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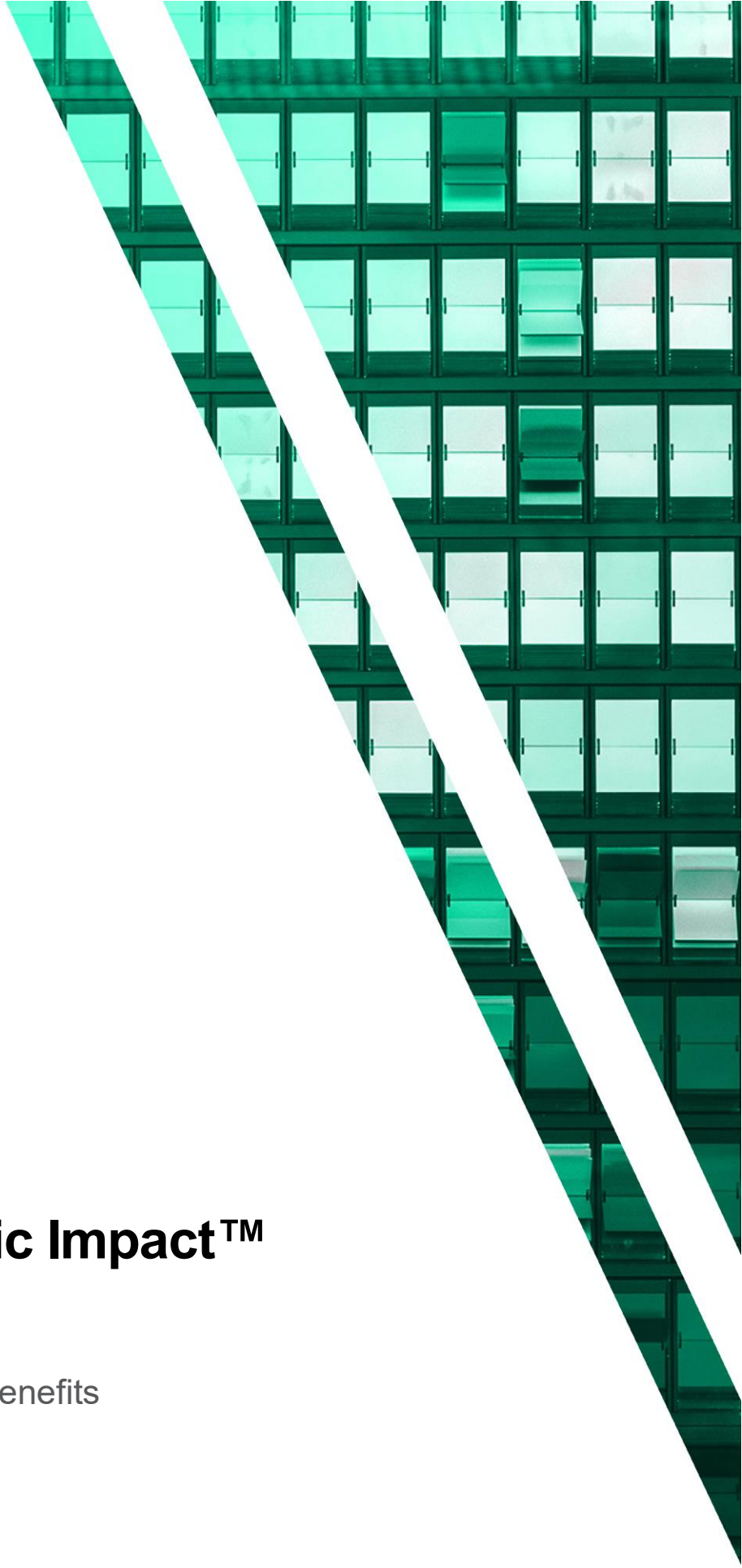

The Total Economic Impact™ Of Cyara

Cost Savings And Business Benefits Enabled By Cyara

MARCH 2023

Table Of Contents

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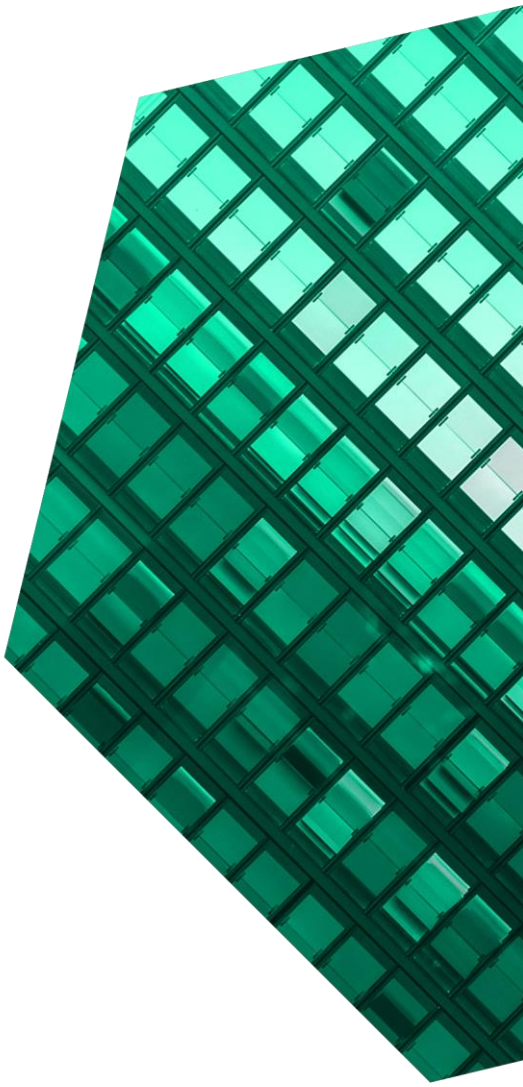

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Executive Summary

Digitizing contact center systems requires significant testing to ensure customers receive flawless experiences. Moving operations to the cloud and the growing deployments of chatbots further adds to the complexity of contact center systems. Organizations must look toward automation to scale testing for interactive voice response (IVR), chatbots, and other services. Cyara delivers automated testing and monitoring of contact center technologies to safeguard customer experiences across voice and digital channels.

