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The Total Economic Impact™ Of Boost.ai's Conversational AI Platform

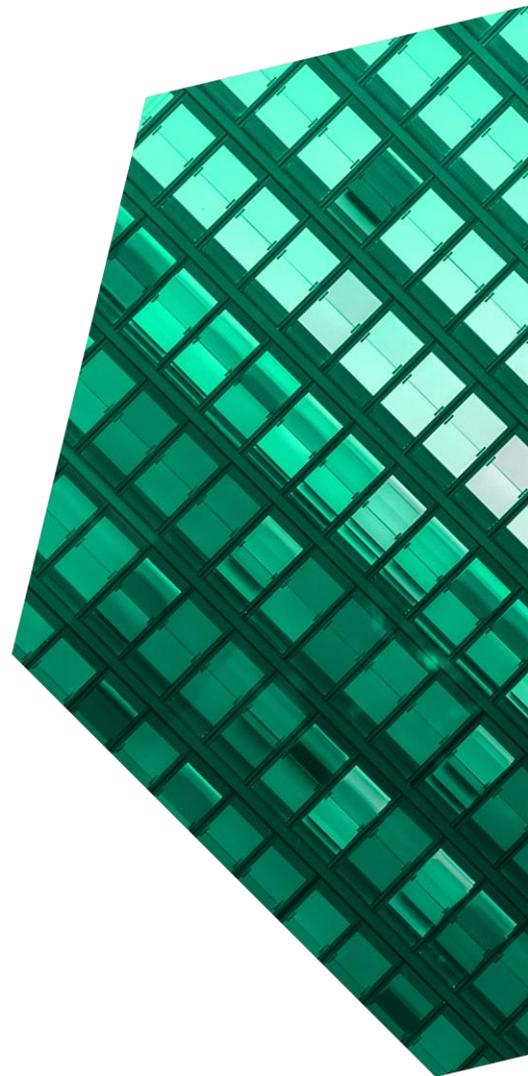
Cost Savings And Business Benefits Enabled By
The Boost.ai Conversational AI Platform

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ABOUT FORRESTER CONSULTING

Forrester provides independent and objective research-based consulting to help leaders deliver key transformation outcomes. Fueled by our customer-obsessed research, Forrester's seasoned consultants partner with leaders to execute on their priorities using a unique engagement model that tailors to diverse needs and ensures lasting impact. For more information, visit forrester.com/consulting.

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Executive Summary

To streamline interactions with customers, many organizations turn to virtual agents to handle routine incoming inquiries. Boost.ai provides scalable conversational AI that helps organizations redirect customer service experts toward more value-added tasks. This study learned that the Boost.ai conversational AI platform helped the representative organization reduce customer service operations cost and increase income while simultaneously improving customer and employee satisfaction.

Boost.ai provides a [conversational AI platform](#) that helps clients automate interactions at scale. The platform enables clients to manage virtual agents and design and train these agents to address routine customer inquiries while using artificial intelligence (AI) to analyze conversation data and automate responses. With the help of human AI trainers, the platform learns to address inquiries of increasing complexity, thus enabling organizations to use human customer service representatives more strategically over time.

Boost.ai commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study¹ and examine the potential return on investment (ROI) enterprises may realize by deploying the Boost.ai conversational AI platform. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of the Boost.ai conversational AI platform on their organizations.

Incoming inquiries handled by virtual agents

70%



KEY STATISTICS



Return on investment (ROI)
293%



Net present value (NPV)
\$19.90M

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed two representatives of an organization that has experience using the Boost.ai conversational AI platform. Forrester used this experience to project a three-year financial analysis.

Prior to using the Boost.ai conversational AI platform, the interviewees noted how their organization struggled to keep up with increasing inquiries coming into their customer service centers as their business grew. However, prior attempts yielded limited success, leaving them with long lead times to respond to customers' inquiries. These limitations resulted in low customer and employee satisfaction, slowing the organization's growth and profitability.

After the investment in the Boost.ai conversational AI platform, the interviewees' organization improved response times, interaction volumes, and response accuracy, freeing up customer service employees for more value-added tasks. Key results from the

investment include full-time equivalent (FTE) reassignment cost savings, income uplift from cross-selling and upselling opportunities, improved customer satisfaction, and proactive communication with customers.

