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The Total Economic Impact™ Of IBM Watson Assistant
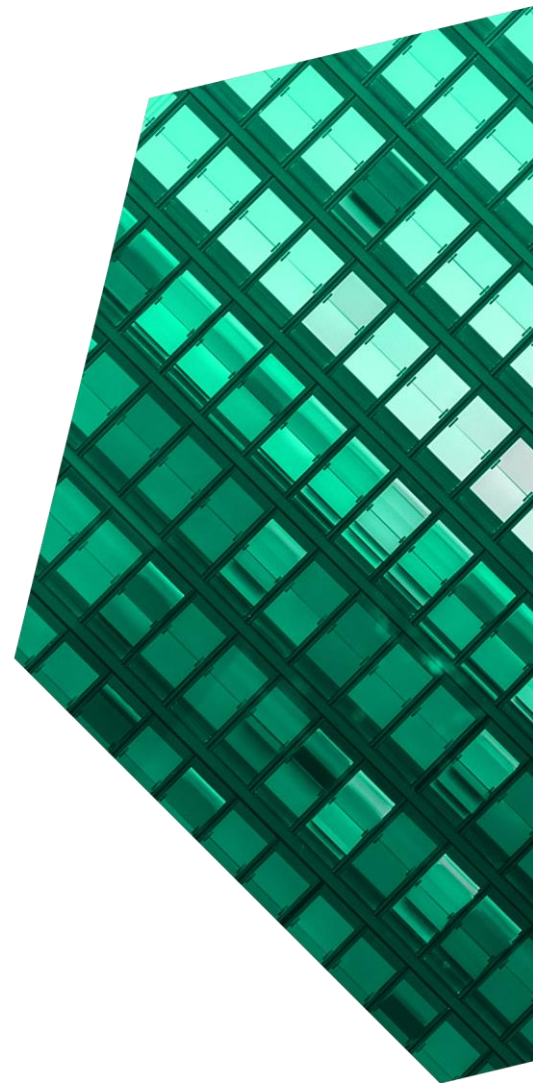
Cost Savings And Business Benefits
Enabled By Watson Assistant

APRIL 2023

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Executive Summary

Conversational AI technology is key technology that enterprises use to assist with customer service. Expanding the use of conversational AI into new areas has been challenging, due to the cost and complexity of the development process. IBM Watson Assistant enabled organizations to reduce support costs and increase customer satisfaction, while IBM's visual development interface was used to accelerate the development of new applications that provide additional business value.

Watson Assistant is IBM's conversational AI platform that allows users to interact with business systems using natural human language. IBM has combined an advanced conversational platform with developer and line-of-business-friendly tools with the breadth of the broader Watson portfolio.[1] Enterprises of all sizes can build and train the AI solution to serve a wide range of use cases across applications, devices, and channels. IBM's low-code/no-code interface brings these capabilities to a broader audience, enabling a new group of nontechnical employees to create and improve conversational AI skills.

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Watson Assistant.[2] The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Watson Assistant on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four representatives with experience using Watson Assistant in a variety of customer self-service and agent-assist use cases. All interviewees had experience in developing new skills/intents using the visual builder low-code/no-code interface for creating chatbots, but they also utilized nontechnical resources such as business analysts to create and update skills. Forrester also conducted a survey of 30 C-level executives and managers in North America whose organizations use Watson Assistant. For the

KEY STATISTICS

Return on investment (ROI)
370%

Net present value (NPV)
$23.41M

purposes of this study, Forrester aggregated the interviewees' and survey respondents' experiences and combined the results into a single composite organization that is a financial and insurance services company with revenue of $7 billion per year.

Prior to using Watson Assistant, the interviewees provided traditional human-serviced chat, email, and call services. These methods were slow, clunky, and costly. The interviewees' organizations struggled with efficiently routing questions to appropriate agents, high volumes of simple queries, and long response times. These factors coalesced into a poor customer experience marked by a lack of automation in customer service operations. Prior attempts to implement conversational AI yielded limited success, leaving them with systems that were hard to train on new use cases.

After the investment in Watson Assistant, the interviewees were able to lower costs through the expanded use of digital channels for customer

support and automation of processes that improved agent efficiency. The investment also empowered agents to drive increased revenue because they had higher-quality leads through the availability of more complete and accurate customer information, while the integration of knowledge management tools helped increase customer satisfaction. Developers improved their efficiency in creating new skills, while development of standard chatbots (performing actions such as "Check order status" or "Make a payment"), customer information forms, and business analytics were shifted to business analysts and customer support managers.

KEY FINDINGS

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

- **The organization achieves cost savings of $6.00 per contained conversation with Watson Assistant.** The ability to rapidly train and refine Watson Assistant drives increasing containment rates each year, providing growing cost savings. The organization is able to realize cost savings of $22.2 million as it refines its Watson implementation, increasing its containment rate from 60% in Year 1 to 90% in Year 3.

- **Correctly routed conversations save $7.75 per correctly routed call.** By using chatbots to gather information, Watson Assistant routes calls more effectively to the appropriate human being when escalation is required, reducing transfers and time to resolution. The improved routing is worth nearly $4.7 million over three years.

- **Chatbot-augmented agents reduce interaction handle time by up to 30%.** Customers measure agent productivity improvements in several ways, such as the ability to handle greater volumes of chats with the same number of agents and avoiding the costs of additional hires. The

composite organization uses Watson Assistant to augment its sales team, increasing qualified customers for agents and driving incremental revenue. The improvement is worth more than $2.4 million over a three-year period.

- **Developers and nontechnical employees use the low-code/no-code visual builder to accelerate new chatbot development.** The organization experiences productivity gains as developers use the visual builder tool to create skills 20% more quickly than if done from scratch. Business analysts can develop chatbots using templates and other skills using the tool, enabling the organization to avoid future developer hires in a tight job market.

Unquantified benefits. Benefits that provide value for the composite organization but are not quantified in this study include:

- **Creating a self-serve, digital-first experience that provides a competitive advantage.** Adoption of conversational AI technology enables organizations to improve customer satisfaction scores, while workflow efficiencies enable call center agents to serve customers more quickly, resulting in increased revenue.