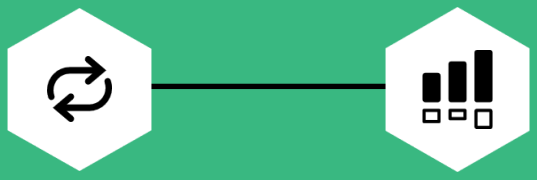
Cyara, a cloud-based customer experience (CX) assurance platform, automates testing and monitoring of contact center technologies through several service lines:

- **Velocity.** This solution automates functional and regression testing of workflows across customer journeys through IVR systems to agents, as well as digital channels.
- **Cruncher.** This solution uses every type of contact center performance testing to validate systems work under peak-volume pressure.
- **Pulse.** This solution automates CX performance monitoring, feeding dashboards and real-time notifications that show where and when issues occur and accelerate troubleshooting and mean time to repair (MTTR).
- **Botium.** This solution automates chatbot and conversational AI testing and monitoring.
- **ResolveAX.** This solution provides real-time monitoring and troubleshooting guidance for resolving technical, connectivity, voice quality, and environmental issues affecting live calls between customers and agents.

Cyara identifies actual and potential issues for contact centers and enables teams to fix them before they grow in complexity and negatively impact the customer experience.

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

KEY STATISTICS



Return on investment (ROI)
334%

Net present value (NPV)
$6.91M

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed six representatives at four organizations around the world with experience using Cyara. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organization that is a company with $10 billion in annual revenue, 20,000 employees, 5,000 call center agents, and 40 million inbound calls each year. While this represents a large-sized organization, benefits in this study are applicable to organizations of various sizes.

Prior to using Cyara, these interviewees noted how their organizations leveraged various testing solutions for their contact center system and still

often ran manual tests on several projects depending on tool and cost limitations. Completing end-to-end tests of contact center solutions was time-consuming, costly, and subject to human error like missing bugs. As a result, the interviewees' companies frequently encountered defects in their contact center technology that could result in poor agent routing and customer self-service, call drops, and even outages.

The frequency of these issues contributed to a deteriorated customer experience. The decision-makers at these companies looked for a solution that could automate testing and monitoring processes for a wide range of contact center channels to alleviate bandwidth constraints. They also hoped to work with a solution that aided in the development of chatbots for their contact center.

After investing in Cyara, interviewees' organizations significantly increased the testing of their IVR and other contact center systems and improved the identification and resolution of errors. This change resulted in greater containment, which meant more calls where customers satisfied their needs without requiring interaction with an agent. It also reduced agent handle times, improved call quality, and reduced the number of dropped calls and outages. Additionally, development and operations teams could spend less time and fewer resources on testing and monitoring. Teams also ramped up development of chatbots through automated testing.

KEY FINDINGS

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

- **Increased call containment by 10% and reduced handle time by 15%.** Increased testing of IVR systems enables the composite to expand development of self-service assistance to support more customers, while also improving containment with workflows effectively helping customers resolve their issues. More automated testing also ensures the composite's IVR agent routing captures customer information more accurately, so when customers speak to call center agents, they are better prepared to support customer requests. For the composite, these improvements result in millions of calls no longer transferred to agents and reduces handle time, ultimately leading to millions of dollars saved.
- **Productivity increase of 90% in IVR development and testing.** Automated testing significantly eases workloads for the composite organization's employees, allowing them to focus more on understanding the cause of errors. More bandwidth gives development teams time to build new IVR workflows and contact center capabilities. Development teams at the composite recoup thousands of hours in time each year.
- **Accelerated chatbot development by 70%.** Cyara's Botium solution makes developing and testing chatbots significantly more efficient for the composite organization's development teams by automating the testing of conversational AI. This helps streamline updates to chatbots as more training data is imported. Nearly 3,000 hours in chatbot testing is saved at the composite organization each year as development increased.
- **Recaptured 90% of abandoned callers.** Since adopting Cyara, instances of abandoned and disconnected calls or calls with poor quality are mitigated. This helps the composite organization limit the risk it faces in losing business from customers affected by poor contact center experiences and helps it retain over a million dollars in revenue each year.

Unquantified benefits. Benefits that provide value for the interviewees' organizations but were not quantified in this study include:

- **Improved customer sentiment toward brands.** Cyara helped ensure a high-quality contact center experience with reliable service, which generated more favorable customer attitudes. In addition, early tests indicated customers would experience reliable support from chatbots.
- **Chatbot support driving greater customer self-service.** While interviewees had quantified positive experiences with developing chatbots, implementation of Cyara Botium was too recent for them to quantify the impact on customer experience. However, based on early results, it appeared that customers experienced more reliable chatbot support and interviewees expanded their use case coverage.
- **Faster time to market for new features and updates.** Time saved on testing was repurposed toward tasks that accelerated the development process, allowing the interviewees' teams to iterate and develop workflows more quickly. This translated to faster releases of updates to contact center technology, further enhancing the customer experience.
- **Avoided contact center outages.** Interviewees recognized the value of proactively avoiding service outages due to Cyara-identified errors that were caught and resolved before any system or customer impact. Although the interviewees could not speak to the severity of the specific issues caught in preproduction, they did recognize the value associated with protecting the customer experience by consistently removing the risk to delivering high-quality customer interactions. Cyara's support ultimately helped organizations to protect brand reputation and, in regulated industries, avoided the risk of compliance penalties. However, since issues that could have caused outages were caught in preproduction, interviewees could not describe the exact value realized from avoiding these outages. Interviewees did recognize that there was significant value in averted outages, helping them avoid significant service disruptions.
- **Support for web, email, and SMS customer service.** Interviewees saw an opportunity to expand their customer service channels with Cyara's support for functional and regression testing through web, email, and SMS channels. Testing customer service quality across these channels further equipped contact centers teams to holistically view performance of all of their CX channels beyond the traditional IVR.