KEY FINDINGS

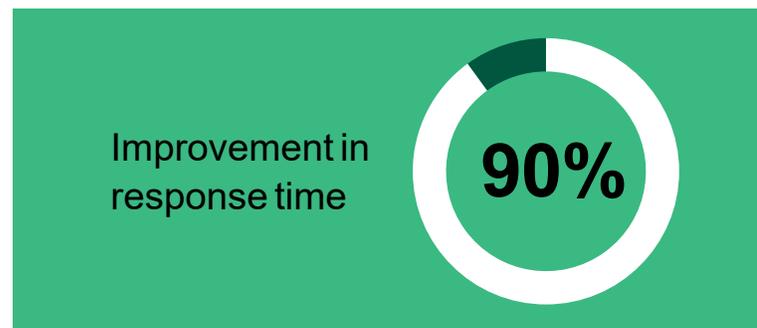
Quantified benefits. Three-year, risk-adjusted present value (PV) quantified benefits include:

- **FTE reassignment savings of more than \$15.7 million.** The Boost.ai conversational AI platform handles about 70% of all incoming inquiries into the customer service center. This has reduced the need for humans to handle these inquiries, resulting in the reassignment of 100 FTEs in Year 1. Over three years, using technology to address routine inquiries is worth more than \$15.7 million to the interviewees' organization.
- **Income uplift of more than \$10.9 million.** FTEs reassigned from servicing routine inquiries are retrained and redirected to cross-selling and upselling tasks. This has led to improved revenue growth and an income uplift of over \$10.9 million.

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

- **Improved work quality.** The multilevel intent hierarchy of the platform enables accurate responses to inquiries. The Boost.ai conversational AI platform helped the organization design complex conversation flows with context, filters, and action triggers.
- **Proactive communication.** The interviewees' organization can now reach out to customers more easily as inquiries are resolved faster. The virtual agents and self-learning AI analyze conversation data for areas of improvement or expansion.
- **Communication automation with 24/7 availability.** Virtual agents are available around the clock to answer routine inquiries.

- **Improved resolution rates.** The platform comes with virtual agents equipped to automate thousands of industry-specific inquiries.
- **Improved response time.** Virtual agents equipped with precise responses to thousands of commonly seen inquiries speeds up response time. Only complex inquiries are transferred to humans, leaving room for more rapid response time.



- **Improved customer satisfaction.** Fast, accurate, and consistent performance by the virtual agents has resulted in increased customer satisfaction.

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

- **Boost.ai conversational AI platform cost.** This covers the subscription cost for the platform. It also includes variable costs relative to the number of virtual agents operating and individual chats processed annually on the platform.
- **Internal operations cost.** This covers internal costs incurred by the representative organization. It includes the costs for operating the platform, such as AI trainers' salaries, and any other special projects not included in the platform subscription cost.

The interview and financial analysis found that the representative organization experiences benefits of \$26.68 million over three years versus costs of \$6.78 million, adding up to a net present value (NPV) of \$19.90 million and an ROI of 293%.



ROI
293%



BENEFITS PV
\$26.68M



NPV
\$19.90M



PAYBACK
<12 months

Benefits (Three-Year)

FTE reassignment savings

\$15.7M

Income uplift

\$10.9M

“With Boost.ai we are able to automate a lot of the inquiries coming in, and we have been able to improve the quality of service to our customers.”

— Head of innovation, financial services

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interview, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in a Boost.ai conversational AI platform.

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 the Boost.ai conversational AI platform can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Boost.ai 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 a Boost.ai conversational AI platform.

Boost.ai 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.

Boost.ai provided the customer names for the interviews but did not participate in the interview.



DUE DILIGENCE

Interviewed Boost.ai stakeholders and Forrester analysts to gather data relative to the Boost.ai conversational AI platform.



INTERVIEW

Interviewed the representatives of an organization using the Boost.ai conversational AI platform to obtain data with respect to costs, benefits, and risks.



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 interviewees.



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 Boost.ai Conversational AI Platform Customer Journey

■ Drivers leading to the Boost.ai conversational AI platform investment

INTERVIEWEES' ORGANIZATION

Forrester interviewed two representatives of an organization that has experience using the Boost.ai conversational AI platform. Their organization has the following characteristics:

- A national financial services institution.
- \$100 billion in assets.
- \$3 billion in annual revenue.
- 1.8 million private and business customers.
- 6,500 employees.
- Operates five virtual agents within the conversational AI platform.
- Services 3 million chats in Year 1, growing at 10% annually.