- **Improving the agent experience (and employee retention).** When a brand deploys advanced technology to help its agents, the agents see that it improves their performance by giving them the information they need at the right time. The improved experience comes not just from the agent-assist use cases: If customers are correctly routed, they are less frustrated or angry; that, in turn, produces a better agent experience. Employers can reduce burnout and employee turnover when they help employees balance their job demands with technology and training.[3]

- **Creating skills more quickly compared to previous chatbot solutions while also saving on the cost of development and professional**

ROI
370%

BENEFITS PV
$29.75M

NPV
$23.41M

SKILLS DEPLOYED
450

Benefits (Three-Year)

Customer interaction containment savings	$22.2M
Savings from correct interaction routing	$4.7M
Increased efficiency from sales agent assist	$2.4M
Conversational AI skill development cost savings	$510.3K

"You can build anything you want with Watson Assistant. We're able to create skills and change the architecture faster than we were before."

— Chief risk and innovation officer, financial services

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 Watson Assistant.

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 Watson Assistant can have on an organization.

DUE DILIGENCE
Interviewed IBM stakeholders and Forrester analysts to gather data relative to Watson Assistant.

INTERVIEWS AND SURVEY
Interviewed four representatives and surveyed 30 C-level executives and managers at organizations using Watson Assistant 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 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.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by IBM 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 Watson Assistant.

IBM 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.

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

Forrester fielded the double-blind survey using a third-party survey partner.

Interviews			
Role	**Industry**	**Region**	**Employees**
Chief risk and innovation officer	Financial services	North America	650
Head of global insurance	Financial services and insurance	North America	>15,000
ML engineer, senior conversational analyst	Financial services	North America	>20,000
VP, executive leader AI, ML, analytics	Engineering services	North America	40,000

KEY CHALLENGES

Before the investment in Watson Assistant, interviewees and survey respondents relied on human engagement to answer queries through traditional call, chat, and email channels.[4] Organizations implemented other conversational AI solutions but faced limitations on expanding their use to cover new tasks. The organizations faced the following challenges:

- **Traditional call centers were costly.** One of the many challenges facing traditional call centers is that phone interactions were one of the most expensive service channels.[5] Other cost drivers included high agent turnover and the complexity of existing data discovery processes. As the chief risk and innovation officer for a midsized financial services firm reported, the large variability in call volume makes training and staffing difficult; the company experienced 40% call abandonment rates during peak periods when it didn't have enough agents, costing the firm a significant amount of revenue.

- **Prior conversational AI solutions were functionally limited and expensive to adapt.** Point-solution chatbots and conversational AI platforms promised the ability to lower costs by automating customer service functions, but organizations found them lacking in accuracy and flexibility beyond very basic functions. These solutions required significant investment in AI expertise, including machine learning (ML) engineers, data scientists, and application developers along with conversational analysts and user experience (UX) designers to create new skills. Even with the requisite team in place, skills development was a time-consuming process, with 50% of survey respondents noting that chatbots required too much time to build.

> **"The [Watson] chatbot brings in 10% of company revenue and collects 25% more revenue per call than an agent."**
>
> *Chief risk and innovation officer, financial services*

- **Multistep routing journeys and long wait times created a frustrating customer experience.** Everyone has experienced the dreaded "Let me transfer you" response — sometimes repeatedly. With each new agent, customers must reexplain their questions, and frustration soars. Not only does this create a poor experience for customers, but it also drives up costs to the business.

- **Limited service hours also created a poor customer experience.** In the absence of global contact centers, interviewees noted that their customers' experiences suffered when agents were off-duty. The ML engineer and senior conversational analyst for a financial services company serving the consumer market said they had a prior solution that was used to connect customers to live agents, "But it couldn't be staffed 24/7 like a bot."

- **Agents did not have the right knowledge and data.** Delayed access to knowledge caused frustrations for both agents and customers and increased the time to resolution. Agents needed access to information such as parts catalogs, for example, more quickly to reduce wait times. In other cases, the lack of accurate information meant the sales process was delayed by a manual data entry process.

"There wasn't any low-code/no-code solution provided by [the prior solution]. Bot development was very much something that needed to be done by AI model engineers."

Head of global insurance, financial services and insurance

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

The interviewees' organizations searched for a solution that could:

- Assist with a wide variety of customer service tasks, ranging from information retrieval to capturing information for lead generation activities. The organizations wanted a solution that offered these capabilities across web, social, and voice channels.

- Improve customer satisfaction scores while also reducing costs through workflow efficiencies.

- Offer lower operating costs through faster time to value, a better developer experience, and simplified operations at scale.

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 interviewees and 30 survey respondents, and it is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The composite organization is a global financial services firm based in the United States that provides sales, customer support, and service support for its products in high volume. The organization handles 9 million interactions with customers per year, 3.6 million of which are voice calls. The organization generates revenue of $7 billion annually. It employs 25,000 people, with 400 customer service agents and 250 sales agents supporting operations in a highly regulated industry.

Deployment characteristics. The composite organization has prior experience with conversational AI technology. Aided by the use of the Watson Assistant visual builder low-code/no-code tool,

developers can create 250 skills in Year 1 and then shift to development of more complex skills in Years 2 and 3. The tool also enables nontechnical employees to build skills; by Year 3, 40 business analysts spend 25% of their time on low-code development of chatbot skills and business reports.

Key Assumptions

- **$7B in annual revenue**
- **3.6M voice calls**
- **400 agents**
- **20 developers working on conversational AI applications**

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	Customer interaction containment savings	$4,337,550	$8,606,250	$14,768,325	$27,712,125	$22,151,492
Btr	Savings from correct interaction routing	$1,660,050	$1,897,200	$2,134,350	$5,691,600	$4,680,639
Ctr	Increased efficiency from sales agent assist	$255,000	$892,500	$1,912,500	$3,060,000	$2,406,311
Dtr	Conversational AI skill development cost savings	$205,200	$205,200	$205,200	$615,600	$510,302
	Total benefits (risk-adjusted)	$6,457,800	$11,601,150	$19,020,375	$37,079,325	$29,748,744

CUSTOMER INTERACTION CONTAINMENT SAVINGS

Evidence and data. Organizations invested in Watson Assistant to drive cost efficiencies and improve customer experience (CX) by providing real-time, scalable customer service and self-service options. Interviewees used Watson Assistant to help reach this goal by using Watson as the initial touchpoint for customers through digital and voice channels. Enterprises trained Watson to answer simple queries, direct customers to knowledge content, clarify intent, or hand off the interaction to the appropriate human agent.

