A Forrester New Technology: Projected Total Economic Impact™ Study
Commissioned By Google
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New Technology: The Projected Total Economic Impact™ Of Google Cloud Contact Center AI

Cost Savings And Business Benefits Enabled By Contact Center AI, An Integrated Solution To Use Artificial Intelligence In Your Contact Center

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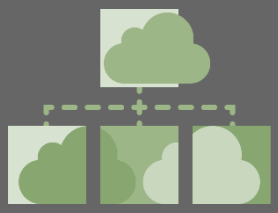
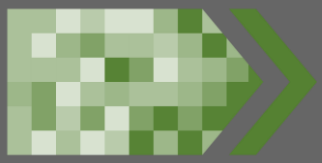
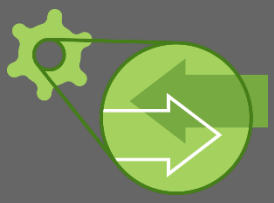
Key Benefits



Calls deflected away from agents:
20% to 35%



Contact center agent productivity gains through reduced average call times:
$1.3 million to $3.7 million



Reduced effort to manage contact center solution:
Up to 75%

Executive Summary

According to Forrester Research, customers expect easy and effective customer service that builds positive emotional connections every time they interact with a brand or organization. Additionally, 40% of surveyed business leaders say that improving their organization's customer experience (CX) is a high priority, ahead of initiatives like improving products and differentiation and reducing costs.[1] While this is a huge opportunity, improving CX in contact centers presents a significant challenge to organizations because most legacy interactive voice response (IVR) systems were never designed with CX in mind, and they are often left unchanged for years at a time except for the addition of more options when a new product or service is launched.

Providing great CX is a top priority for most organizations, but because contact centers typically operate 24/7, decision makers are hesitant to make significant changes or upgrades out of fear of breaking their already overtaxed systems. This paradox has left many organizations to rely on outdated or bloated IVR systems far too long. And with constantly rising customer expectations around service and support, these organizations are falling further and further behind competitors that are investing in next-generation solutions.

Google Cloud Contact Center Artificial Intelligence (CCAI) provides a cloud-based platform that leverages Google Cloud's artificial intelligence (AI) and machine learning (ML) capabilities, including natural language processing and speech capabilities to augment, support, and assist contact center agents, and to deploy voice bots and chatbots that can naturally converse with customers to understand their intent and help resolve their calls with minimal intervention from an agent. CCAI also has the ability to tie into an organization's back-end data to enable bots to perform higher-value tasks, identify and authenticate customers, and augment agent desktops to provide relevant information and turn-by-turn guidance through different scenarios. Google commissioned Forrester Consulting to conduct a New Technology: Projected Total Economic Impact™ (New Tech TEI) study and examine the projected return on investment (PROI) enterprises may realize by deploying CCAI.

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of CCAI on their organizations. To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five customers and additional partners with experience using Google Cloud CCAI.

CCAI Interviewed Customers: Prior State

Prior to using CCAI, the interviewed organizations were using a mix of online forms, traditional IVRs, and limited digital chat capabilities. However, the organizations reported challenges such as:

- High volumes of unnecessary calls reaching contact center agents.
- Labor-intensive management practices that caused inconsistency in customer experience with traditional IVRs.
- Overall poor CX when interacting through current available channels.

The interviewed organizations decided to deploy Google Cloud CCAI because it addresses these challenges within a single platform and leverages cutting-edge technologies like AI and ML to satisfy customers

without leveraging a human agent.

This move provided significant potential by:

- Reducing the number of contacts that reaching agents by increasing deflection and containment.
- Improving agent efficiency with augmented technology and predictive analytics.
- Improving CX and agent experience by reducing the burden on agents so they can focus on addressing each customer's specific request or need.

To estimate the projected total economic impact of CCAI, Forrester developed a composite organization based on the experiences of the five interviewed companies. The composite company is a global organization with $5 billion in annual revenue and 1,200 contact center agents, and it has deployed solutions in two functional areas of CCAI: use of Virtual Agent and Agent Assist.

Furthermore, we assumed for the sake of analysis that the composite organization has deployed solutions in both functional areas of CCAI (even though most customers will start with one solution and phase in its deployment over time), stretching the actual benefits and costs over a longer period of time.

All values are reported in risk-adjusted three-year present value (PV) unless otherwise indicated.