Costs. Three-year, risk-adjusted PV costs for the composite organization include:

- **Subscription and support costs.** The composite organization's annual Cyara licensing costs are based on the solutions (i.e., Velocity, Cruncher, Pulse, Botium, and ResolveAX) leveraged and scale of usage.
- **Implementation and training costs.** A professional service team helps successfully onboard the composite organization, fully train users, and realize value from the solution as early as possible. These services include integrating Cyara with the composite organization's current systems and workflows, and familiarizing users with the full platform.

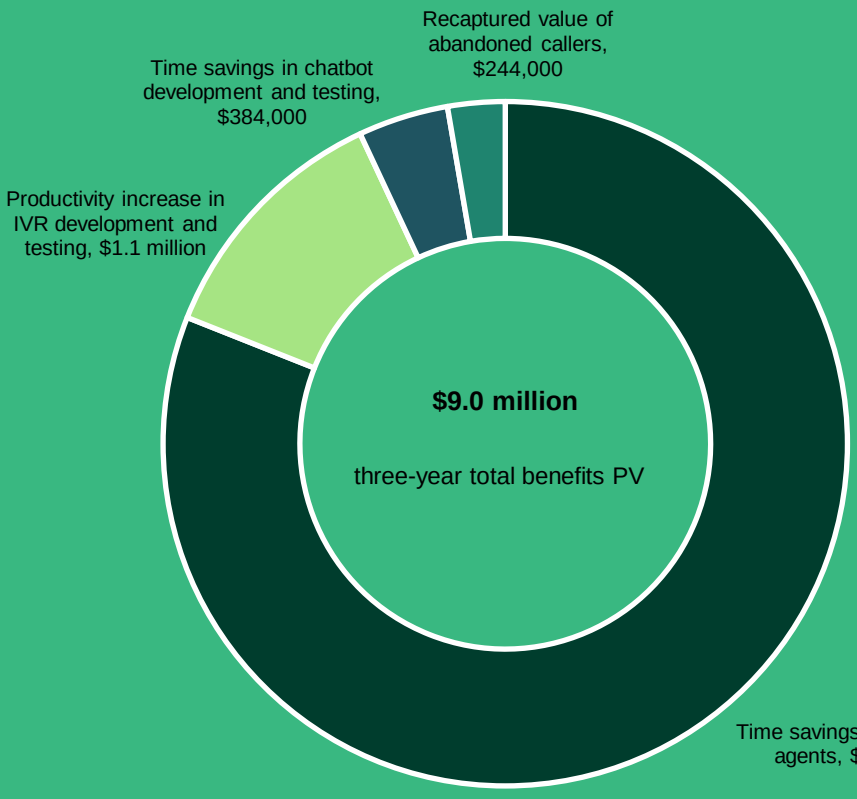
The representative interviews and financial analysis found that a composite organization experiences benefits of $8.98 million over three years versus costs of $2.06 million, adding up to a net present value (NPV) of $6.91 million and an ROI of 334%.

ROI
334%

BENEFITS PV
$8.98M

NPV
$6.91M

PAYBACK
<6 months



Further benefits:

- Improved customer sentiment toward brands
- Better chatbot experiences, driving greater customer self-service and containment
- Faster time to market for new features and updates
- More contact center outages avoided

"Once I met with Cyara, I was blown away by not only their product sweep, but their willingness to partner and help us move into the next phase [of our contact center]."

— Contact center platform manager, healthcare

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 Cyara.

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 Cyara can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Cyara 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 Cyara.

Cyara 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.

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

The Cyara Customer Journey

Drivers leading to the Cyara investment

Interviews			
Role	**Industry**	**Region**	**Number Of Employees**
Director of DevOps and engineering transformation Senior QA Manager	Financial services	Headquartered in NA	<90,000
Contact center platform manager	Healthcare	Headquartered in NA	12,000+
Enterprise architect	Financial services	Headquartered in APAC	<40,000
Project manager, customer service and sales — AI and automation Senior technical engineer	Telecommunications	Headquartered in EMEA	100,000+

KEY CHALLENGES

Prior to investing in Cyara, interviewees' companies did not have a comprehensive testing solution in place for their contact center. Rather, employees worked with a variety of solutions to test peak call volume and a range of contact channels, including IVR workflows, call center agents, and chatbots. Limitations around testing capabilities or prohibitive additional costs for scaling testing led to frequent manual system tests. Prior solutions were also hosted on-prem while the rest of the organizations' operations were moving to the cloud, which slowed operations.

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

- **Frequent appearance of bugs and errors in production.** Manual IVR testing led to testers not catching errors, which threatened to create negative customer experiences. What's more, a lack of a unifying monitoring platform meant teams had to manually track and review test results to identify the root cause of technical errors.

> **"In any IT system there's always an imperfection … it doesn't matter whether it's financial, tech, telco, or government. However, Cyara is enabling us to strive toward a more perfect system."**
>
> *Enterprise architect, financial services*

- **Labor-intensive testing and response to defects.** Even though organizations devoted significant time to testing, coverage of the environment was scattershot due to time and resources available. This allowed issues to creep into production and, by the time developers discovered them, the issues had grown in complexity, reaching and affecting more workflows and impacting the customer experience. In addition, organizations hosted contact centers on-premises, which further slowed the speed with which employees could

remediate errors. Ultimately, manual testing and bug resolution meant developers had less time to focus on building and improving existing voice and digital customer experience systems.