Interviewees measured the success of these efforts through containment rates. Containment is typically defined as the ability to interact with the Watson Assistant platform without human involvement.

Containment rates with Watson Assistant were higher compared to prior solutions because of the solution's accuracy, according to interviewees. Companies gained additional efficiencies because the solution provided answers to customers more quickly than humans could. The chatbots operated 24/7, addressing staffing challenges that organizations experienced. As a result, interviewees and survey

respondents noted measurable improvements in customer satisfaction and increased revenue as a result of servicing customers more quickly — all while operating around the clock.

- Interviewees experienced improved accuracy rates (understanding what a customer said) compared to other solutions. "Watson's ability to understand names and basic tasks like 'Transfer to an agent' are so high that they cease to be something we're concerned about," according to the chief risk and innovation officer in a financial services organization. Survey respondents reported that, on average, accuracy rates were 71% for voice channels and 76% for chatbot responses. Accurate responses translated into fewer customer queries being transferred to agents, interviewees said.

- The Watson Assistant platform improved agent efficiency and reduced call duration. Sixty percent of survey respondents said they experienced a reduction in the amount of time customers spent interacting with customer service systems; 50% reported an increase in revenue resulting directly from servicing customers more quickly.[6]

- Containment rates are important, but in some instances they don't indicate that a customer didn't eventually contact a human or was satisfied with their interaction. The ML engineer for a financial services firm that offers personal finance services such as mortgages said: "When we're improving a bot, we're not just trying to increase the containment because you can increase containment and lower customer satisfaction [if they need to reach a human agent]. We try to increase both the satisfaction and containment rates." With Watson Assistant, the engineer noted, "We see satisfaction (with response) of 50%. In the customer service world, its usually 5% to 10% for [Net Promoter Score^SM] NPS surveys," the engineer noted.[7]

"What percentage of telephone, chat, and other customer queries that your company gets each month are handled by IBM Watson Assistant?"

Area	Average % of queries handled by Watson Assistant
Telephone calls	62%
Chats	68%
Other	56%

Base: 30 C-level IBM Watson Assistant customers
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM Watson Assistant, December 2022

Modeling and assumptions. Based on the interviews, Forrester estimates the following for the composite organization:

- Customer self-service is the composite organization's primary use case and is deployed

in its first year of investment. The composite fields 9 million interactions per year.

- The composite builds out different product lines covered by Watson Assistant over time, increasing from 35% to 65% by Year 3.

- The organization increases the number of voice interactions that the platform responds to from 45% in Year 1 to 55% in Year 3.

- Watson Assistant answers 60%, 75%, and 90% of deflected interactions in Years 1, 2, and 3, respectively, as the organization continues to gain experience in training the platform and increasing its accuracy.

- The avoided cost (the differential between a human response and digital response) is $6 for each interaction.

> **"The average call duration for our Watson tool is 30% less compared to a human because a human gets involved in chitchat and all kinds of things [Watson] doesn't."**
>
> *Chief risk and innovation officer, financial services*

Risks. Savings from interaction containment can vary based on several factors, including:

- **The way an organization defines and measures containment and deflection.** One method organizations use to measure deflection is by analyzing repeat contact — specifically, if a customer connects with a chatbot and then connects again. This measurement is highly nuanced and can change based on recontact

windows (24 hours, a week, etc.), channel, or case type.

- **The number of products or services that Watson Assistant is trained on.** If a company trained Watson Assistant on all its products, this would increase the containment rate and subsequent benefit figure.

- **The complexity of the interactions being handled.** The accuracy of conversational AI platforms is impacted by a variety of factors, such as accents in voice calls or unexpected responses that a system has not been trained on. The ability of an organization to train and improve a platform will impact accuracy, and thus containment rates.

- **The number of interactions an organization has per year.** While Forrester conservatively calculates annual customer conversations as static year over year, it is likely that annual conversations would increase year over year,

which would increase the benefit amount correspondingly.

- The cost of human agents can vary based on the industry and the complexity of support scenarios.

- Increasing language coverage could further increase interaction volumes. Watson Assistant supports 13 language-specific models in addition to the universal language model. Helping agents respond to customers in multiple languages could result in additional interaction volume handled by Watson Assistant beyond what is experienced by the composite organization.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $22.2 million.

Customer Interaction Containment Savings

Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Total annual customer interactions	Composite	9,000,000	9,000,000	9,000,000
A2	Percentage of interactions regarding product lines covered by Watson	Interviews	35%	50%	65%
A3	Percentage of interactions trained	Composite	45%	50%	55%
A4	Interactions deflected to Watson	A2*A3*A4	1,417,500	2,250,000	3,217,500
A5	Effective rate for Watson response	Interviews	60%	75%	90%
A6	Conversation volume successfully contained by Watson	A4*A5	850,500	1,687,500	2,895,750
A7	Avoided cost of human response (before Watson)	Interviews	$6.00	$6.00	$6.00
At	Customer interaction containment savings	A6*A7	$5,103,000	$10,125,000	$17,374,500
	Risk adjustment	↓15%			
Atr	Customer interaction containment savings (risk-adjusted)		$4,337,550	$8,606,250	$14,768,325
	Three-year total: $27,712,125		**Three-year present value: $22,151,492**		

SAVINGS FROM CORRECT INTERACTION ROUTING

Evidence and data. A key challenge for interviewees in their prior environments was costly and inefficient interaction routing. Customers don't necessarily categorize or self-select into the right queue.