PROI
103% to 291%

Benefits PV
$12.3 million to $23.7 million

NPV
$6.2 million to $17.6 million

> "CCAI has the best opportunity to find ways to radically reduce leakage of what should have been handled in the self-service environment more than any technology I have seen. . . . I think it actually makes it a game changer."
>
> *CTO, financial services*

Key Financial Findings

Quantified projected benefits. The following benefits reflect the financial analysis associated with the composite organization.

- **Call deflection totaling $8.1 million to $14.3 million.** With CCAI, the interviewed organizations were able to deflect more calls away from agents and towards self-service channels and bots.
- **Chat deflection totaling $1.3 million to $2.4 million.** Similar to call deflection, CCAI helped the organizations deflect chats away from agents and instead send them to self-service channels and bots.
- **Efficiency gains for contact center agents totaling $1.3 million to $3.7 million.** With natural language processing, CCAI understands and transcribes call, which reduced the amount of data agents were required to enter, improved comprehension, and enabled more advanced capabilities like cross-channel communication and predictive analytics.
- **Management efficiencies totaling $1.1 million to $2.3 million.** CCAI eliminated the need to manage and update legacy IVR systems and reduced the amount of time and effort needed to roll out new capabilities or provide services to a new product.
- **Reduced agent churn totaling $447,633 to $1 million.** Agents now only deal with the most critical and high-value calls, and they have the tools and technology needed to properly serve any incoming call or request, improving the day-to-day experience and reducing training and recruiting costs for the organization.

Unquantified benefits. The interviewed organizations experienced the following benefits, which are not quantified for this study:

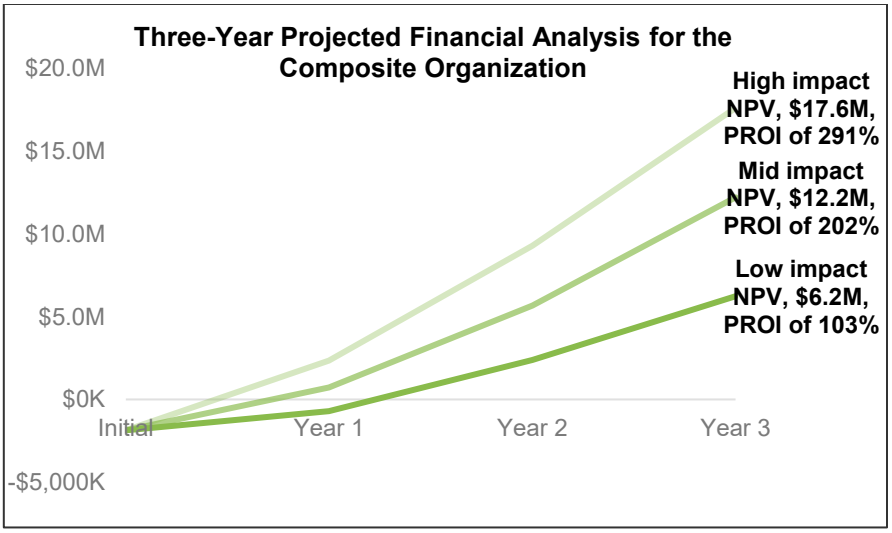
- **Improved CX.** While not specifically quantified in the model, each of the interviewed organizations experienced an improvement in CX as a result of its CCAI investment by eliminating IVRs, improving functionality in both voice and digital channels, and retaining data across interactions to more easily get up to speed with repeat callers or ongoing issues.

Costs. The following costs reflect the financial analysis associated with the composite organization.

- **Internal labor to develop, test, and deploy CCAI totaling $2.9 million over three years.** Before deploying CCAI to their contact centers, the interviewed organizations performed significant testing and development to ensure customers would have a good experience and agents would have all the tools they needed to be successful. Because this technology is constantly evolving, organizations can continuously improve the experience and add new capabilities.
- **Training costs totaling $325,080.** All existing agents and internal engineers need to be trained-up on CCAI so they can take advantage of all the platform has to offer.
- **Licensing costs to contact center partners totaling $2.9 million over three years. The o**rganizations paid annual license costs for CCAI to their contact center partners.

Forrester modeled a range of projected low-, medium-, and high-impact outcomes based on evaluated risk factors. This financial analysis projects that the composite organization accrues the following three-year net present value (NPV) and PROI for each scenario by investing in CCAI:

- Projected high impact of a $17.6 million NPV and a 291% PROI.
- Projected medium impact of a $12.2 million NPV and a 203% PROI.
- Projected low impact of a $6.2 million NPV and an 103% PROI.