- **Unreliable contact center customer service.** Too often, undetected defects caused customers to be dropped from calls or routed to the wrong call center agents, adding to frequent call transfers as well as experiencing poor call-line quality. These issues created unsatisfactory experiences for customers, which translated into logged complaints, reduced trust, and lowered satisfaction with the services and brand.
- **Lack of bandwidth to support chatbot development.** Interviewees were eager to build out chatbot support to provide an alternative channel for customer engagement. Unfortunately, developer's bandwidth was filled with manual IVR testing. In addition, developers at the interviewees' organizations lacked experience around AI development, which required time to learn. They needed to free developers' bandwidth to learn and develop chatbots or they had to hire additional developers to support chatbot development.

INVESTMENT OBJECTIVES

The interviewees' organizations searched for a solution that could:

- Reduce time spent finding bugs, lower the overall number of errors, and cut costs by reducing MTTR.
- Automate functional and regression testing for IVR and chatbots.
- Support cloud-based operations for a move to cloud-based contact center.
- Improve monitoring of IVR services to track actual and potential issues.
- Perform accurate, positive, and negative tests in support of faster releases.
- Simulate peak call volumes without testing on or impacting real customers.

> **The main reason to invest in Cyara is to improve call quality. From there, you have better customer satisfaction and faster time to market with updates.**
>
> — Senior technical engineer, telecommunications

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 organizations and is used to present the aggregate financial analysis in the next section. While the size of the composite is large, percentage gain improvements are applicable to organizations of various sizes. The composite organization has the following characteristics:

Description of composite. The composite is a banking and financial services company, headquartered in North America with global operations. It has $10 billion in annual revenue and 40 million inbound calls each year. The company employs 20,000 staff and, on average, 5,000 call center agents, including many employees operating out of a call center agency. The full-time equivalent of 10 employees are involved with IVR development, and the equivalent of five employees with chatbot development. Prior to adopting Cyara, these employees had limited contact center and conversational AI testing capabilities and lacked bandwidth to scale testing which led to frequent bug appearances.

Deployment characteristics. The organization uses Cyara's full suite of features. In Year 1, the composite expands IVR development because of automated testing. The accuracy and reliability of IVR workflows improve, as well as quality of voice calls, as more tests are run in Year 2 and Year 3. A small team leverages Cyara for chatbot development throughout the three-year period.

Key Assumptions

- **$10 billion annual revenue**
- **5,000 call center agents**
- **40 million inbound calls annually**

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	Time savings for call center agents	$1,725,000	$2,785,950	$4,522,941	$9,033,891	$7,268,772
Btr	Productivity increase in IVR development and testing	$309,400	$464,100	$556,920	$1,330,420	$1,083,249
Ctr	Time savings in chatbot development and testing	$139,776	$163,072	$163,072	$465,920	$384,358
Dtr	Recaptured value of abandoned callers	$84,000	$99,000	$114,159	$297,159	$243,951
	Total benefits (risk-adjusted)	$2,258,176	$3,511,522	$5,356,400	$11,126,098	$8,979,315

TIME SAVINGS FOR CALL CENTER AGENTS

Evidence and data. Prior to Cyara, interviewees' customers often spent extended periods of time navigating IVR systems because self-service pathways had not been thoroughly tested to ensure they worked as intended. Within a few minutes of failed attempts at finding the answer to their issues, these customers opted to speak to an agent rather than trust the IVR. The contact center platform manager for the healthcare organization cited that, depending on the error, hundreds to thousands of customers could engage with an error daily, which would lead them to transfer to an agent. A high number of transfers to agents could result in skyrocketing costs.

Since leveraging Cyara's Velocity module, IVR developers were able to identify the numbers customers dialed, what lines they connected to, and what the quality of the call sounded like through recordings. These enhancements expedited the troubleshooting process.

The director of DevOps and engineering transformation at a financial services company shared: "Every time we run a performance test, we find something because we don't do them on a weekly basis. … We'll always, always find an error that has yet to be encountered by customers. This helps us to address [those errors] before they become larger issues."

Automated testing with Cyara ensured that once issues were remediated and pathways worked correctly, the IVR contained more calls. For the healthcare organization, this resulted in $1 million saved that would have otherwise been paid toward call center agents to assist with calls.

Organizations also recognized savings around average handle time with customer calls. Developers adding and testing new workflows to capture more customer data before speaking with an agent helped to better prepare agents for servicing customers in a shorter period of time. What's more, when agents were better equipped with accurate information about customers' issues, it meant they handled and resolved customers' problems more efficiently. As a result, the average length of calls was shortened.

Modeling and assumptions. For the composite organization, Forrester assumes the following:

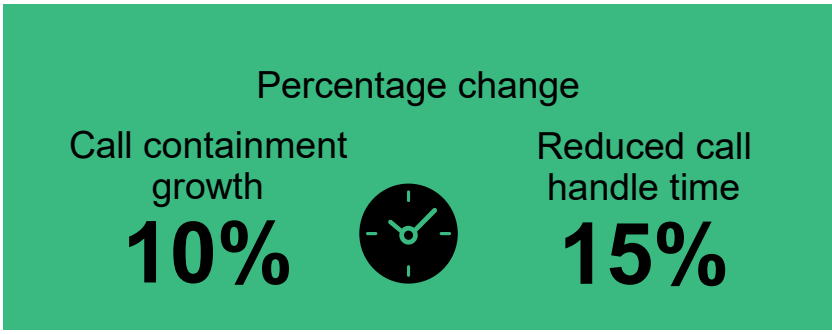
- The composite organization receives 40 million inbound calls from customers in Year 1. The number increases by 2.5% each year, reflecting growth of business.

