

FORRESTER®

The Total Economic Impact™ Of Redis Enterprise

Cost Savings And Business Benefits
Enabled By Redis Enterprise

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ABOUT FORRESTER CONSULTING

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Executive Summary

The digital economy calls for ultra-fast, real-time data processing to provide the speed and reliability required to meet customer needs. Redis Enterprise provides a scalable, NoSQL, in-memory data platform that keeps pace with these demands at a lower cost basis than other in-memory databases. It does so with better performance, higher uptime, and more flexibility, while also providing innovations via its open source community and deep technical expertise via its customer support team.

[Redis Enterprise](#) is a NoSQL, in-memory database deployable across cloud, on-premises, multicloud, and hybrid environments and is built on top of open source Redis. It powers a wide variety of use cases where large volumes of data require highly available, ultra-low latency analysis for customers. In this study, use cases included a range of financial technology, e-commerce, data science, and machine learning applications, each with burgeoning data growth and business demands that pushed the limits of mission-critical solutions.

Redis commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Redis Enterprise.¹ The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Redis Enterprise on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed six customers with experience using Redis Enterprise. 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 Redis Enterprise, customers had implemented various SQL and NoSQL legacy databases in attempts to modernize their data-based workflows. However, customers relayed experiencing significant shortfalls in those solutions' ability to grow

KEY STATISTICS



Return on investment (ROI)
350%



Net present value (NPV)
\$4.12M

flexibly with demand, resulting in excessive costs when expanding these frameworks. Additionally, they experienced slower-than-expected performance and poor reliability, leading to lost revenue, missed product development opportunities, and impeded customer growth.

With the improved scalability of Redis Enterprise, interviewees avoided costs related to expanding their databases for both new and existing projects. Interviewees also improved their income by more quickly taking advantage of new business opportunities while recouping revenue previously lost to poor database performance. Lastly, compared to their prior databases, customers saved on IT and DevOps labor costs with Redis Enterprise.

Total benefits present value:

\$5.3 million



KEY FINDINGS

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

- **Savings in new projects, competitor transitions, and relational database conversions worth \$1.8 million over three years.** The interviewees noted that projects on Redis Enterprise were easier and less costly to expand across their application infrastructure when compared with their SQL and NoSQL legacy databases. These decision-makers noted that, on a net basis, both new and existing projects were 23% less costly in terms of licensing than with prior databases, while growing Redis Enterprise was 75% less costly operationally than growing with relational databases.

“In the world of online transactions, speed is of utmost importance. We need to quickly approve transactions while avoiding potentially billions of dollars of fraud — simultaneously. This was not possible previously, but we’re doing it now thanks to Redis Enterprise.”

Senior director, AI engineering, payment systems provider

- **Income from accelerated time-to-market enabled by Redis Enterprise speed and availability totaling \$1.6 million.** Due to improved scaling, the interviewees’ organizations were freed from prior data-handling and process-time limits. As a result, new products could be

developed and new markets entered at a faster rate, improving the time-to-value of these business expansions. One customer shared: “Redis Enterprise has been a very strong platform for us, as we don’t have to worry about scalability anymore. We can add any country or market we want and not worry about performance.”

“We are creating low-latency apps that support the mission, but they are also increasing storage demand. So Redis Enterprise’s architecture is not only fundamentally important to our ability to handle data at speed but also to our ability to grow at scale.”

Senior director, AI engineering, payment systems provider

- **Avoided SLA penalties and recouped income from improved performance worth \$952,000.** Redis Enterprise also did away with previous systems’ limitations when handling simultaneous data requests. The improved database performance resulted in avoided downtime, improved customer logins, consistently maintained session states, and more completed transactions. Overall, this better database performance helped the interviewees avoid service-level agreement (SLA) penalties while also recouping income that would otherwise be lost to downtime and latency. As the senior director from a payments system provider shared: “With Redis Enterprise, we ensure lower downtime and lower latency compared to our

previous solution. As a result, we're seeing less abandoned purchases and, therefore, better revenues."