Forrester research describes the value of front-end chatbots when it comes to aiding with routine tasks: "The chatbot gathers all relevant information, authenticating the customer, determining the customer's goal, and then handing the interaction off to a human agent to resolve."[8] This front-end data gathering has had a significant impact on relieving the routing issue challenges of the prior environment.

As the chief risk and innovation officer for a financial services company noted, a payment collection process was significantly aided by introducing Watson Assistant: "Fifty percent of customers wouldn't verify information with the agent. We increased data collection and accuracy with the bot."

Another interviewee's organization paid for a platform that used conversational AI to route calls. The ML engineer and senior conversational analyst for a financial services firm noted that the call center did not operate 24 hours a day, which meant interactions occurring outside business hours were not being answered.

Modeling and assumptions. To capture the value of proper routing of customer queries noted by interviewees, Forrester assumes for the composite:

- The impact on the organization for proper routing begins in Year 1.

- Forty percent of the composite's yearly interactions with customers are voice calls.

- Prior to Watson Assistant, 20% of calls were improperly routed.

- The average cost of a misrouted call is $13.75, while a properly routed call is $6.00.

- As Watson's training improves, the success rate of transferred calls increases. The success rate is 70%, 80%, and 90% in Years 1, 2, and 3, respectively.

- Other technology investments, process changes, and improvements occur along with the investment in Watson Assistant that could impact the cost savings of proper routing. For this reason, Forrester assigns 50% of the value of this benefit to Watson Assistant.

Risks. The value of proper routing will vary by organization and impact the realization of this benefit. Factors include:

- The average cost to resolve calls will vary by organization and will have a significant impact on the outcome of the calculation.

- Rates of conversation misrouting in the prior environment may be much higher than 20% depending on the customer service structure and complexity.

- Proper routing success rates will also vary by organization depending specifically on the sophistication of Watson Assistant programming and the complexity of customer questions.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $4.7 million.

Savings From Correct Interaction Routing

Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Total annual customer interactions	Composite	9,000,000	9,000,000	9,000,000
B2	Percentage of interactions through calls	Composite	40%	40%	40%
B3	Total annual customer conversations made through calls	B1*B2	3,600,000	3,600,000	3,600,000
B4	Percentage of conversations misrouted before Watson Assistant	Interviews	20%	20%	20%
B5	Number of conversations requiring transfer	B3*B4	720,000	720,000	720,000
B6	Average cost to resolve misrouted call by human	Interviews	$13.75	$13.75	$13.75
B7	Average cost to resolve correctly routed call by human	Interviews	$6.00	$6.00	$6.00
B8	Incremental savings from disambiguated contacts	B6-B7	$7.75	$7.75	$7.75
B9	Transfer success rate	Interviews	70%	80%	90%
B10	Percentage of savings attributable to Watson Assistant	Assumption	50%	50%	50%
Bt	Savings from correct interaction routing	B5*B8*B9*B10	$1,953,000	$2,232,000	$2,511,000
	Risk adjustment	↓15%			
Btr	Savings from correct interaction routing (risk-adjusted)		$1,660,050	$1,897,200	$2,134,350
	Three-year total: $5,691,600		**Three-year present value: $4,680,639**		

INCREASED EFFICIENCY FROM SALES AGENT ASSIST

Evidence and data. A chatbot that served up tailored knowledge and customer context allowed agents to more quickly and consistently answer complex questions.

Watson Assistant improved sales processes, interviewees said. In the case of sales agents in a highly regulated industry such as financial services, organizations that implemented Watson Assistant found that they had better-qualified leads and faster turnaround on mortgage applications.

- Prior to using Watson Assistant, one interviewee explained that the agents turned to an internal call center to ask regulatory questions involving mortgage application processes. Often, customers were placed on hold while the agent turned to the internal help desk, which in turn searched for the information to answer customer questions. This led to wait times of up to 10 minutes for simple answers.

- As website visitors used Watson Assistant to gather information about mortgages, the organization was able to collect data to better qualify the customer, the ML engineer and senior conversational analyst at the financial services firm said: "It has been proven that our bots produce higher-quality leads. That's because we can filter out the conversations much better and get [customers] transferred into different places. We found that those leads are more likely to close on a loan."

- Watson Assistant has another unexpected use: talking to interactive voice response (IVR) systems at banks. Customers or agents call in to IVR systems that are used by other banks to find out loan statuses and to pay off loans based on estimates provided by those systems. One interviewee said they use Watson Assistant to "talk" to these IVR systems to gather data and automate this stage of the mortgage refinance process, saving significant time for their organization.

- The VP and executive leader of AI, ML, and analytics for an engineering services firm reported that they used Watson Assistant as a core component of an application they built for a wireless service provider that saves 70% of time on certain calls by taking information from Watson Assistant and scoring a customer's likelihood of canceling service and their reasons for doing so. The application then creates an offer presentation for the agent. The result is that the organization improved customer retention by 1.5%, which is significant for a client with upward of 40 million customers.

Modeling and assumptions. To model this benefit, Forrester makes the following assumptions for the composite organization:

- The composite organization deploys Watson Assistant in Year 1 as a chatbot on the organization's website. Data and analytics from the chatbot are used to improve the mortgage application and qualification process.

- The composite has 150 agents using the internal chatbot.

- The performance improvement of sales calls interactions (as measured in additional successful applications completed) starts at 2% in Year 1 and rises to 7% and 15% in Years 2 and 3, respectively.

- The resulting impact on agent productivity allows the organization to avoid future hires.

- The fully burdened annual cost of these agents is $100,000.

Risks. The factors that can impact the realization of this benefit include:

- The average handling time of interactions before Watson and the complexity of information agents must gather to answer a customer query.

- The accuracy of the information, which is essential for use cases in highly regulated industries. The ability to train and improve chatbot accuracy can vary based on the experience of the conversation analysts, data scientists, and machine learning engineers on an organization's team.

- The fully burdened cost of agents, which will vary across different industries.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $2.4 million.