KEY CHALLENGES

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

- **Increasing number of inquiries coming into the customer service department.** As the institution grew, customers and accounts also did. This increased the number of inquiries that were coming into the customer service center.
- **Long lead times responding to inquiries and reduced customer and employee satisfaction.** Customer service center employees couldn't keep up with inquiry volumes. This resulted in longer lead times to respond or diminishing customer service and poor job satisfaction for employees.
- **Employee turnover from burnout.** Inquiry volumes and long response lead times led to frustrated customers. Servicing these customers became more challenging, reducing employee morale and increasing burnout and turnover.

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

The interviewees' organization searched for a solution that could:

- Automate routine inquiries coming into the customer service centers.
- Provide a configurable out-of-the-box solution that minimizes the amount of customization required by the organization.
- Easily scale to address increasing inquiry volumes.
- Learn and address inquiries with diverse complexity.

After a request for proposal (RFP) and business case process evaluating multiple vendors, the interviewees' organization chose the Boost.ai conversational AI platform and began deployment:

- They chose to take a phased approach to deployment. Initially, they spent three months onboarding and teaching AI trainers how to operate and refine the platform with responses to routine inquiries.
- During these initial three months, they trained customer service employees on cross-selling and upselling so that they could be reassigned to these more value-added tasks as the platform transitioned into production.
- In Year 1, they launched five virtual agents on the platform, replacing 100 FTEs from customer service centers.
- By Year 2 and Year 3, the AI trainers will update the virtual agents to be able to address more complex inquiries, leading to the reassignment of an additional 25 FTEs in both Year 2 and Year 3.

USE CASE DESCRIPTION

The Boost.ai conversational AI platform addressed most of the key challenges faced by the interviewees' organization. The platform came equipped with virtual agents configured to address routine customer inquiries within the industry. In the first year, these virtual agents were handling over 70% of incoming online inquiries. The platform also helped reduce wait times for responses. This organization reassigned employees to other value-added tasks, resulting in cost savings and revenue uplift among other benefits that were not quantified in this study. The deployment of the Boost.ai conversational AI platform resulted in a reduction of cost per conversation. At the cost of \$6,781,000 over 3 years, the organization supported 9.93 million chats resulting in a cost per conversation of \$0.68

For this use case, Forrester has modeled benefits and costs over three years.

Key Assumptions

- **Five virtual agents deployed**
- **3 million chats serviced yearly with 10% annual growth**
- **\$2.4 million yearly spend for the Boost.ai conversational AI platform with 10% annual growth**
- **\$0.25 cost per chat**

“Boost.ai is very important to our strategy because we want to create solutions which are easy for the customer to use. Instead of sitting in a phone queue or a chat queue, they’re able to get responses very early and very quick.”

Head of innovation, financial services

Analysis Of Benefits

■ Quantified benefit data

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	FTE reassignment savings	\$5,130,000	\$6,412,500	\$7,695,000	\$19,237,500	\$15,744,591
Btr	Income uplift	\$3,562,500	\$4,453,125	\$5,343,750	\$13,359,375	\$10,933,743
	Total benefits (risk-adjusted)	\$8,692,500	\$10,865,625	\$13,038,750	\$32,596,875	\$26,678,334

FTE REASSIGNMENT SAVINGS

Evidence and data. Before deploying the Boost.ai conversational AI platform, employees of the interviewees' organization manually addressed customers' inquiries. Customers facing challenges on the organization's website either had to wait in queues for live chat or call on the phone to get in another queue to talk to a human.

- The head of innovation at this organization explained: "The overall chat solution has become much more responsive, and we're able to give the customer an answer much faster. In the old days, they needed to phone in or sit in a chat line to wait. Today, you're able to get an answer almost instantly from the virtual agent."
- He went on to explain the savings witnessed from reassigning employees to other value-added tasks. He said, "When it comes to impact, the solution from Boost.ai is doing the work of 150 employees."

Modeling and assumptions. To model this benefit, Forrester looks at two key factors: the number of employees reassigned and the annual burdened pay rate per employee.