- **Improved efficiency of IT and DevOps workstreams valued at \$949,000.** Redis Enterprise enabled interviewees' organizations to move away from full on-premises deployments and take advantage of hybrid cloud deployments instead, reducing IT labor costs. Redis Enterprise automations also made DevOps practices related to product development more efficient. The senior director from a payment systems provider said: "Deployment is streamlined, from architecture to design to implementation. We can deploy twice as fast now because we've added automation tools to launch the virtual machines that run operations."

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

- **Improved agility for technology to respond to business needs.** Customers noted that Redis Enterprise lowered the barriers to innovation and developing new functionalities. Modules in particular helped organizations to launch AI and machine-learning based functionality without the need to fully develop these extensions in-house.
- **Improved internal innovation by aligning process with Redis.** Interviewees noted that the speed of Redis' innovations in releasing new products benefited their own product development innovation. By aligning their internal processes and release schedule with Redis Enterprise's, customers improved their internal innovation speed and, as a result, bettered their customer relationships.
- **Flexibility organizing and scaling teams.** Interviewees shared that Redis Enterprise enabled their development teams to organize workflows in new ways to improve efficiency, even as the teams' work grew. By breaking down

larger workflows into smaller pieces and mingling once-disparate teams, interviewee organizations more efficiently integrated DevOps into their development practices.

- **Redis support.** Interviewees noted that Redis support provided additional unquantified value, helping teams with any production issues they had. Additionally, customers shared that Redis customer support services helped them further save on costs partnering with them to strategize the scaling of their environments.

Costs. Risk-adjusted PV costs include:

- **Costs of Redis Enterprise totaling \$1.2 million.** Customers deployed Redis Enterprise to replace their SQL and NoSQL legacy databases. These customers reported a net reduction in costs when comparing their prior environments with their Redis Enterprise deployment. Cost growth over time reflects the acceleration of in-memory storage demand created by the commercial success experienced after implementing Redis Enterprise.

The decision-maker interviews and financial analysis found that a composite organization experiences benefits of \$5.30 million over three years versus costs of \$1.18 million, adding up to a net present value (NPV) of \$4.12 million and an ROI of 350%.



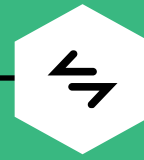
ROI
350%



BENEFITS PV
\$5.30M



NPV
\$4.12M



PAYBACK
<6 months

Benefits (Three-Year)



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 Redis Enterprise.

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 Redis Enterprise can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Redis 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 Redis Enterprise.

Redis 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.

Redis provided the customer names for the interviews but did not participate in the interviews.



DUE DILIGENCE

Interviewed Redis stakeholders and Forrester analysts to gather data relative to Redis Enterprise.



DECISION-MAKER INTERVIEWS

Interviewed six decision-makers at organizations using Redis Enterprise to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewees' 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 decision-makers.



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 Redis Enterprise Customer Journey

Drivers leading to Redis Enterprise investment

Interviewed Decision-Makers

Interviewee	Industry	Region	Revenue
Senior director, AI engineering	Payment systems provider	North America	\$20 billion
Senior manager, engineering	Financial services technology	North America	\$15 billion
Senior engineer	Consumer financial services	North America	\$600 million
SVP engineering	Global identity verification	North America	\$30 million
Product owner, app caching	Computer technology	North America	\$90 billion
Senior database administrator	Global travel	Europe	\$18 billion

KEY CHALLENGES

Before investing in Redis Enterprise, the interviewees used a variety of SQL and NoSQL legacy databases that suffered performance issues and lacked the scalability needed to meet business demand. Some interviewees' organizations attempted to solve these issues by leveraging open source solutions, but these lacked the necessary enterprise-grade resiliency and customer support. The interviewees' organizations struggled with common challenges in their prior environments, including:

- **System latency and poor availability for demand spikes.** Existing SQL and NoSQL legacy solutions failed to maintain data for sessions' states and transactions when demand was high. This caused the interviewees' organizations to be penalized for unmet SLAs, while also losing customers and missing growth opportunities in new markets. One interviewee noted: "Our growth in e-commerce fueled tremendous spikes in demand. Plus, we've entered new markets. Our old setup would slow past 500,000 requests per second, creating unacceptable delays for our customers and costing us revenues."