> **Compared to their prior environments, organizations with Watson Assistant are most likely to see revenue increases due to servicing customers more quickly (50%).**
>
> Base: 30 C-level IBM Watson Assistant customers
> Source: A commissioned study conducted by Forrester Consulting on behalf of IBM Watson Assistant, December 2022

Increased Efficiency From Sales Agent Assist

Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Number of internal sales agents	Composite	150	150	150
C2	Performance improvement of sales call interactions with Watson Assistant	Interviews	2%	7%	15%
C3	Impact on agent productivity (avoided future hires)	C1*C2	3.0	10.5	22.5
C4	Fully burdened annual cost of internal sales agent	Composite	$100,000	$100,000	$100,000
Ct	Increased efficiency from sales agent assist	C3*C4	$300,000	$1,050,000	$2,250,000
	Risk adjustment	↓15%			
Ctr	Increased efficiency from sales agent assist (risk-adjusted)		$255,000	$892,500	$1,912,500
	Three-year total: $3,060,000		**Three-year present value: $2,406,311**		

CONVERSATIONAL AI SKILL DEVELOPMENT COST SAVINGS

Evidence and data. From point-solution chatbots developed for specific industries to broader conversational AI platforms, the ability to automate customer service functions and thereby lower costs has been a key objective for organizations in consumer-focused industries ranging from retail to financial services.

Early adopters of prior solutions found them lacking in flexibility and difficult to refine and adapt for new uses. These solutions required significant investment in technical personnel, including ML engineers, data scientists, and application developers, along with the conversational analysts and UX designers required to create new skills. Even with the requisite team in place, skills development was a time-consuming process.

- A VP and executive leader of AI, ML, and analytics for an engineering services firm said of the process of developing conversational AI applications: "A company has to stay on top of changes in conversational AI technology. We utilized in-house expertise, [but] a lot of customers don't have as large an R&D department as us,"

- In terms of maximizing accuracy, the ML engineer and senior conversational analyst for a financial services firm commented, "It came to the point where we needed machine learning experts to configure the platform properly because we were getting to the point where we needed heavy precision with the bot." The interviewee added, "It takes a lot more skill and understanding of the inner science of machine learning to do it properly."

- The ability to use the IBM visual builder low-code/no-code tool enabled developers to create skills more quickly, allowing organizations to shift to more complex applications requiring customized code. Interviewees said that on

average, their teams were 20% more efficient in developing new applications.

- The visual builder tool also enabled organizations to shift some skills-development tasks to nontechnical users. "To make changes with the previous [platform], you had to be a developer," said the chief risk and innovation officer of a financial services firm, adding, "You can use a business analyst to make some of the changes once they understand the architecture and how to do it." They estimated that the organization expects these personnel to constitute up to 40% of the changes.

- "We do have some of our designers, usually the more experienced ones, come and do some simple things [using the Watson visual builder tool]," the ML engineer and senior conversational analyst shared. "When it gets more complex, they call the engineers."

> **"This new [visual builder] interface has made things dramatically easier for us to use and program Watson. It makes us more efficient."**
>
> *Chief risk officer, financial services*

- The head of global insurance for a financial services and insurance provider relayed, "The [visual builder tool] has been used by some teams for use cases that don't require as much customization work." This interviewee estimated that 10% of the use cases across the organization would use the tool for skill creation. For example, Watson Assistant is being used by product managers on websites used by logistics partners. A chatbot is used to easily and accurately enter employee data in order to

provide workers compensation and other insurance services.

Modeling and assumptions. To model this benefit, Forrester makes the following assumptions for the composite organization:

- The composite has eight developers working full time on programming skills on the Watson Assistant platform.

- The team develops 250 skills in Year 1, 125 in Year 2, and 75 in Year 3, as the highest-value and easier tasks are automated first. The team then shifts its focus to processes that require more customized development.

- The fully loaded annual salary of a developer is $135,000.

- The percent impact on conversational AI skill development due to the use of Watson Assistant is 20%.

Risks. The factors that can impact the realization of this benefit include:

- The salary of developers, which varies widely based on skill level.

- The number and complexity of the skills needed by the organization.

- Organizations that have not previously implemented any conversational AI solutions will take longer to experience benefits, as it will require time to acquire internal expertise needed to build and tune chatbots and other applications.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of $510,000.

| Conversational AI Skill Development Cost Savings					
Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Total conversational AI skills developed per year	Composite	250	125	75
D2	Number of developers creating conversational AI skills	Composite	8	8	8
D3	Developer average annual salary (fully burdened)	TEI standard	$135,000	$135,000	$135,000
D4	Total developer costs for creating conversational AI skills	D2*D3	$1,080,000	$1,080,000	$1,080,000
D5	Percent impact due to Watson Assistant	Interviews	20%	20%	20%
Dt	Subtotal: Conversational AI skill development cost savings	D4*D5	$216,000	$216,000	$216,000
	Risk adjustment	↓5%			
Dtr	Conversational AI skill development cost savings (risk-adjusted)		$205,200	$205,200	$205,200
	Three-year total: $615,600		**Three-year present value: $510,302**		

UNQUANTIFIED BENEFITS

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

- **Reduction in development cycle time.** Interviewees noted that the overall time to complete a project decreased when using Watson Assistant as compared to their prior solutions. One reason for the acceleration: putting the capability to implement basic changes in the chatbots — adjusting a question or response that has been programmed, for instance — into the hands of more people. Before, business analysts would make a change request, according to the chief risk and innovation officer of a financial services firm. Now, they said: "It has enabled a more fluid quality assurance process. Instead of waiting for the developer to get back to you and doing that, they can just go do it themselves." The officer noted that there is a learning curve to using the

"Has your organization deployed any new skills within Watson Assistant since the initial deployment?"
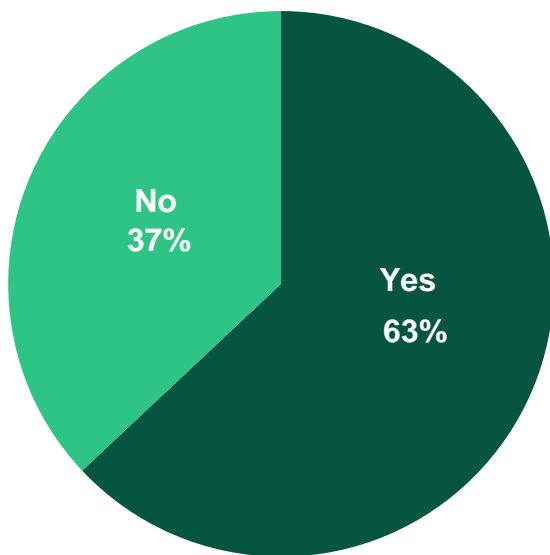
No
37%

Yes
63%

Base: 30 C-level IBM Watson Assistant customers
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM Watson Assistant, December 2022

visual builder tool, but as users learn more, productivity will only increase over time. They noted: "One of the advantages of a low-code interface is you don't have all of that code to write, and subsequently, it's easier to test and it's easier to release because the interface is doing a lot of it for you."