- Forrester uses the baseline of employees reassigned as indicated by the interviewees. Forrester models growth by 25% in Year 1 and 20% in Year 2 to account for the training of the virtual agents toward handling more-complex inquiries.
- Forrester assumes an average annual burdened pay rate for employees in financial industry customer service centers.

Risks. Differences in organizations will impact the realization of this benefit. Factors include:

- The volume of inquiries coming into the organization from customers.
- The skillset of customer services employees who work in the centers.
- Average annual pay of the employees.
- Diversity of languages used by customers.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$15,745,000.

FTE Reassignment Savings					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Number of FTEs reassigned from customer service tasks	Interviews	100	125	150
A2	Annual burdened FTE pay rate	Interviews	\$54,000	\$54,000	\$54,000
At	FTE reassignment savings	A1*A2	\$5,400,000	\$6,750,000	\$8,100,000
	Risk adjustment	↓5%			
Atr	FTE reassignment savings (risk-adjusted)		\$5,130,000	\$6,412,500	\$7,695,000
Three-year total: \$19,237,500			Three-year present value: \$15,744,591		

INCOME UPLIFT FROM INCREMENTAL REVENUE

Evidence and data. The interviewees told Forrester that the deployment of the Boost.ai conversational AI platform freed up employees to perform other duties. The organization saw an increase in revenue because of the redirecting of human resources.

- The head of innovation explained, “Boost.ai is handling all the redundant inquiries from customers, so the people — our customer service employees — can use that time to fix some real problems, things that are actually fun for them, such as more sales.”
- A senior subject advisor elaborated on how reassigning humans helped with revenue growth: “With the virtual agents taking care of 70% of the inquiries, humans are now trained for customer service and cross-selling for loans, insurance, as well as banking.”

Modeling and assumptions. Forrester models this benefit by using three key factors: the baseline number of employees reassigned, average revenue generated annually, and an income uplift margin.

- Forrester assumes that employees displaced by the Boost.ai conversational AI platform are trained and reassigned to revenue generating functions within the customer service centers.

- Forrester assumes an average annual revenue generation from cross-selling and upselling comparable to the financial services industry.
- Forrester applies a productivity adjustment factor of 50% to account for inefficiencies as employees change job functions.
- Forrester assumes an income margin of 3% for new deposits generated annually by reassigned employees.

Risks. The realization of this benefit will differ for each organization, depending on the following factors.

- The ability of reassigned employees to learn new skills and excel at and stay with the new roles.
- The breadth of products that reassigned employees can cross-sell or upsell.
- The present penetration of products already owned by customers reaching out with inquiries into the customer service centers.
- The value of products available for cross-sell and upsell.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of \$10,934,000.

Income Uplift From Incremental Revenue					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	FTEs reassigned to cross-selling and upselling opportunities	Interviews	100	125	150
B2	Annual deposits generated per FTE	Assumption	\$2,500,000	\$2,500,000	\$2,500,000
B3	Income margin	Assumption	3%	3%	3%
B4	Incremental income	B1*B2*B3	7,500,000	9,375,000	11,250,000
B5	Productivity adjustment factor	Forrester	50%	50%	50%
Bt	Income uplift	B4*B5	\$3,750,000	\$4,687,500	\$5,625,000
	Risk adjustment	↓5%			
Btr	Income uplift (risk-adjusted)		\$3,562,500	\$4,453,125	\$5,343,750
Three-year total: \$13,359,375			Three-year present value: \$10,933,743		

UNQUANTIFIED BENEFITS

The interviewees mentioned the following additional benefits that their organization experienced but could not quantify:

- Improved work quality.** Virtual agents automate responses to inquiries using a multilevel intent hierarchy to ensure accurate answers to inquiries. The Boost.ai conversational AI platform has helped the organization design complex conversation flows with context, filters, and action triggers. The head of innovation at the representative organization said: “The quality of work for our employees has increased because they don’t have to answer the same questions repeatedly. Those are handled by the virtual agents, so they get improved work quality.”
- Proactive communication.** The interviewees’ organization can now anticipate issues and reach out to customers more easily. Self-learning AI analyzes conversation data for areas of improvement or expansion, giving room for proactive communication. A senior subject

advisor said: “We now have the possibility to communicate with the customer proactively on our web page with the chat living there. We can use the virtual agent to speak with the customer when we want and if the customer wants to.”