"It takes a lot of bandwidth and capacity to set up a relational database and have it function in a session-state capacity. Before switching to Redis Enterprise, our databases were getting overrun and customer logins would frequently fail."

*Senior manager, engineering,
financial services technology*

- **High costs to expand database infrastructure.** Existing SQL and NoSQL legacy database frameworks could not expand as efficiently or effectively, leading to higher costs. Compared to Redis Enterprise, prior solutions required longer lead times to implement while incurring higher internal resource costs to complete the work and manage the database infrastructure on an ongoing basis. One interviewee shared, "At this

point, we wanted to pursue the best option to migrate away from relational databases to the NoSQL standard.”

“We found relational database expansions were not going to be cost-effective compared to Redis’ cache. The reality is that it takes much less capacity to do the same thing in Redis Enterprise.”

Senior manager, engineering, financial services technology

- **Inefficient and costly DevOps processes.** Interviewees also noted that their DevOps processes were less efficient than they otherwise could have been. For these customers, previous data platforms were inflexible and required manual development and production work. These

customers looked to Redis Enterprise to help automate more of this work.

INVESTMENT OBJECTIVES

The interviewees’ organizations searched for a solution that was:

- **Readily scalable to handle data growth and use case expansion.** Interviewees’ organizations needed an efficient, scalable database architecture to accommodate customer growth and the development of ultra-fast applications. One customer stated: “We previously had a lot of challenges to scale up our memory computing infrastructure. We needed something that could easy scale and launch to a billion users on Day One.”
- **Able to accommodate backup and production automations.** As one customer stated: “A number of things drew us to Redis Enterprise. Its speed and stability work like nothing else. Another is our ease of programming to it, which enables automations and efficiencies in our DevOps that were not possible previously.”

“Our customers tripled in the past year, and with Redis Enterprise we can now accommodate millions of simultaneous requests.”

— Senior director, payment systems provider

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 six decision-makers 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 company represented in this study is a fast-growing digital financial services firm, requiring vast amounts of customer information to be readily available for processing, fast identity lookups, and maintaining session states. It seeks a solution that permits simultaneous online purchase approvals and fraud detection, as well as enabling new app development and deployment to support both web and mobile interactions.
- **Deployment characteristics.** The composite chooses to deploy Redis Enterprise both on-premises and in a hybrid cloud architecture. It needs to accommodate rapid growth in memory storage exceeding 1 TB annually. It relies on an in-memory database to run operations and employs Redis on Flash to help defray storage costs and maintain less active memory more economically.

Key assumptions

- **Financial services industry**
- **Hitting memory storage limits**
- **Millions of simultaneous requests**
- **Need for minimal downtime**
- **DevOps automations to speed app modernization**

“Data replication with its active-active technology is conflict-free and basically automatic. Having moved from an active-passive relational database format, Redis Enterprise is going to be the mainstay of our organization.”