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The New Tech TEI methodology helps companies demonstrate and justify the projected tangible value of technology initiatives to both senior management and other key business stakeholders.

New Tech TEI Framework And Methodology

From the information provided in the interviews, Forrester has constructed a New Technology: Projected Total Economic Impact™ (New Tech TEI) framework for those organizations considering implementing Google Cloud CCAI.

The objective of the framework is to identify the potential cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the projected impact that Google Cloud CCAI may have on an organization:

DUE DILIGENCE
Interviewed Google Cloud stakeholders and Forrester analysts to gather data relative to CCAI.

EARLY-IMPLEMENTATION CUSTOMER INTERVIEWS
Interviewed five organizations using CCAI in a pilot or beta stage and two telephony partners that offer CCAI to obtain data with respect to projected costs, benefits, and risks.

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

PROJECTED FINANCIAL MODEL FRAMEWORK
Constructed a financial model projection representative of the interviews using the New Tech TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.

CASE STUDY
Employed four fundamental elements of New Tech TEI in modeling Google Cloud CCAI's potential impact: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to project a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the New Tech TEI methodology.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Google 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 report to determine the appropriateness of an investment in Google Cloud CCAI.

Google 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.

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

The CCAI Customer Journey

BEFORE AND AFTER THE CCAI INVESTMENT

Interviewed Organizations

For this study, Forrester conducted five interviews with Google Cloud CCAI customers. Interviewed customers include the following:

INDUSTRY	REGION	INTERVIEWEE	NUMBER OF AGENTS	ANNUAL REVENUE
Retail	Global	Enterprise architect	1,200	$12B
Financial Services	Global	Chief technology officer	4,000	$4B
Financial Services	Europe	Head of digital strategy	1,200	$4B
Government	UK	Data intelligence team	70	N/A
Mobile Application	Global	Head of conversational AI	N/A	$14B

Key Challenges Before Google Cloud CCAI

Before the investment in CCAI, interviewees described the following challenges for their organization:

- **Poor CX.** Interviewees described several issues associated with their organization's legacy IVR solutions that negatively impacted the experience of their customers. These issues include long and unskippable preambles, vague or confusing extension names, lack of cross-channel functionality, siloed capabilities, and a general lack of urgency in understanding and resolving the needs of the customer. Interviewees said their organizations understand the importance of CX and saw using the contact center (and implementing CCAI specifically) as a way to substantially improve both CX and the perception of their brand in the market.

  A data officer in government said: "Before CCAI, even if you had a basic question like, 'Where is my nearest printer?', it could take up to three days to get a response. The idea was that these questions should be answered right away."

  A CTO in the financial services industry said: "Our previous solution did the basic job, but I wouldn't say we went out of our way to make the experience pleasant or expedient. For example, it was very difficult to authenticate customers. And if there was a transfer, customers had to reauthenticate, which sometimes would be unsuccessful, so they would have to call back."

- **Outdated technology that did not meet needs.** Interviewees said their organizations struggled to keep up with rising customer expectations around service and support capabilities.

  A CTO in the financial services industry said: "We did not have chat functionality. We had very limited self-service capability in place. We had very limited functionality with the previous solution. We wanted to improve routing capabilities, to increase self-service dramatically, and to provide an omnichannel environment so people could start in chat, get on the phone, and continue that conversation seamlessly all the way through."

> "The goals going into this were to improved customer satisfaction scores, to increase the usage of self-service, and to reduce the technical sprawl of legacy infrastructure that we had. Those were fundamentally the three things we were trying to do."
>
> *CTO, financial services*

An enterprise architect in retail said: "One of the key challenges is that we had two distinct platforms. In the old world, if a customer called the store number, they were stuck in the store world, and that system could not place orders. So if a customer said, 'I came into the store yesterday, I saw this shirt, and I want to buy it,' the agent would have had to transfer them to the call center. It was confusing, time-consuming, and not a great experience for our customers or our agents."

- **Too much effort to manage and run the legacy solution.** Interviewees described two key challenges associated with managing legacy solutions: the manpower required to field all the incoming contacts and the labor required to operate and maintain legacy IVR solutions.

  An enterprise architect in the retail industry said: "There were 150 colleagues there just to answer calls. They would have been much better utilized being in the shopfront and dealing with customers rather than being in a room somewhere in the background. It was not a good use of resources whatsoever."