- **Discovering revenue gains from customer service.** The VP of AI for an engineering services firm reported complex interactions (such as chatbot assistance with technical documentation buried in large product manuals) were accurately handled up to 70% of the time, while accuracy on simple queries averaged 98%. With the accuracy in finding relevant documentation, agents had more time to either offer compatible parts or upsell customers to new systems in cases where products or parts were no longer being made.

- **Increased customer satisfaction.** More than 60% of survey respondents said they experienced an increase in customer satisfaction scores due to their investment in Watson Assistant; 10 of 30 respondents experienced a 20% or larger increase in their customer satisfaction scores.[9] Forrester research shows that a 1-point improvement in a company's CX Index score can result in average incremental revenue of $7.59 per customer of a multichannel bank, for example.[10]

- **Call center cost savings include real estate and telephony infrastructure costs.** The head of insurance for a company in the financial services industry said: "The bigger cost reductions are actually around some of overhead of an office. Anything from desks and chairs to real estate space to screens to computers, a lot of that cost is getting done away with — those are some of your big cost decreases." Because fewer calls are being handled by agents, retirement of telephony systems and associated network connections are another cost savings

benefit; 57% of survey respondents cited retirement of customer services infrastructure as a benefit from their Watson Assistant.[11]

- **Greater volumes of interactions without additional hiring.** The ML engineer and senior conversational analyst for a financial services company estimated that it would need to have 60 to 70 people doing chats using the prior solutions. However, since implementing Watson Assistant, they said, "We haven't hired above 30 customer service agents." The organization's customer service unit, aided by chatbots, responds to upward of 60,000 interactions per month.

- **Improvement to employee retention.** By decreasing repetitive tasks and providing technology that makes a call center agent's life easier, interviewees and survey respondents noted higher employee engagement and job satisfaction. The same held true for developers, who were able to move on to more technically challenging projects after using the visual builder interface for skills development.

FLEXIBILITY

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

- **Leveraging chatbots in manufacturing quality assurance.** A semiconductor production line uses expensive machines to make processors; multiple processors are manufactured on a single wafer. Minute defects in manufacturing can result in significant costs but testing each wafer after production is time-consuming and impractical. The engineering services firm used Watson Assistant to take data from multiple systems and provide alerts when an algorithm predicted manufacturing processes were not meeting quality standards, according to the firm's VP and executive leader of AI, ML, and analytics.

- **Augmenting staffing for peak customer service requests.** The chief risk and innovation officer for a financial services firm explained that the company provides outsourced services to clients in a variety of industries. When a new account is signed, there is a challenge in trying to hire and train staff quickly enough. They explained: "Sometimes with a new account, we could have a half a million customers who potentially could be calling us in. We don't have notice of those accounts coming in. What do you do? You can't hire and train people that quickly to staff for that demand. And the following month, you might only get 100,000 calls." Using Watson Assistant to respond to voice calls has enabled the company to meet these demand peaks.

- **Repurposing call center agents into new roles.** The call center industry is notorious for its high rates of employee turnover. Offering a career path into roles other than management can be a tool to help reduce employee churn and reduce training costs. Chatbot training can serve as a new pathway that employers can offer agents. Three-quarters of survey respondents' organizations have repurposed agents into new roles that help train/maintain Watson Assistant.

- **Integrating with other IBM products to further automate workflows.** Products such as IBM Cloud Pak for Data (analytics) and IBM Voice Gateway (for connecting Watson Assistant to a public or private telephone network) are used to build IVR systems with conversational AI assistants. Additional integrations with Watson Discovery provide the ability to search enterprise and other data sources for information and display via the chatbot.

Having deployed Watson Assistant chatbots predominantly on websites, more than two-thirds of survey respondents said they intend to implement Watson Speech/Voice Gateway as a

next phase, and more than half intend to implement Watson Discovery.[12]

- **Choosing how and where Watson is deployed.** While most customers use the IBM Cloud to host Watson Assistant, they have the option to host on any major cloud player, like Google Cloud Platform, AWS, and Azure, or in an on-premises environment.

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	IBM Watson Assistant license fees	$0	$621,000	$621,000	$776,250	$2,018,250	$1,660,977
Ftr	Conversation analysts	$0	$715,000	$1,001,000	$1,430,000	$3,146,000	$2,551,653
Gtr	Business analysts using Watson Assistant low-code interface	$0	$233,750	$467,500	$935,000	$1,636,250	$1,301,343
Htr	Application and QA engineers	$0	$93,150	$72,450	$72,450	$238,050	$198,991
Itr	Professional services	$385,000	$126,500	$77,000	$77,000	$665,500	$621,488
	Total costs (risk-adjusted)	$385,000	$1,789,400	$2,238,950	$3,290,700	$7,704,050	$6,334,452

IBM WATSON ASSISTANT LICENSE FEES

Evidence and data. Pricing models for prior conversational AI solutions were based on variables such as the number of call center agents and how many concurrent calls are being handled. In many cases, vendors used API-based pricing, which meant that changes on customer interaction volume could lead to unpredictable costs, especially in complex systems where the chatbot pulls data from multiple applications such as CRM, search, and analytics.