Senior manager, engineering, financial services technology

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Savings in new projects, competitor transitions, and relational database conversions	\$289,800	\$751,685	\$1,184,558	\$2,226,042	\$1,774,657
Btr	Income from accelerated time-to-market enabled by Redis' speed and stability	\$187,500	\$562,500	\$1,312,500	\$2,062,500	\$1,621,431
Ctr	Avoided SLA penalties and recouped income from improved performance	\$292,500	\$380,250	\$494,325	\$1,167,075	\$951,559
Dtr	Improved efficiency of IT and DevOps workstreams	\$381,600	\$381,600	\$381,600	\$1,144,800	\$948,983
	Total benefits (risk-adjusted)	\$1,151,400	\$2,076,035	\$3,372,983	\$6,600,417	\$5,296,630

SAVINGS IN NEW PROJECTS, COMPETITOR TRANSITIONS, AND RELATIONAL DATABASE CONVERSIONS

Evidence and data. Redis Enterprise enabled the interviewees' organizations to expand persistent in-memory data to meet business demands more efficiently than their SQL and NoSQL legacy databases had. Interviewees noted experiencing licensing cost savings by moving away from these more expensive solutions. They also avoided the costs of growing these relational databases to meet the size and speed required by more modern applications. These benefits expanded over time as the demonstrated capabilities of Redis Enterprise attracted more projects, generating greater savings and avoided costs.

One interviewed decision-maker noted: "We now go across the entire breadth of financial transactions, from mobile to ATMs, on Redis Enterprise. It gives our business units the fast performance they demand and the stability they need."

Modeling and assumptions. For the composite organization, Forrester estimates:

- Cost savings accrue beginning with the first Redis Enterprise implementation due to its greater efficiency and lower cost.
- Additional savings accrue from retiring relational databases and migrating to Redis Enterprise from existing solutions to meet their application infrastructure and speed requirements.
- The number of new projects and legacy technology retirements grows from Year 1 to Year 3 of the model.

Risks. The savings with vary with:

- The number of new Redis Enterprise projects.
- The number of legacy solutions and databases retired in favor of Redis Enterprise.

Results. To account for these risks, Forrester adjusted this benefit downward 10% yielding a three-year, risk-adjusted total PV of \$1.8 million.

Savings In New Projects, Competitor Transitions, And Relational Database Conversions					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	New project savings compared to competitor cost	Composite	\$113,750	\$222,950	\$321,750
A2	Savings on competitor project by transitioning to Redis	Composite	\$68,250	\$200,655	\$334,425
A3	Savings by converting to Redis vs. cost of ramped-up relational database	Composite	\$140,000	\$411,600	\$660,000
At	Savings in new projects, competitor transitions, and relational database conversions	A1+A2+A3	\$322,000	\$835,205	\$1,316,175
	Risk adjustment	↓10%			
Atr	Savings in new projects, competitor transitions, and relational database conversions (risk-adjusted)		\$289,800	\$751,685	\$1,184,558
Three-year total: \$2,226,042			Three-year present value: \$1,774,657		

INCOME FROM ACCELERATED TIME-TO-MARKET ENABLED BY REDIS' SPEED AND AVAILABILITY

Evidence and data. The interviewees noted that Redis Enterprise enabled their organizations to expand their databases not only at a lower cost than previously but also at a faster rate. This enabled them to take advantage of business opportunities before it was too late, improving their revenues as a result.

Before investing in Redis Enterprise, the interviewees' organizations faced limitations in cache speed and memory storage size, as well as higher costs to expand existing solutions. These shortcomings caused the organizations either to move too slowly to take advantage of new business and revenue opportunities or to incur excessive costs to expand in time to pursue them.

After deploying Redis Enterprise, organizations freed themselves from scale, speed, and cost limitations, expanding their businesses with new product launches, market entries, and other revenue opportunities. Additionally, Redis Enterprise's faster speed and higher availability drove its deployment across additional business lines, which then launched new projects and enabled new revenues, all in a virtuous cycle.

The senior director at the payment systems provider noted: "Previously, our product rollouts were limited by the amount of in-memory data our prior database solutions could handle. With Redis Enterprise, this is no longer a gating factor for us. We can launch billion-dollar products on day one."

Modeling and assumptions. For the composite organization, Forrester assumes new projects enabled by Redis Enterprise generate revenues of \$2.5 million in Year 1, growing to \$12.5 million by Year 3.