  A CTO in the financial services industry said: "In a CCAI world, I don't have to go rerecord a call flow. I don't have to go change my tree because of some new event that is going on. The system self-adapts and self-regulates, and it's really quite good at getting to the intent of the caller in a very natural way."

"Our organizational goal was to become the world's most friendly [financial services company]. We wanted to put our best foot forward and become more proactive with customers to help people live their financial best. And CCAI is setting us up to do that."

CTO, financial services

Why Customers Choose CCAI

Interviewees stated the following reasons their organizations chose to leverage CCAI in their contact centers:

- **Google understands the technology, and its support team helps customers achieve their goals.** Interviewees were impressed by Google's understanding of what it takes to build a successful digital agent and its willingness to work with customers to achieve their goals. A CTO in the financial services industry said: "Google did its best to keep pushing and guiding us, and it really helped. In the early stages, we went back and forth a lot because we were used to the IVR world. The Google team would say, 'We looked through what you are trying to do, and you are not there yet. You're still being too fine-grained or too prescriptive.' That actually helped our team shift its mindset."
- **CCAI is intuitive, easy to use, and available through trusted partners.** The interviewed organizations were looking for a solution that their existing teams could use without relying on a support team or a small number of experts. Additionally, decision makers were happy that CCAI was available through their current telephony partners, allowing them to leverage their current relationships and infrastructures. A data officer in government explained: "We looked at a few solutions and quickly settled on [CCAI] because it seemed very easy to use. We have people who don't do much coding, so we needed a solution that was fairly simple to use and wouldn't require as much developer time."

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Data officer, government

- **Google has an extensive knowledge base, training data, and an understanding of dialects and languages.** The interviewed organizations recognized that Google, through its various products and solutions, can leverage vast amounts of data in many different languages and dialects to train the natural language understanding. Most of the organizations started with English and plan to expand to other languages. One interviewee said their organization primarily operates in Spanish. A head of digital strategy in the financial services industry said: "The easy management of [Google] Dialogflow, the advanced technology for both voice and text recognition in Spanish, and the cost of the technology were the primary reasons we went with Google [Cloud]'s CCAI solution. Google was the obvious choice in 2018, and I would say it still is today."

  A CTO in the financial services industry said: "The richness of Google's training data from around the world with the amount of different languages and dialects it hears gives [Google] a head start, and we are hopeful that we will see the same level of efficiency gains regardless of language and dialect once we roll those out."

> "The bot acts as sort of a personal assistant for our customers, helping them to select the correct form and then answering questions in a conversational way as they go along. It has really improved the customer experience, and it has also reduced the number of rejected or incomplete forms we are receiving."
>
> *Data officer, government*

Key Projected Results With Google Cloud CCAI

Our interviews indicated that clients invested in CCAI to address the challenges previously identified, and were seeing early benefits indications in three areas:

- **Improved CX.** Interviewees said a primary goal of the CCAI investment was to improve CX, and this manifested itself in a few different ways. First and foremost, the organizations were able to remove their legacy IVRs so customers calling in could state the intent of their call in their natural voice without listening to an options tree. That's an immediate and positive impact to CX. Beyond eliminating the IVR, the organizations were able to achieve improvements in other areas. They reduced transfers and redirects, retained information from previous sessions or other channels to provide a seamless experience, enabled functionality through the chatbot and digital channels, and reduced the overall time that customers spend on the phone or on a digital channel with agents.

  A CTO in the financial services industry said: "Our organizational goal was to become the world's most friendly [financial services company]. We wanted to put our best foot forward and become more proactive with customers to help people live their financial best. And CCAI is setting us up to do that."

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  A head of digital strategy in the financial services industry said: "CCAI has been a differentiator for us. Very few companies in our region have these capabilities, and if our customers want something, we can give a response in real time within seconds. Things that used to require a lengthy phone call can now be done easily through digital channels. And if the customer needs to speak to someone, we can connect them to an agent seamlessly and retain all the information already shared in the chat."

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>
> *Head of digital strategy, financial services*

- **Reduced costs, improved productivity, and resources redeployed to higher-value roles.** Interviewed organizations had multiple IVR solutions in place prior to adoption CCAI, and each IVR required maintenance and support to run and stay current. After moving to CCAI, the organizations were able to consolidate those teams, redeploy resources to higher-value roles, and improve the overall accuracy and consistency of the experience for customers.