- Communication automation with 24/7 availability.** The interviewees explained that it is a major benefit being able to respond to customers any time of the day. Virtual agents are available around the clock to answer routine inquiries and then escalate to humans or redirect the customers. The head of innovation said: “Before Boost.ai, we were not able to be present 24/7, 365 days a year. But today, we’re able to do that without having to increase the number of people who work here.”
- Improved resolution rates.** The platform comes with virtual agents equipped to automate thousands of industry-specific inquiries. The virtual agents address most inquiries quickly, with only 30% escalated to humans. The head of innovation explained: “Our solution is quite easy

on being transferred to a human. Nevertheless, only about 30% of inquiries are being transferred all the way to humans. So, I would say the virtual agent actually handles about 70% of all the inquiries.”

- **Improved response time.** Interviewees told Forrester that customers don't have to wait in queues any longer. Once a virtual agent is engaged, it responds immediately. Virtual agents are equipped with precise responses to thousands of commonly seen inquiries, speeding up response time, and only complex inquiries are transferred to humans. A senior subject advisor explained: “The average response time was about 7 minutes for a call and about 4 minutes for the manual chat. Now customers get an instantaneous response.”
- **Improved customer satisfaction.** The interviewees explained that many factors contribute to overall customer satisfaction. They couldn't quantify the impact of the Boost.ai conversational AI platform on customer satisfaction, but the head of innovation said: “Resolution rates have impacted customer satisfaction but it's important that the resolution is the correct one. When virtual agents are able to solve the question quickly, but also correctly, that impacts customer satisfaction positively.” The senior subject advisor elaborated: “I definitely think there is some contribution, but I don't think Boost.ai is the only contributor. There are other parameters that impact customer satisfaction. But when it comes to customer service, there's definitely improvement. But if you're talking about the overall, I'd say, maybe it makes about 5% or 10% of the the improvement in customer satisfaction.”

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement the Boost.ai conversational AI

platform and later realize additional uses and business opportunities, including:

- **Automating phone calls with voice bots.** Organizations can deploy similar algorithms for virtual agents to address inquiries coming through phone calls. Although interviewees are aware of this technology in the Boost.ai offering, they're not using it yet.
- **Integrating virtual agents into other systems in organizations.** Organizations can use the Boost.ai conversational AI platform to integrate with other messaging applications, thereby helping customers find information through the forums they most prefer.

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
Ctr	Boost.ai conversational AI platform cost	\$110,000	\$1,650,000	\$1,815,000	\$1,996,500	\$5,571,500	\$4,610,000
Dtr	Internal operations cost	\$185,220	\$740,880	\$802,620	\$864,360	\$2,593,080	\$2,171,476
	Total costs (risk-adjusted)	\$295,220	\$2,390,880	\$2,617,620	\$2,860,860	\$8,164,580	\$6,781,476

BOOST.AI CONVERSATIONAL AI PLATFORM COST

Evidence and data. Boost.ai provided a platform cost layout for this study. Even though it may vary, depending on the needs of each customer, it comprises the following features:

- A fixed subscription cost. This includes a strategic customer service manager (CSM), premium support, and a test server.
- A variable conversation fee. This is charged per interactive session on the platform.
- A bot fee. This is charged per virtual agent operating on the platform.

Modeling and assumptions. Forrester models this cost from the use case of the interviewees' organization:

- Forrester assumes a one-time POC (proof of concept) cost before launch.
- The organization operates five virtual agents on the platform.

- They average 3 million chats in Year 1 and grow by 10% after that.
- Platform costs grow by 10% annually to account for new integrations, new features being developed, and the funneling of more-complex conversations.

Risks. This cost will vary for each organization depending on factors such as:

- Number of inquiries coming in from customers.
- The complexity of the inquiries.
- The variety of inquiries and the number of unique virtual agents will be needed to support them.

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 \$4,610,000.