- In Year 1, 50% of calls are for IVR-assisted customer self-service, meaning up to 50% of total calls can be contained in the IVR. This increases to 60% in Year 2 and 70% in Year 3 as the organization develops new workflows for customer self-service and as Cyara helps them to test out more workflows ahead of production.
- Of those calls, 70% are contained before adopting Cyara. Containment improves as more workflows are tested with Cyara. In Year 1, containment increases by 5%. In Year 2, 74% is the new base for call containment and with more testing occurring by teams more experienced in leveraging Cyara, 7.5% more calls are contained. In Year 3, the composite improves upon the 80% containment rate by 10%, reaching an 88% containment rate total. Among calls not contained are those with customers opting for a transfer to an agent for assistance or experiencing a potential poor customer experience (e.g., poor call quality, call drop, etc.).
- For each of the calls that were previously transferred to agents but are now contained, an average of $2 per call is recouped.
- Among the inbound calls, 30% are specifically for the IVR to assist in routing to the correct agent in Year 1. This decreases over the years to 20% in Year 2 and 15% in Year 3 as the composite organization focuses on minimizing agent interactions in favor of IVR primarily supporting customers.
- In Year 1, 50% of calls to the contact center IVR are accurately routed to the right agent. The accuracy in routing improves to 60% in Year 2 and 70% in Year 3 as the composite refines its agent routing workflows by using Cyara.
- Improvements to agent routing also increase the accuracy with which data is captured prior to customers speaking with contact center agents. With agents better prepared to serve customers, the average handle time is reduced by 7.5% in Year 1 and doubling to 15% in Year 3 as information capture further improves.
- The combination of calls to the IVR that can be contained in the IVR and routed to agents (A2+A8) totals 80% in Year 1, with the remaining 20% of calls made going directly to agents or experiencing a call drop. The share of calls directly to an agent or dropped shrinks to 15% in Year 3 as the IVR workflows expand.

Risks. The following factors may impact the estimated savings from this benefit:

- The volume of inbound calls each year.
- Maturity with IVR self-containment and routing prior to adopting Cyara.
- Average cost of call center agents.

Results. To account for these risks, Forrester adjusted this benefit downward by 25%, yielding a three-year, risk-adjusted total PV of $7.3 million.



Time Savings For Call Center Agents					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
A1	Number of inbound calls taken per year	Composite	40,000,000	41,000,000	42,025,000
A2	Percentage of calls for IVR-assisted customer self-service	Composite	50%	60%	70%
A3	Annual base level end to end containment rate on IVR service	PY+(PY*A4)	70%	74%	80%
A4	**Incremental gain in calls end to end contained without transfer since adopting Cyara**	**Interviews**	**5%**	**7.5%**	**10%**
A5	Annual average end to end containment rate on IVR service since adopting Cyara	A3+(A3*A4)	74%	80%	88%
A6	Improvement in number of calls no longer transferred	A1*A2*A3*A4	700,000	1,365,300	2,353,400
A7	Cost per call when transferred to agent	Composite	$2	$2	$2
A8	Value of contained calls	A6*A7	$1,400,000	$2,730,600	$4,706,800
A9	Percentage of calls for IVR routing to call center agent	Composite	30%	20%	15%
A10	Percentage of calls that reach call center agents more accurately through IVR since adopting Cyara	Composite	50%	60%	70%
A11	Number of calls more accurately routed through IVR to agent	A1*A9*A10	6,000,000	4,920,000	4,412,625
A12	**Average reduction in handle time**	**Interviews**	**7.5%**	**10%**	**15%**
A13	Value of accurately routed calls	A11*A12*A7	$900,000	$984,000	$1,323,788
At	Time savings for call center agents	A8+A13	$2,300,000	$3,714,600	$6,030,588
	Risk adjustment	↓25%			
Atr	Time savings for call center agents (risk-adjusted)		$1,725,000	$2,785,950	$4,522,941
	Three-year total: $9,033,891		**Three-year present value: $7,268,772**		

“Cyara resulted in about one million dollars in savings the first year from self-service in the IVR and not going to an agent. We were able to test experiences and found several huge gaps that would probably prompt the IVR to hang up and call back or transfer out to an agent. That was one of our biggest wins for the year.”

— Contact center platform manager, healthcare

PRODUCTIVITY INCREASE IN IVR DEVELOPMENT AND TESTING

Evidence and data. The time required to manually test an environment for bugs limited the scale and complexity of IVR environments prior to adopting Cyara. Time savings on several monitoring and testing fronts were so significant that interviewees' organizations could increase the amount of development they conducted without increasing headcount.

According to interviewees, time spent testing scenarios varied depending on their complexity, but a basic test could be set up within the span of a few minutes in Velocity. In one example, automated testing of 100 calls took place within a few minutes. Velocity identified an error and delivered an overview of its cause. On the whole, the length of test cycles decreased dramatically with Cyara. An enterprise architect at a financial services company said, "We've probably gone from about five weeks to around one week of effort for a test cycle."

Ongoing monitoring of IVR systems with Pulse also helped interviewees' operations engineers become aware of errors before they escalated into a larger challenge. The director of DevOps and engineering transformation said: "We have all of our most critical call flows setup for monitoring and we're validating those every 15 minutes. We're checking whether the voice quality is good, did the call take the amount of time expected to take, did a person get hung up on, etc. We're constantly validating the customer experience every 15 minutes."

Interviewees noted that they typically used Velocity and Pulse in tandem to address potential issues. First, they would run a regression and functional test in Velocity to ensure that workflows were operating smoothly and then monitored with Pulse to make sure that they continued to work well. This was especially helpful when transferring operations between data centers where call quality would vary or routing was inaccurate; even though workflows passed tests in Velocity in the staging environment, it took Pulse to uncover the data center as a contributing factor to issues when the workflows moved into production.

"The ability to automate testing, and repeat those test cases, saves us a lot of execution time and we're dramatically saving costs."

Director of DevOps and engineering transformation, financial services

Cruncher also helped organizations avoid significant costs by running load tests to see how their contact center performed during peak call hours. Interviewees' contact center teams did not tally above 20 employees, and the solution accomplished what they would not have been able to otherwise given the small size of their team.