  A CTO in the financial service industry said: "We are going from 22 IVRs to one, which means [we are going from] 22 teams down to one team. It also means that even with that one team, I don't need 22 people to focus on every region around the world because it all rolls up to a centralized place."

  An enterprise architect in the retail industry was able to redeploy resources to higher-value tasks. They said: "All the usual contact center operational stuff went away. Recording prompts, opening hours, stuff like that was not needed anymore. The people who were doing these jobs are now trained to work with tools like Dialogflow. For instance, if we plan to start a new sale at Christmas, this team will create the new intent or modify the existing module to get ready for that event. Previously, this work would be done by a third party and take four to seven weeks and involve more people. Now, we can handle all these changes internally in a day or two. It completely changes the way that we are managing day-to-day operations of our contact centers."

- **Improved agent efficiency.** With CCAI, contact center agents have the tools and technology they need to better serve each customer they interact with. Agents now have contextual product and customer data automatically populate their screens when speaking to customers, which reduces search and hold times, and CCAI's natural language voice recognition automatically captures a caller's reason for calling, their account number, and any other relevant information so the agent can focus on solving the issue at hand.

  An enterprise architect in the retail industry said: "We have removed the need for an agent to enter the reason for a call, and it has saved about 10 seconds on every call. Instead of the agent asking and manually entering the reason, which didn't always happen, the system automatically transcribes the call, maps to a particular intent, and populates the field for them with a high level of accuracy."

  A data officer in government said: "Regardless of who our agents are and how many years of experience they have, they all benefit from CCAI. Newer agents are now able to ramp up faster, and they are more comfortable handling more complex situations because the technology is listening and proactively pulls relevant information for the agent."

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Enterprise architect, retail

Composite Organization

Forrester constructed a composite company to evaluate the projected Total Economic Impact of CCAI. The composite organization was constructed using characteristics of the five interviewed CCAI customer companies. The composite organization:

- Is a global enterprise with $5 billion in annual revenue and 1,200 contact center agents including voice and chat.
- Has five separate contact centers in different regions.
- Previously had 10 distinct IVRs in place to serve different regions.
- Did not have any cross-channel or cross-platform functionality in its contact centers and had limited self-service capabilities for customers.

Note that in order to model a complete benefits picture, the composite organization has deployed Virtual Agent with Dialogflow, and Agent Assist through CCAI and is in the process of leveraging Insights capabilities. Many customers will start with solution and phase in deployment over time, which will spread benefits and costs over a longer period of time.

Key assumptions

- $5 billion annual revenue
- 1,200 contact center agents
- 10 IVRs before CCAI

Risk Treatment For Benefits And Costs Projections

Projection-based financial modeling inherently introduces more risk than analyzing actual, realized impacts. Forrester's New Technology: Projected TEI methodology therefore incorporates a risk factor to adjust projections.

For benefit calculations, Forrester incorporates risk via a range of projected outcomes based on customer interview data. In the benefit financial models, we've included low, middle, and high estimates for each input variable to create a potential benefit range. We develop these ranges using expected benefits data collected from interviews as well as from our own research into contact center trends and technologies.

Costs are typically consistent and easily estimated by combining interview data with Google-provided license and support costs. We therefore used a simplified approach, adjusting cost upward based on risk to ensure a conservative financial analysis. This is described further in the Analysis Of Projected Costs section.

Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in a range of overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

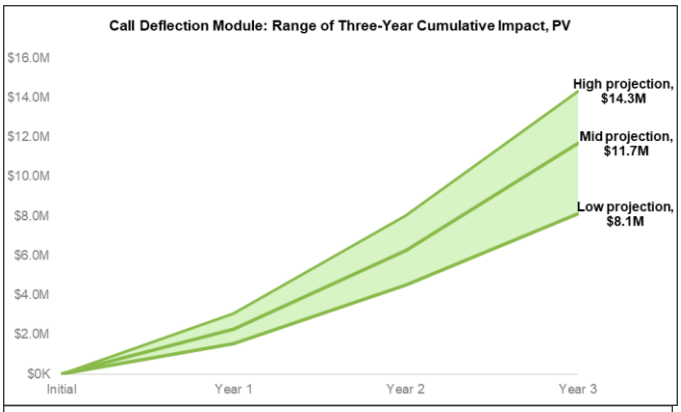
Implementation risk is the risk that a proposed investment may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the higher the potential costs.