Risks. The improved revenue for new projects enabled by Redis Enterprise speed and availability may vary with:

- A slower rate of new product development.
- A slower rate of new-customer acquisition driving memory storage demand.

Results. To account for these risks, Forrester adjusted this benefit downward by 25%, yielding a three-year, risk-adjusted total PV of \$1.6 million.

Income From Accelerated Time-To-Market Enabled By Redis' Speed And Stability					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Incremental revenue by taking offerings to market faster due to Redis' speed and stability thresholds	Composite	\$2,500,000	\$7,500,000	\$17,500,000
B2	Net margin	Composite	10%	10%	10%
Bt	Income from accelerated time-to-market enabled by Redis' speed and stability	B1*B2	\$250,000	\$750,000	\$1,750,000
	Risk adjustment	↓25%			
Btr	Income from accelerated time-to-market enabled by Redis' speed and stability (risk-adjusted)		\$187,500	\$562,500	\$1,312,500
Three-year total: \$2,062,500			Three-year present value: \$1,621,431		

AVOIDED SLA PENALTIES AND RECOUPED INCOME FROM IMPROVED PERFORMANCE

Evidence and data. The interviewees shared that the fast speed and high availability of Redis Enterprise translated into avoided SLA penalties and improved income, driven by better-performing customer-facing applications. Prior to Redis Enterprise, customers experienced system downtime. In addition, during peak demand the previous database applications faced performance slowdowns that affected logins, session states, and transaction completion.

After investing in Redis Enterprise, system downtime was reduced to minutes annually due to speedy geo-replication that helped to avoid outages. Furthermore, the ability of Redis Enterprise to reduce memory and database latency to less than 1 millisecond meant that system slowdowns no longer affected customers' experiences, even while handling millions of requests simultaneously.

The senior vice president engineering at the global identity verification firm stated: "Going international and the growth in our e-commerce business combined to fuel tremendous spikes in demand. Our old setup would slow past 500,000 requests per second, creating unacceptable delays for our customers. With Redis Enterprise, now we don't have an upper ceiling. We can go to multimillion requests

per second without a problem." Another executive added: "The machine learning enabled by Redis Enterprise emulates the decision-making patterns of our partners when deciding to decline or approve transactions. It engages when their IT systems encounter issues, creating income we would otherwise miss."

Modeling and assumptions. For the composite organization, Forrester assumes that 10% of prior delayed transactions and failed session states resulted in lost revenues.

Risks. The reduction in penalties and lost revenue will vary with:

- The number and cost of SLA penalties experienced before Redis Enterprise.
- The amount of lost revenue due to prior database performance issues.
- Future customer growth following Redis Enterprise.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$952,000.

Avoided SLA Penalties And Recouped Income From Improved Performance					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Cost of penalties associated with not meeting SLAs	Composite	\$200,000	\$260,000	\$338,000
C2	Improved revenue retention from improved latency	Composite	\$1,250,000	\$1,625,000	\$2,112,500
C3	Net margin	Composite	10%	10%	10%
C4	Net gain from reduced lost revenue with existing applications due to latency issues	C2*C3	\$125,000	\$162,500	\$211,250
Ct	Avoided SLA penalties and recouped income from improved performance	C1+C4	\$325,000	\$422,500	\$549,250
	Risk adjustment	↓10%			
Ctr	Avoided SLA penalties and recouped income from improved performance (risk-adjusted)		\$292,500	\$380,250	\$494,325
Three-year total: \$1,167,075			Three-year present value: \$951,559		

IMPROVED EFFICIENCY OF IT AND DEVOPS WORKSTREAMS

Evidence and data. Redis Enterprise enabled efficiencies in both the IT department and DevOps practices. These efficiencies allowed IT and DevOps resources to be redeployed to more valuable tasks throughout the interviewees’ organizations.