Modeling and assumptions. For the composite organization, Forrester assumes the following:

- The full-time equivalent of 10 employees (cumulative time between employees) support development and testing of IVR systems.
- Prior to Cyara, development and testing time is split evenly.
- Of the 50% of time spent on testing, that time is reduced by 50% in Year 1 as developers begin conducting automated tests. Time savings

Reduction in time spent with IVR testing

90%

increase to 75% in Year 2 and 90% in Year 3 as teams test more complex workflows, continue to iron out bugs that surface, apply their learnings toward future development of IVR, and effectively eliminate most manual testing. Any remaining time spent on testing is used for setting up tests and reviewing results.

- The fully loaded hourly rate for contact center IVR developers is $70.

Risks. A factor that may impact the extent to which this benefit is realized includes the number of staff members involved in testing IVR systems, their salary, and the complexity of these systems.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $1.1 million.

Productivity increase In IVR Development And Testing

Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Number of IVR developer FTEs	Composite	10	10	10
B2	Percentage of development time dedicated toward IVR testing before Cyara	Interviews	50%	50%	50%
B3	**Reduction in time spent testing with Cyara**	**Interviews**	**50%**	**75%**	**90%**
B4	Subtotal: Time savings on IVR testing with Cyara annually (hours)	B1*B2*B3*2,080	5,200	7,800	9,360
B5	Fully loaded hourly rate for developers of IVR contact center	TEI standard	$70	$70	$70
Bt	Productivity increase in IVR development and testing	B4*B5	$364,000	$546,000	$655,200
	Risk adjustment	↓15%			
Btr	Productivity increase in IVR development and testing (risk-adjusted)		$309,400	$464,100	$556,920
	Three-year total: $1,330,420			**Three-year present value: $1,083,429**	

TIME SAVINGS IN CHATBOT DEVELOPMENT AND TESTING

Evidence and data. For the interviewees, chatbots represented an increasingly important communication channel for their contact centers. Prior to Cyara, a dedicated team devoted significant time to regression and functional testing chatbots to ensure that customers received helpful directions no matter the type of question or how it was asked. While interviewees were still in the early days of leveraging Cyara's Botium, the solution allowed teams to automate large portions of this testing work and redirect resources to development work.

Interviewees shared that Botium automated test case writing and used the live chat recorder feature to efficiently identify the exact areas that required testing. The interviewees appreciated the ability to crawl bots to map entire flows. A director of DevOps and engineering transformation at a financial services organization said: "It will execute hundreds of concurrent interactions with your bot and it maps out your entire flow. This extends to when you're dealing with AI and have several different permutations of how a flow can happen within a chatbot."

The senior QA manager at a financial services company said: "The live chat recorder feature really helps us save some time because we just open Botium, start a live chat, and then go directly where we want to go in our tests [and record the interaction]. It really does help and saves us time."

The same customer identified Botium as an area where they saved around 60% to 70% of manual effort.

Acceleration in chatbot testing:

70%

Modeling and assumptions. For the composite organization, Forrester assumes the following:

- The full-time equivalent of five employees support chatbot development and testing. This means that more than five people support development and come from AI and machine learning (ML) teams, including maintaining training data, conversational flow designers, QA teams, and cloud or DevOps operations.
- Slightly more time was dedicated toward building out chatbots (60%) than testing them (40%).
- Of the 40% of time dedicated toward testing chatbots, automation testing with Botium reduces the amount of time spent testing by 60% in Year 1. Developers spent time reviewing results and testing chatbots repeatedly to get better results. By Years 2 and 3, time savings increases to 70% as testing with Cyara at critical quality gates brings more chatbots into production within a few months. In addition, teams apply learnings from tests to better inform further development.

Risks. Factors that may impact the extent to which this benefit is realized include:

- Size of team and hourly rate working on chatbots.
- Extent of chatbot adoption at the organization.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV of $384,000.

"Botium has helped us replace several manual test cases and made testing new dialogue scenarios much easier for us. A team using Botium saves at least half a day in work spent testing."

Senior QA Manager, financial services

Time Savings In Chatbot Development And Testing					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
C1	Number of FTEs developing and testing chatbots	Assumption	5	5	5
C2	Percentage of time dedicated toward testing chatbots	Interviews	40%	40%	40%
C3	**Improvement in time spent testing chatbots with Cyara**	**Interviews**	**60%**	**70%**	**70%**
C4	Subtotal: Total time saved on chatbot testing with Cyara annually (hours)	C1*C2*C3*2,080	2,496	2,912	2,912
C5	Fully loaded hourly rate of chatbot team	TEI standard	$70	$70	$70
Ct	Time savings in chatbot development and testing	C4*C5	$174,720	$203,840	$203,840
	Risk adjustment	↓20%			
Ctr	Time savings in chatbot development and testing (risk-adjusted)		$139,776	$163,072	$163,072
	Three-year total: $465,920		**Three-year present value: $384,358**		

RECAPTURED VALUE OF ABANDONED CALLERS

Evidence and data. Errors that made their way into production contributed to negative customer experiences from which value was sometimes not recovered. Too often customers experienced dropped calls and inaccurate routing. Mounting frustrations with customer service's inability to resolve their inquiries put the interviewees' organizations at risk of customers taking their business elsewhere.

With Cyara, many of these errors were caught in preproduction before they reached customers and caused significant problems. In one example, the director of DevOps and engineering transformation at a financial services organization shared that they caught a bug that would have capped the number of incoming calls at every second by half. Issues of this severity were no longer a concern for interviewees.