Analysis Of Projected Benefits

QUANTIFIED PROJECTED BENEFIT DATA AS APPLIED TO THE COMPOSITE

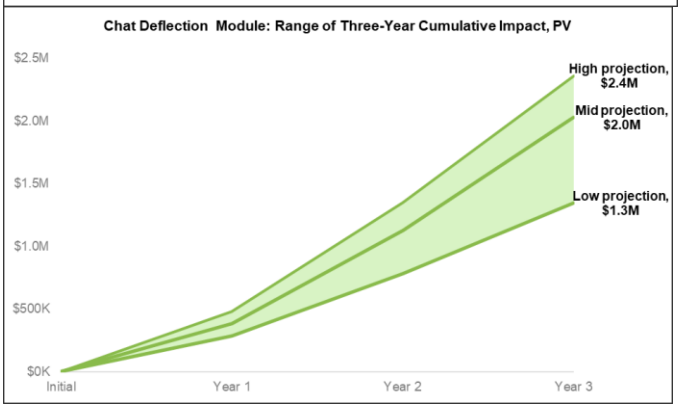
Total Projected Benefits

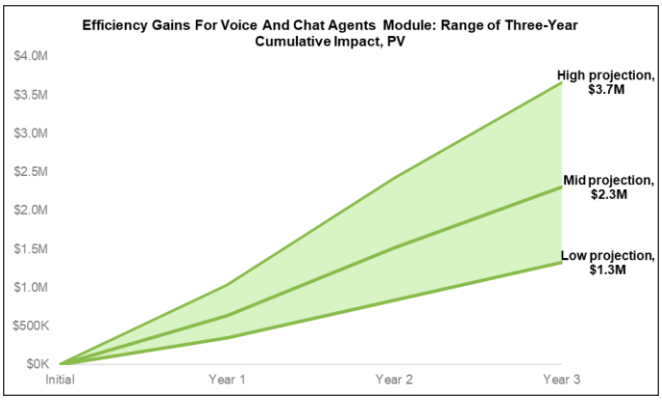
REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total projected benefits (low)		$2,981,983	$5,404,057	$6,801,650	$15,187,690	**$12,287,237**
Total projected benefits (mid)		$4,552,173	$7,666,433	$10,363,760	$22,582,366	**$18,260,682**
Total projected benefits (high)		$6,352,110	$10,066,583	$12,733,250	$29,151,943	**$23,660,814**

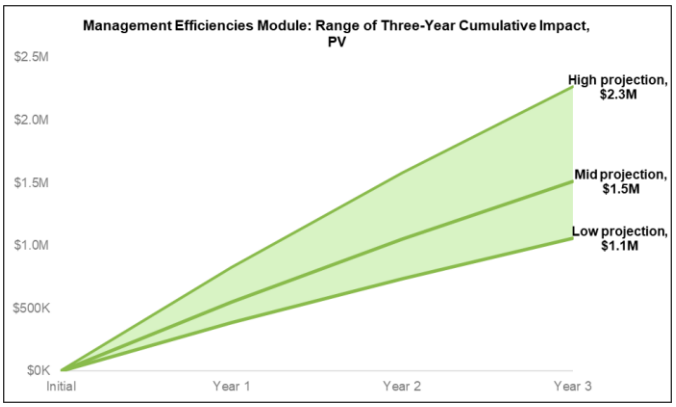


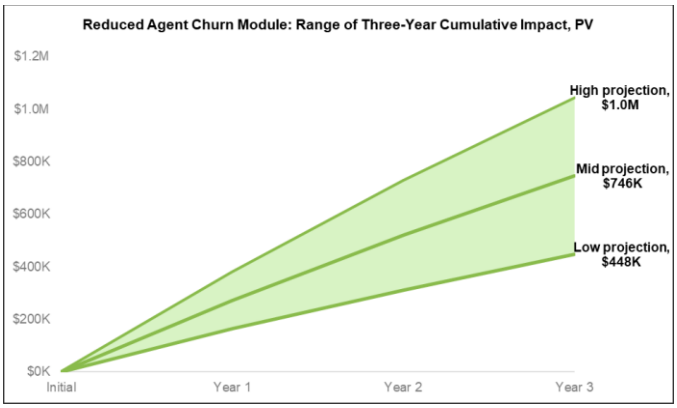
The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to have a projected PV range of $12.3 million to $23.7 million.

