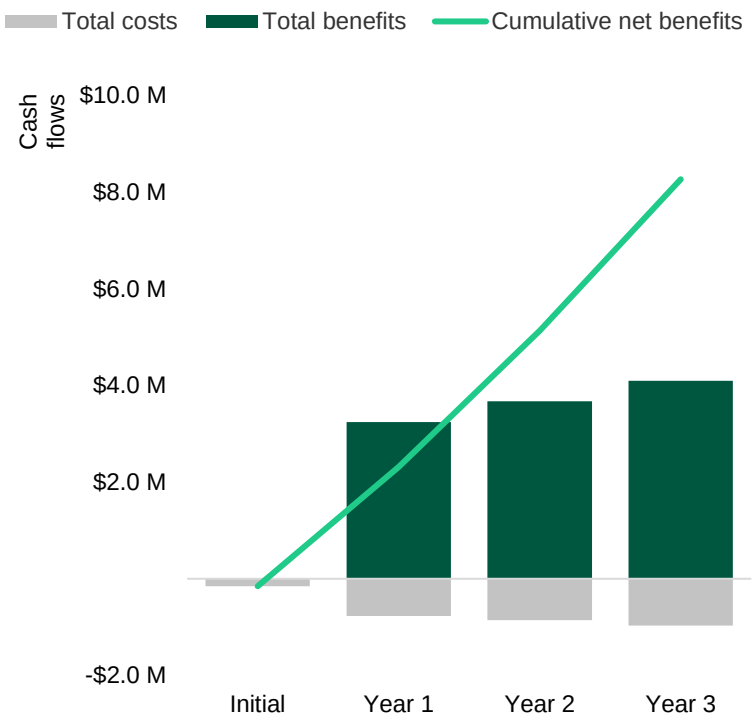
Ongoing Management: Calculation Table

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
H1	Dedicated DBA FTE	Interviews		1.00	1.00	1.00
H2	Burdened annual cost of DBA	Composite		$150,000	$150,000	$150,000
H3	Nutanix administrator FTE	Interviews		0.25	0.25	0.25
H4	Burdened annual cost of Nutanix administrator	Composite		$120,000	$120,000	$120,000
Ht	Ongoing management	H1*H2+H3*H4	$0	$180,000	$180,000	$180,000
	Risk adjustment	↑10%				
Htr	Ongoing management (risk-adjusted)		$0	$198,000	$198,000	$198,000
	Three-year total: $594,000			**Three-year present value: $492,397**		

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



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

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

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	($153,919)	($770,000)	($858,000)	($968,000)	($2,749,919)	($2,290,283)
Total benefits	$0	$3,207,348	$3,634,713	$4,053,393	$10,895,455	$8,965,041
Net benefits	($153,919)	$2,437,348	$2,776,713	$3,085,393	$8,145,536	$6,674,758
ROI						291%
Payback period (months)						<6 months

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists 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."

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.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