Beyond encountering bugs, customers were also subject to poor connection quality (e.g., heavy static, outside noise, etc.). At organizations that leveraged Cyara's ResolveAX, contact center teams monitored phone calls to hear the quality of the connection, diagnose issues contributing to poor quality, and resolve the issues contributing to these calls. This was particularly helpful for organizations that leveraged international contact centers. Interviewees noted that, since 2020, remote work at these centers expanded significantly and led to agents handling calls at home or public areas. After monitoring calls, users of ResolveAX were able to identify agents with poor connection quality and make changes to fix the issue faster and more efficiently.

With better overall customer experience, interviewees' organizations improved customer satisfaction and mitigated customer value loss.

Modeling and assumptions. For the composite organization, Forrester assumes the following:

- Among inbound calls, 5% are sales based each year.
- Among sales-based calls, 10% result in a negative experience, including abandonment from long waits, dropped calls, and poor call quality.
- Among callers with a poor experience, 5% won't call back. As a banking and financial services organization, customers are more likely to call back regarding financial decisions.
- The average conversion rate for these callers is 20%. The value of each financial services and banking caller is $750, reflective of value derived from deposits, credit cards, and other revenue-generating opportunities.
- The percentage of value recaptured grows from 70% in Year 1 to 90% in Year 3 as developers improve upon their IVR systems.
- An operating margin of 10% is applied.

"A customer calling us twice after a bad experience isn't cost-effective for us with our agents' time. But more importantly, that's a bad customer experience. After a number of failures that can result in customer costs to us … Cyara has reduced our count of bugs and that's a great value to our customers."

Project manager, customer service and sales — AI and automation, telecommunications

Risks. Factors that may impact the extent to which this benefit is realized include:

- Variability in the number of sales-based inbound calls and share that result in a poor customer experience.
- Customer sentiment toward the organization outside of the contact center and prospective value for the organization.
- Industry vertical of the organization and its types of customers.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV of $244,000.

Recaptured Value Of Abandoned Callers

Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Number of sales-based inbound calls	Composite	2,000,000	2,062,500	2,114,063
D2	Percentage of callers that are abandoned, disconnected, or have poor customer experiences before Cyara	Interviews	10%	10%	10%
D3	Percentage of customer who don't call back	Assumption	5%	5%	5%
D4	Conversion rate of callers	Assumption	20%	20%	20%
D5	Revenue per caller	Assumption	$750	$750	$750
D6	Value of abandoned callers	D1*D2*D3*D4*D5	$1,500,000	$1,546,875	$1,585,547
D7	**Percentage of value recaptured from improved calls due to Cyara**	**Interviews**	**70%**	**80%**	**90%**
D8	Subtotal: Revenue of callers retained with Cyara	D6*D7	$1,050,000	$1,237,500	$1,426,993
D9	Operating margin	TEI standard	10%	10%	10%
Dt	Recaptured value of abandoned callers	D9*D10	$105,000	$123,750	$142,699
	Risk adjustment	↓20%			
Dtr	Recaptured value of abandoned callers (risk-adjusted)		$84,000	$99,000	$114,159
	Three-year total: $297,159			**Three-year present value: $243,951**	

UNQUANTIFIED BENEFITS

Interviewees mentioned the following additional benefits that their organizations experienced but were not able to quantify:

- **Improved customer sentiment toward brands.** Positive interactions from service calls with quick, accurate routing and no disconnects bolstered customer retention and favorability toward a brand by underscoring the consistency of the brand's service. Beyond recapturing lost customer sales, interviewees couldn't speak to a quantifiable method for measuring such improvements across their organizations, but they identified Cyara as a factor in improved Net Promoter Score™ (NPS) scores. The project manager of customer service and sales at the telecom organization said: "If you call a system and the system doesn't recognize you or give an answer matching your original intent, that's not a good customer experience. You invest in Cyara to improve the quality of that interaction, so we don't have a negative impact on the Net Promoter or customer satisfaction score."
- **Chatbot support driving greater customer self-service.** While interviewees had quantified positive experiences with developing chatbots, they had yet to quantify the impact of chatbots on customer service and their performance in deployment. Based on early tests, it appeared that customers experienced reliable support from chatbots within the parameters of where it would help. Rollout was expected to take place within a specific segment of business, collect more training data, and expand over time as further conversational AI logic was built out. The contact center platform manager at a financial services organization said, "It will be a phased approach, every few months we will introduce more and more functionality."
- **Faster time to market for new features and updates.** Since deploying Cyara, organizations tested updates to their contact center systems much faster before pushing them to market. Interviewees at the telecommunications company said they accelerated time to market by as much as 50%. A contributing factor to this speed was greater confidence in the updates they deployed. In the past, a deployment could experience a technical issue that led to a rollback of the update and more work for developers.

"The software itself has helped us move forwards as a business with speed to market. We're able to release stuff quicker in a regulated environment, which is very much a challenge in our space."

Director of DevOps and engineering transformation, financial services

Increase in speed to market for IVR updates at telecom company **50%**

- **Avoided contact center outages.** In severe cases in the past, peak call volumes and/or bugs could lead to a service outage. Cyara's effectiveness at discovering these technical issues before they reached production made it difficult for companies to assess the value of an outage as they rarely happened anymore. However, the value saved was understood to be significant. The contact center platform manager at a healthcare organization said: "We're able to mitigate any issues before our open enrollment [with load testing] so we have a stable platform. The last thing we want is an outage."

FLEXIBILITY

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

- **Support for web, email, and SMS customer service.** Interviewees expressed interest in or plans to use Cyara beyond their IVR environments in new contact service channels including email, SMS, and web. They recognized the value of supporting customers through as many channels as possible but were currently focused on their IVR system and building chatbots.

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	Cyara subscription and support costs	$25,000	$770,000	$797,500	$825,000	$2,417,500	$2,003,926
Ftr	Implementation and training costs	$40,040	$9,240	$9,240	$9,240	$67,760	$63,019
	Total costs (risk-adjusted)	$65,040	$779,240	$806,740	$834,240	$2,485,260	$2,066,945

CYARA SUBSCRIPTION AND SUPPORT COSTS

Evidence and data. Annual licensing costs for Cyara were based on the services leveraged (i.e., Velocity, Cruncher, Pulse, Botium and ResolveAX) and scale of usage.