IBM prices Watson Assistant by monthly active users (MAU), meaning clients pay for each unique user. These users might visit a website or mobile application before making a voice call; with this licensing model, the client is paying for one user in each month.

There are three standard tiers offered: Lite, Plus, and Enterprise. Descriptions of each tier can be found at https://www.ibm.com/cloud/watson-assistant/pricing/.

Modeling and assumptions. Based on the interviews, Forrester estimates the following for the composite organization:

- The composite uses the Standard plan.

- The licensing fee does not include integration with other IBM services such as Watson Discovery.

- Of the 9 million interactions per year, Watson Assistant handles 50%, 60%, and 75% of interactions in Years 1, 2, and 3, respectively.

- The composite pays an average of $0.11 per interaction across both digital and voice channels.

Risks. The licensing costs can vary based on factors such as:

- The number of use cases and interactions.

- The number of concurrent users.

- Data protection and application uptime requirements.

Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of $1.7 million.

IBM Watson Assistant License Fees

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Interactions per year — all use cases	Composite		9,000,000	9,000,000	9,000,000
E2	Interactions per year handled by IBM Watson Assistant	Composite		50%	60%	75%
Et	IBM Watson Assistant license fees	Interviews		$540,000	$540,000	$675,000
	Risk adjustment	↑15%				
Etr	IBM Watson Assistant license fees (risk-adjusted)		$0	$621,000	$621,000	$776,250
	Three-year total: $2,018,250			**Three-year present value: $1,660,977**		

CONVERSATION ANALYSTS

Evidence and data. Conversation analysts are tasked with ongoing response improvements and exploring new use cases for Watson.

Modeling and assumptions. As Watson Assistant expands to new product areas or use cases, the number of conversation analysts also increases. To capture the customer experiences for the composite organization, Forrester assumes:

- In the first year, the composite organization employs five conversation analysts.

- The organization increases the number of conversation analysts to 7 in Year 2 and 10 in Year 3 to account for the continued expansion of use cases deployed by the composite.

- The fully burdened annual cost of a conversation analyst is $130,000.

Risks. There are a number of factors that can impact the cost of conversation analysts. These factors include:

- The availability and experience level of conversation analysts in a given industry can impact salaries.

- Some organizations may choose to hire conversation analysts prior to the deployment of conversational AI platforms, while others will leverage third party professional services such as those provided by IBM to quickly ramp up their projects.

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

	Conversation Analysts						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
F1	Number of conversation analysts	Interviews	0	5	7	10
F2	Fully burdened annual salary of conversation analyst	TEI standard	$130,000	$130,000	$130,000	$130,000
Ft	Conversation analysts	F1*F2	$0	$650,000	$910,000	$1,300,000
	Risk adjustment	↑10%				
Ftr	Conversation analysts (risk-adjusted)		$0	$715,000	$1,001,000	$1,430,000
	Three-year total: $3,146,000			**Three-year present value: $2,551,653**			

BUSINESS ANALYSTS USING WATSON ASSISTANT LOW-CODE INTERFACE

Evidence and data. One of the benefits of Watson Assistant is the ability to use a low-code interface to create new chatbot skills.

- The chief risk and innovation officer for a financial services company explained that feature requests and bug fixes are being developed and implemented on at least a weekly basis at their company. The interviewee stated, "With the new interface, business analysts are able to make some of the features and fixes that only developers were able to do before," adding that over time, these employees would be able to make 30% or 40% of the changes to the more than 250 chatbots they have deployed.

- Three-quarters of respondent organizations have repurposed agents into new roles that help train and maintain Watson Assistant, according to the survey.[13]

Modeling and assumptions. To account for costs associated with the use of nontechnical employees, Forrester assumes:

- The composite organization increases the number of business analysts using the low-code interface over time as the organization gains experience with Watson Assistant and trains employees in the use of the platform. The composite has 10, 20, and 40 business analysts using the interface in Years 1, 2, and 3, respectively.

- The fully burdened annual cost of a business analyst is $85,000.

- Each business analyst spends 25% of their time using the Watson Assistant low-code interface for skills development and bug fixes.

Risks. Factors that can impact the cost of business analysts include the following:

- The salary of business analysts in a given industry can vary based on availability and experience level.

- Organizations may decide to assign skills development to other lower-cost resources such as call center agents.

- Organizations may use a different number of nontechnical employees based on the complexity of use cases or other factors such as security and regulatory compliance.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $1.3 million.

Business Analysts Using Watson Assistant Low-Code Interface						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
G1	Number of business analysts using low-code interface			10	20	40
G2	Fully burdened salary			$85,000	$85,000	$85,000
G3	Percent of time doing low-code development			25%	25%	25%
Gt	Business analysts using Watson Assistant low-code interface	G1*G2*G3	$0	$212,500	$425,000	$850,000
	Risk adjustment	↑10%				
Gtr	Business analysts using Watson Assistant low-code interface (risk-adjusted)		$0	$233,750	$467,500	$935,000
	Three-year total: $1,636,250			Three-year present value: $1,301,343		

APPLICATION AND QA ENGINEERS

Evidence and data. Customers incurred indirect costs for internal labor to deploy the Watson Assistant use cases. The first use case deployed required an average of four months of implementation. Each subsequent use case (or "workflow") deployed took less time than previous iterations. Application and QA engineers were engaged to assure that chatbots and other applications ran as intended and did not interfere with other applications in the organization's environment.

Average time to develop a new skill for Watson Assistant in Year 1:

<4 months

Modeling and assumptions. To account for the cost of application and QA engineers, Forrester assumes the following:

- The first implementation takes three months, a secondary use case implementation takes two months, and further use case expansion takes two months or less.

- For each workflow implementation in Year 1, six application and QA engineers spend approximately 40% of their time on the Watson Assistant deployment.

- The fully burdened monthly salary of application and QA engineers is $11,250.

- The organization has seven application and QA engineers who spend 40% of their time on the Watson Assistant deployment in Years 2 and 3.

Risks. Internal labor costs for implementation will vary by organization based on several factors, including the following:

- The experience level of existing AI and ML engineers, data scientists, developers, and UX designers who are also involved in the development process.