Redis Enterprise helped the interviewed customers move away from all on-premises deployments and leverage a mixed on-premises and hybrid cloud model. As cloud-based infrastructure was easier to manage, interviewees’ IT departments experienced significant time savings managing database infrastructure. In addition, Redis Enterprise helped automation implementations that reduced the manual work associated with their organizations’ DevOps practices.

Redis Enterprise features modules, which are prebuilt extensions that can implement new Redis commands without the related development work. Modules enabled the organizations’ developers to save time that they would otherwise spend building extensions from scratch. The senior manager from the financial services technology company shared: “Redis helps

us deploy automation as well as leverage modules. These save substantial developer time, allowing us to dedicate roles to other workloads and create additional value.”

Modeling and assumptions. For the composite organization, Forrester estimates:

- The need for two IT administrators was avoided by shifting to a hybrid cloud Redis Enterprise environment.
- The need for two DevOps resources was avoided utilizing Redis Enterprise automations rather than building these processes internally.

Risks. The reduction in IT costs will vary with:

- The extent to which on-premises operations are shifted to the cloud.
- The number of DevOps processes and automations saving developer time.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$949,000.

Improved Efficiency Of IT And DevOps Workstreams					
Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Number of IT administrators refocused via Redis enabled implementation and administration	Composite	2	2	2
D2	Average burdened annual salary of IT administrator FTE	Payscale.com	\$92,000	\$92,000	\$92,000
D3	Number of DevOps staff refocused via Redis modules	Composite	2	2	2
D4	Average fully burdened annual salary of IT DevOps FTE	Payscale.com	\$120,000	\$120,000	\$120,000
Dt	Improved efficiency of IT and DevOps workstreams	$(D1 * D2) + (D3 * D4)$	\$424,000	\$424,000	\$424,000
	Risk adjustment	↓10%			
Dtr	Improved efficiency of IT and DevOps workstreams (risk-adjusted)		\$381,600	\$381,600	\$381,600
Three-year total: \$1,144,800			Three-year present value: \$948,983		

UNQUANTIFIED BENEFITS

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

- Efficient launch of new functionalities enabled by Redis.** Customers noted that Redis Enterprise lowered barriers to develop their own innovations and functionalities. Modules allow Redis Enterprise to be efficiently extended with additional capabilities without the need for intensive development. One customer shared: “Redis Enterprise provides us the flexibility to launch new AI and machine learning functionalities from data structures that we would have to build from scratch if using other computing frameworks.”
- Improved internal innovation by aligning process with Redis.** Interviewees noted that the speed of Redis’ innovations in subsequent releases also drove their product development and success with customers. The senior manager at a financial services technology firm noted: “Redis’ innovations have propelled us to onboard processes and improvements that track with their versions. It’s been critical to our

maturation as a financial technology business with the stability, security, maintenance, and support to deliver better products more quickly.”

- Redis support.** Interviewees noted Redis’ customer support services as a key benefit over strictly open source solutions. For example, one customer shared: “Aside from the scalability, Redis Enterprise provides support to address any issues in production. It’s another efficiency and a top reason for using it over open source.” The senior director at a payment systems provider noted, “Redis’ engineers also present a lot of good ideas in how to structure the data in Redis Enterprise to save on how we ramp up capex investment compared to our previous database.”

FLEXIBILITY

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

- Flexibility organizing and scaling teams.** Interviewees noted that implementing Redis Enterprise enabled them to implement new modes of working that improved their product

development efficiency. The senior engineer at the consumer financial services firm added:

“Redis Enterprise lets us look at our strategies and workflow flexibly as we scale up. We have dozens of applications in development, and we can now break our work into smaller pieces and integrate DevOps into all our practices to get it done efficiently.”

- **Lower costs from the open source community.** Customers also noted the innovations made possible through the larger Redis open source community that created synergies in product development and efficiencies in deployment. One interviewee stated: “Now we have far lower costs, and we can embark on a whole new set of innovations that take advantage of the Redis open source community.”