Boost.ai Conversational AI Platform Cost						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
C1	POC cost, inclusive of planning, testing, validation, etc.	Interviews	\$100,000			
C2	Platform fee per year	Boost.ai		\$750,000	\$825,000	\$907,500
C3	Number of chats per year	Boost.ai		3,000,000	3,300,000	3,630,000
C4	Cost per chat	Boost.ai		\$0.25	\$0.25	\$0.25
Ct	Boost.ai platform cost	C1+C2+(C3*C4)	\$100,000	\$1,500,000	\$1,650,000	\$1,815,000
	Risk adjustment	↑10%				
Ctr	Boost.ai platform cost (risk-adjusted)		\$110,000	\$1,650,000	\$1,815,000	\$1,996,500
Three-year total: \$5,571,500			Three-year present value: \$4,610,000			

INTERNAL OPERATIONS COST

Evidence and data. The interviewees told Forrester that operating the Boost.ai conversational AI platform requires these internal resources:

- AI trainers to watch and train the virtual agents on addressing progressively complex inquiries.
- Special projects like scaling or introducing virtual agents for new inquiry subsets.

Modeling and assumptions. Forrester models this cost by using:

- The baseline number of FTEs employed at the interviewees’ organization to run the Boost.ai conversational AI platform.
- The average amount of time spent on AI training tasks compared to customer service tasks as stated by the interviewees.
- The average pay rate for employees performing these tasks at the organization.

Risks. This cost will vary between organizations depending on the following factors:

- The complexity of inquiries coming into the customer service centers.

- The skill set of AI trainers in each organization.
- The pay rate for AI trainers in each organization.
- The ease of outsourcing this function to low-cost locations.

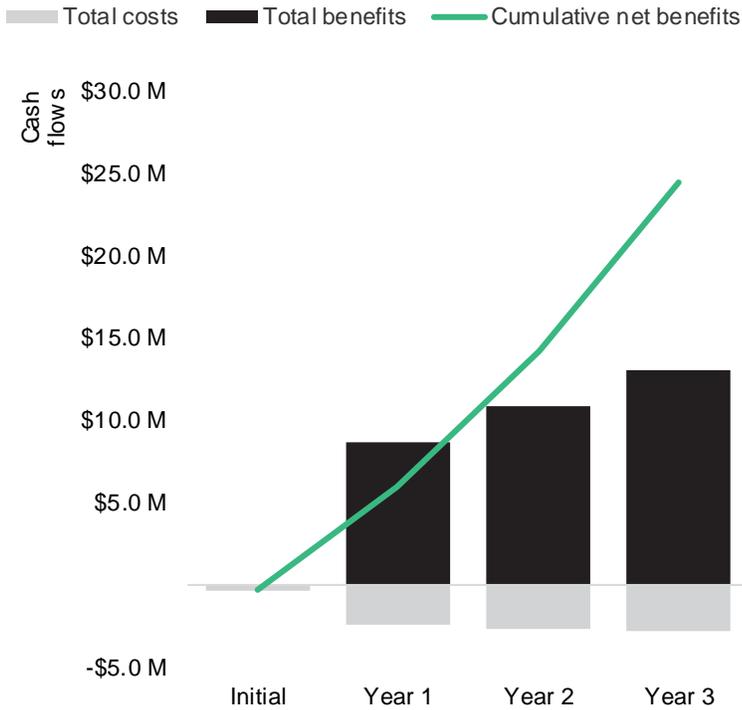
Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of \$2,171,000.

Internal Operations Cost						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
D1	Number of AI trainers employed per period	Interviews	12	12	13	14
D2	Period of time covered (in years)	Interviews	0.25	1	1	1
D3	Percentage of time used for AI training tasks	Interviews	60%	60%	60%	60%
D4	Average burdened pay rate per year	Interviews	\$98,000	\$98,000	\$98,000	\$98,000
Dt	Internal operations cost	$D1 * D2 * D3 * D4$	\$176,400	\$705,600	\$764,400	\$823,200
	Risk adjustment	↑5%				
Dtr	Internal operations cost (risk-adjusted)		\$185,220	\$740,880	\$802,620	\$864,360
Three-year total: \$2,593,080			Three-year present value: \$2,171,476			

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	(\$295,220)	(\$2,390,880)	(\$2,617,620)	(\$2,860,860)	(\$8,164,580)	(\$6,781,476)
Total benefits	\$0	\$8,692,500	\$10,865,625	\$13,038,750	\$32,596,875	\$26,678,334
Net benefits	(\$295,220)	\$6,301,620	\$8,248,005	\$10,177,890	\$24,432,295	\$19,896,858
ROI						293%
Payback period						<12 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."

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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