The graphs to the left and below show the projection range for each benefit category quantified. Adding these benefits together will result in the total benefits values listed in the table above.









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Call Deflection

Interviewees described the following benefits related to deflecting calls away from agents:

- Before using CCAI, the organizations found that a large percentage of calls that were handled by agents were simple requests that could have been more easily and appropriately handled through self-service or by a chatbot or voice bot. Interviewees described a several reasons for high call volumes including customers bypassing the IVR to speak directly to an agent, a lack of self-service or a poor knowledge base for customers to answer their own questions, confusing or misleading IVR options that caused a large number of transfers, and a general lack in the ability to collect reliable data to improve the experience of their customers.
- With CCAI, customers can state their intent and any other relevant information at the beginning of the call and use it to route to the appropriate channel. Through this, many calls are deflected away from agents and handled by the virtual agent or though self-service. If the call reaches an agent, they can see the information already collected and start addressing the customer's issue immediately, without reauthentication or asking the customer to repeat their issue.
- An enterprise architect in the retail industry said: "When we put the solution in, we found out that 50% of the calls going to the stores were actually meant to go to other places. So we saw an immediate impact to the volume of calls that we received. That was one of the big gains we got from implementing CCAI: Our customers can call one platform and then the platform works out where the customer should be within our world."
- A CTO in the financial services industry said: "Self-service rates were in the high teens before CCAI, and now we are seeing them in the low seventies, so it's been a massive increase. And that is just for a few use cases, so we feel like we're really just putting our toe in the water at this point."

Based on the customer interviews, Forrester modeled the financial impact for the composite organization with the following estimates:

- The composite receives 1 million monthly contacts, which equals 12 million total contacts per year.
- Of those total contacts, 80% are calls (voice) and 20% are through digital channels (chat).
- In Year 1, 70% of all contacts are routed through CCAI, expanding to 100% in Years 2 and 3.
- The average cost per call is $5.
- Fifty percent of the call deflection can be directly attributed to CCAI.

This yields a three-year projected PV ranging from $8.1 million to $14.3 million. The summary table for the low, mid, and high projections is shown below, followed by the detailed calculations for each projection.

Improved call deflection rates:
20% to 35%

Call Deflection: Summary Table						
REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
At_{Low}	Call deflection (low)	$1,680,000	$3,600,000	$4,800,000	$10,080,000	**$8,108,790**
At_{Mid}	Call deflection (mid)	$2,520,000	$4,800,000	$7,200,000	$14,520,000	**$11,667,318**
At_{High}	Call deflection (high)	$3,360,000	$6,000,000	$8,400,000	$17,760,000	**$14,324,267**

Call Deflection: Calculation Table							
Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Total	Present Value
A1	Total contacts	Composite	12,000,000	12,000,000	12,000,000		
A2	Percent calls	Composite	80%	80%	80%		
A3	Percent calls routed through CCAI	Composite	70%	100%	100%		
$A4_{Low}$			10%	15%	20%		
$A4_{Mid}$	Call deflection		15%	20%	30%		
$A4_{High}$			20%	25%	35%		
A5	Average cost per call	Composite	$5.00	$5.00	$5.00		
A6	Direct attribution to CCAI	Composite	50%	50%	50%		
At_{Low}			**$1,680,000**	**$3,600,000**	**$4,800,000**	**$10,080,000**	**$8,108,790**
At_{Mid}	**Call deflection**	**A1*A2*A3*A4*A5*A6**	**$2,520,000**	**$4,800,000**	**$7,200,000**	**$14,520,000**	**$11,667,318**
At_{High}			**$3,360,000**	**$6,000,000**	**$8,400,000**	**$17,760,000**	**$14,324,267**

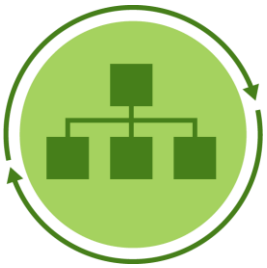
Chat Deflection

Interviewees described the following benefits related to deflecting chats away from agents:

- Similar to with calls, the organizations previously struggled with a high volume of chats that could have otherwise been handled through other means like self-service or a bot. To reduce the volume of chats, the organizations developed chatbots with Dialogflow to help answer questions and execute tasks like checking account balances or updating contact information.
- A head of digital strategy in the insurance industry said: "The virtual assistant is front and center on all of our sites and apps. It is prepared to be the first intervention in all of our channels, and we are building out the capabilities so it can respond to whatever the customers need."
- A data officer in government said, "We are actually reducing call volume by driving people towards web chat where the chatbot can handle most of our customers' requests or questions."