- The number and complexity of workflows implemented.

- The quality of applications developed by nontechnical employees.

Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of $199,000.

Application And QA Engineers						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
H1	Initial workflow implementation (months)	Interviews	0	3	2	2
H2	Number of application and QA engineers (skills programming)	Interviews	0	6	7	7
H3	Application and QA engineers dedicated time	Composite	40%	40%	40%	40%
H4	Monthly salary of application and QA engineers (fully burdened)	Composite	$11,250	$11,250	$11,250	$11,250
Ht	Application and QA engineers	H1*H2*H3*H4	$0	$81,000	$63,000	$63,000
	Risk adjustment	↑15%				
Htr	Application and QA engineers (risk-adjusted)		$0	$93,150	$72,450	$72,450
	Three-year total: $238,050			**Three-year present value: $198,991**		

PROFESSIONAL SERVICES

Evidence and data. Customers utilized the professional services of IBM both for implementation and ongoing support. Interviewees and survey respondents indicated that they spent less on professional services to implement IBM Watson Assistant than they had on their prior solutions. Some attributed this to the platform's visual builder tool, which includes a number of basic, prebuilt skills.

Modeling and assumptions. Based on the interviews, Forrester estimates the following for the composite organization:

- The composite has familiarity with chatbots and conversational AI skills development. To become familiar with the IBM Watson Assistant environment and quickly ramp up use case deployment, the composite engages IBM for professional services in the initial (preproduction) phase of deployment.

- The composite engages with IBM for ongoing professional services in Years 1 through 3 (postdeployment), which focus on technical support for new applications.

- For Years 2 and 3, the composite spends on educational services, including "train the trainer"

services, as it engages more nontechnical personnel in the development process.

Risks. There are factors that can impact the professional services costs an organization will incur, including the following:

- The maturity of an organization's application development process, which also includes familiarity with conversational AI platforms and chatbot development. Organizations beginning their use of these technologies may consider increasing the use of professional services to achieve benefits more quickly.

- The complexity and number of use cases that the organization is addressing, including regulatory and compliance issues in industries such as financial services and healthcare, can also impact the need for professional services.

- Organizations may choose to spend more on educational services, depending on how extensive their plans for deploying the visual builder tool for use by nontechnical personnel.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $621,000.

Professional Services						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
I1	Initial professional services for implementation	Interviews	$300,000			
I2	Ongoing professional services	Interviews		$105,000	$60,000	$60,000
I3	Educational services	Interviews	$50,000	$10,000	$10,000	$10,000
It	Professional services	I1+I2+I3	$350,000	$115,000	$70,000	$70,000
	Risk adjustment	↑10%				
Itr	Professional services (risk-adjusted)		$385,000	$126,500	$77,000	$77,000
Three-year total: $665,500			**Three-year present value: $621,488**			

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

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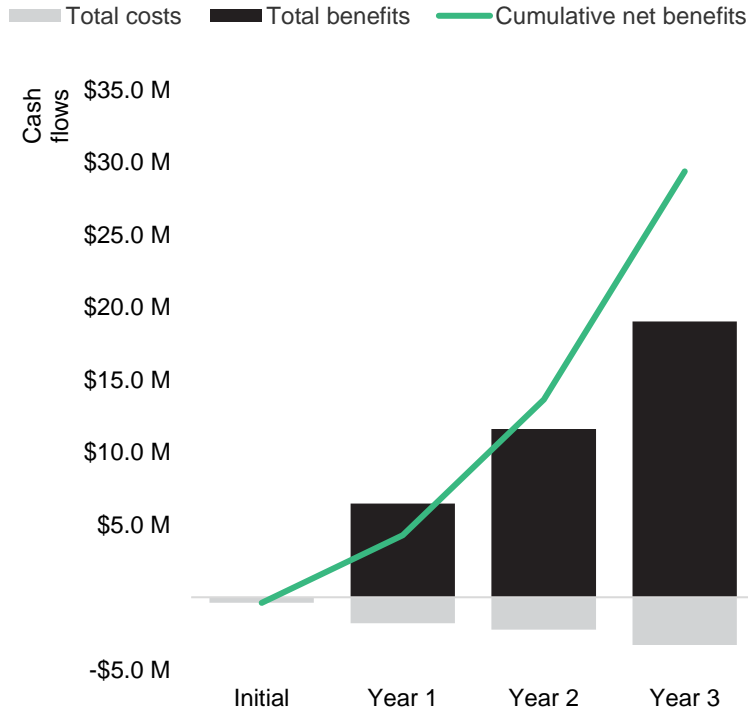
The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

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	($385,000)	($1,789,400)	($2,238,950)	($3,290,700)	($7,704,050)	($6,334,452)
Total benefits	$0	$6,457,800	$11,601,150	$19,020,375	$37,079,325	$29,748,744
Net benefits	($385,000)	$4,668,400	$9,362,200	$15,729,675	$29,375,275	$23,414,292
ROI						370%
Payback period (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] Source: "The Forrester New Wave™: Conversational Computing Platforms, Q2 2018," Forrester Research, Inc., April 12, 2018.

[2] 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.

[3] Source: "How To Build A Modern Agent Desktop And Transform Customer Service Experiences," Forrester Research, Inc., January 28, 2019.

[4] Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, November 2022.

[5] Source: "Five Methods For Measuring Call Deflection From Experiences That Begin With Digital," Forrester Research, Inc., March 5, 2018.

[6] Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, December 2022.

[7] Net Promoter, NPS, and the NPS-related emoticons are registered U.S. trademarks, and Net Promoter Score and Net Promoter System are service marks, of Bain & Company, Inc., Satmetrix Systems, Inc. and Fred Reichheld.

[8] Source: "Five Methods For Measuring Call Deflection From Experiences That Begin With Digital," Forrester Research, Inc., March 5, 2018.

[9] Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, December 2022.

[10] Source: "How Customer Experience Drives Business Growth, 2022" Forrester Research, Inc., June 6, 2022.

[11] Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, December 2022.

[12] Ibid.

[13] Ibid.