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
Etr	Cost associated with Redis implementation	\$57,750	\$192,500	\$471,625	\$736,725	\$1,458,600	\$1,176,035
	Total costs (risk-adjusted)	\$57,750	\$192,500	\$471,625	\$736,725	\$1,458,600	\$1,176,035

COST ASSOCIATED WITH REDIS IMPLEMENTATION

Evidence and data. Customers noted experiencing reduced costs with Redis Enterprise when compared to their SQL and NoSQL legacy databases. Interviewees noted that they were paying 30% more for their prior solutions compared to their Redis Enterprise implementations.

Modeling and assumptions. For the financial model, Forrester estimates:

- Caching terabyte loads expanded from 1 TB in Year 1 to 5 TB by Year 3.

- New project expansions, new applications, and customer growth underpin this significant expansion of demand.
- Terabyte volume and rate of growth drive memory storage costs.

Risks. The risks of this cost basis include:

- The rate of new customer acquisition.
- The rate of new app deployment.

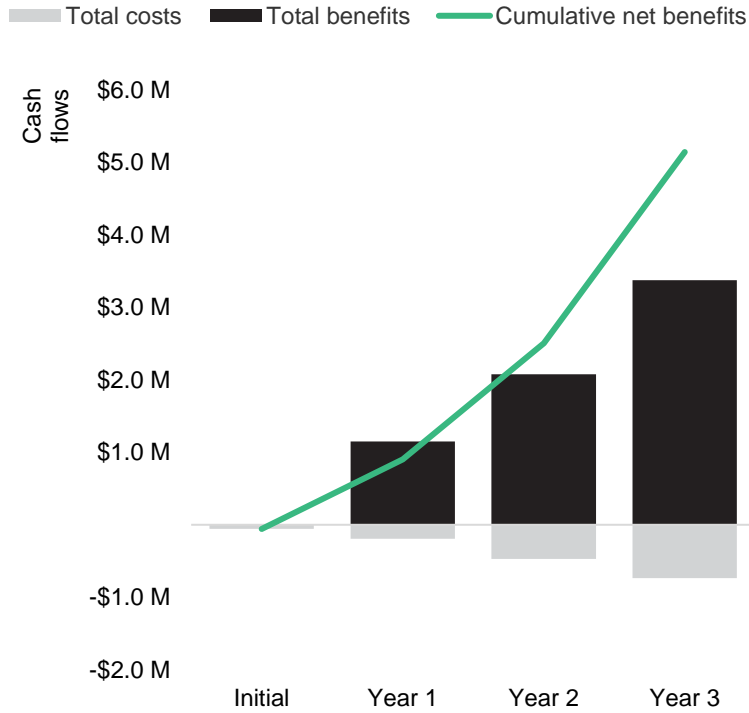
Results. To account for these risks, Forrester adjusted this cost upward by 10%%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$1.2 million.

Cost Associated With Redis Implementation						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Redis cost — new project	Composite		\$87,500	\$171,500	\$247,500
E2	Redis cost — replace competitive project implementation	Composite		\$52,500	\$154,350	\$257,250
E3	Redis cost — expanded relational database solution	Composite		\$35,000	\$102,900	\$165,000
Et	Cost associated with Redis implementation	E1+E2+E3	\$52,500	\$175,000	\$428,750	\$669,750
	Risk adjustment	↑10%				
Etr	Cost associated with Redis implementation (risk-adjusted)		\$57,750	\$192,500	\$471,625	\$736,725
Three-year total: \$1,458,600			Three-year present value: \$1,176,035			

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	(\$57,750)	(\$192,500)	(\$471,625)	(\$736,725)	(\$1,458,600)	(\$1,176,035)
Total benefits	\$0	\$1,151,400	\$2,076,035	\$3,372,983	\$6,600,417	\$5,296,630
Net benefits	(\$57,750)	\$958,900	\$1,604,410	\$2,636,258	\$5,141,817	\$4,120,595
ROI						350%
Payback (months)						<6

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: Endnotes

1 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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