Interviewees generally used each of Cyara's services and their level of usage depended upon which area of their contact center they chose to focus development on. For example, a couple interviewees were shifting more spending toward Botium as they sought to bolster chatbot development.

Modeling and assumptions. For the composite organization, Forrester assumes the following:

- The composite pays an onboarding charge, which is a two-week services engagement that covers onboarding, training, and shadowing.
- The composite organization uses each of Cyara's services and spends more as its services are increasingly leveraged across the contact center.

Risks. Cost calculations can vary based on the Cyara services used and the scale of testing.

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 $2.0 million.

Cyara Subscription And Support Costs						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
E1	Cyara subscription and support costs	Interviews	$25,000	$700,000	$725,000	$750,000
Et	Cyara subscription and support costs	E1		$700,000	$725,000	$750,000
	Risk adjustment	↑10%				
Etr	Cyara subscription and support costs (risk-adjusted)		$25,000	$770,000	$797,500	$825,000
	Three-year total: $2,417,500			**Three-year present value: $2,003,926**		

IMPLEMENTATION AND TRAINING COSTS

Evidence and data. Interviewees spent a small amount of time planning, mapping, and integrating Cyara with their cloud operations. For some interviewees, this also meant moving some of their operations off on-premises to the cloud.

Adopting Cyara required a small investment of time for training employees to use the solution. This cost category accounts for the productivity lost as a result of this training effort.

Modeling and assumptions. For the composite organization, Forrester assumes the following:

- The full-time equivalent of four employees support planning, mapping, and integrating Cyara with their cloud system and ensuring it's running as expected.
- Deployment of Cyara takes place over the course of one week.
- The assumed fully loaded hourly rate for FTEs supporting deployment is $70.
- Fifteen full-time employees spend the equivalent of three days training on Cyara initially and learning best practices over time. Throughout the three-year period, five more full-time employees are trained on the solution each year to account for growing usage of Cyara and churn at the organization.
- The assumed fully loaded hourly rate for Cyara users is $70.

Risks. The cost calculation can vary based on:

- The scale of the Cyara deployment.
- The number of staff trained and the amount of time spent on training.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $63,000.

"Their support is fantastic. We have a dedicated Cyara technical resource. Even right now, we're working on setting up our next load test and they're there on every call. They provide guidance, like [for example], 'You should think about this,' or 'If you tweak your test case this way, it'll make it more efficient.'"

Director of DevOps and engineering transformation, financial services

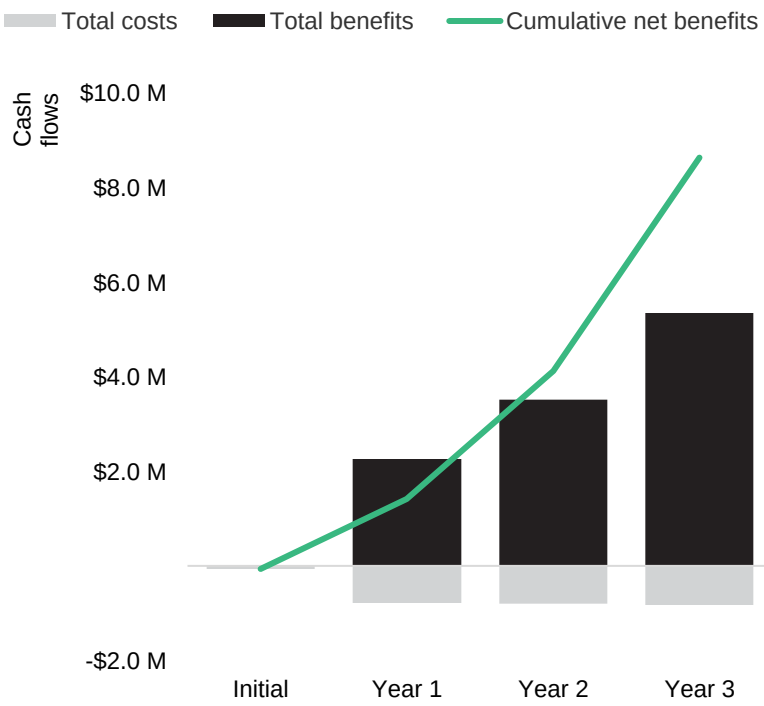
Implementation And Training Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Number of FTEs assisting with deployment of Cyara	Interviews	4			
F2	Hours spent on deployment of Cyara	Interviews	40			
F3	Fully loaded hourly rate of FTEs	TEI standard	$70			
F4	Subtotal: Cost of deployment	F1*F2*F3	$11,200			
F5	Number of developer FTEs	Initial: B1+C1 Y1 to Y3: Assumption	15	5	5	5
F6	Number of hours spent training	Interviews	24	24	24	24
F7	Fully loaded hourly rate of developer FTEs	TEI standard	$70	$70	$70	$70
F8	Subtotal: Cost of training	F5*F6*F7	$25,200	$8,400	$8,400	$8,400
Ft	Implementation and training costs	F4+F8	$36,400	$8,400	$8,400	$8,400
	Risk adjustment	↑10%				
Ftr	Implementation and training costs (risk-adjusted)		$40,040	$9,240	$9,240	$9,240
	Three-year total: $67,760		**Three-year present value: $63,019**			

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	($65,040)	($779,240)	($806,740)	($834,240)	($2,485,260)	($2,066,945)
Total benefits	$0	$2,258,176	$3,511,522	$5,356,400	$11,126,098	$8,979,315
Net benefits	($65,040)	$1,478,936	$2,704,782	$4,522,160	$8,640,838	$6,912,370
ROI						334%
Payback period						<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."

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.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