Forrester modeled the financial impact for the composite organization with the following estimates:

- The composite receives 1 million monthly contacts, which equals 12 million total contacts per year.



Improve chat deflection rates:
25% to 45%

- Of those total contacts, 80% are calls (voice) and 20% are through digital channels (chat).
- In Year 1, 70% of all contacts are routed through CCAI, expanding to 100% in Years 2 and 3.
- The average cost per chat is $2.50.
- Fifty percent of the call deflection can be directly attributed to CCAI.

This yields a three-year projected PV ranging from $1.3 million to $2.4 million. The summary table for the low, mid, and high projections is shown below, followed by the detailed calculations for each projection.

Chat Deflection: Summary Table

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Bt_{Low}	Chat deflection (low)	$315,000	$600,000	$750,000	$1,665,000	**$1,345,718**
Bt_{Mid}	Chat deflection (mid)	$420,000	$900,000	$1,200,000	$2,520,000	**$2,027,198**
Bt_{High}	Chat deflection (high)	$525,000	$1,050,000	$1,350,000	$2,925,000	**$2,359,316**

Chat Deflection: Calculation Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Total	Present Value
B1	Total number of inbound contacts (annual)	A1	12,000,000	12,000,000	12,000,000		
B2	Percent digital/chat	1-A2	20%	20%	20%		
B3	Percent contacts routed through CCAI	Composite	70%	100%	100%		
$B4_{Low}$	Total deflection enabled by CCAI (chat)	Interviews	15%	20%	25%		
$B4_{Mid}$			20%	30%	40%		
$B4_{High}$			25%	35%	45%		
B5	Average cost per chat with agent interaction	Composite	$2.50	$2.50	$2.50		
B6	Direct attribution to CCAI	Composite	50%	50%	50%		
Bt_{Low}	**Chat deflection**	**B1*B2*B3*B4*B5*B6**	**$315,000**	**$600,000**	**$750,000**	**$1,665,000**	**$1,345,718**
Bt_{Mid}			**$420,000**	**$900,000**	**$1,200,000**	**$2,520,000**	**$2,027,198**
Bt_{High}			**$525,000**	**$1,050,000**	**$1,350,000**	**$2,925,000**	**$2,359,316**

Efficiency Gains For Voice And Chat Agents

Interviewees described the following benefits related to reducing the average handle time for calls:

- Prior to using CCAI, agents relied on their ability to accurately listen to and transcribe what customers said to validate account numbers, answer security questions, understand customer requests. This was challenging and unreliable and often led to lengthy calls, frustrated customers, and in some cases, the inability to properly record a call or authenticate a customer.

- With CCAI, natural language processing can understand and transcribe the call in real time and populate critical fields for the agent and accurately capture relevant information. Additionally, with Agent Assist, the technology will automatically retrieve knowledge articles and other relevant information for agents in real time, predicting where the conversation will go and presenting the relevant data that will help the agent advance and resolve the intent of the call.

Interviewees described several different ways that CCAI can reduce overall handle times and the other scenarios that may see more benefits than others. For the financial model, Forrester divided all calls into three distinct tiers depending on the complexity of the call and the impact that CCAI has.

- Tier 1 calls are the simplest to handle. They require a relatively generic or simple response from agents, and they experience the least significant benefits from CCAI.
- Tier 2 calls are more personalized and require more data from the customer who is calling. CCAI is able to further reduce the handle time of Tier 2 calls by providing a clear transcript of the call including account numbers and answers to security questions so the agent is confident they are speaking to the correct person and the customer is not required to repeat themselves.
- Tier 3 calls are complex and sensitive, which meaning the stakes are even higher for the agent to be able to understand the customer and clearly communicate the necessary information. CCAI helps shorten these types of calls by finding relevant knowledge articles for agents and predicting where the conversation will go next. CCAI also saves time with Tier 3 calls by integrating data from other channels so that a customer who initially reached out via a digital channel is seamlessly connected to an agent without needing to reauthenticate or restate their issue.

For chats, the features of Agent Assist have the biggest impact to reducing average handle time. Relevant knowledge articles, contextual information about the customer and their request, smoother handoffs between bots and agents, and improved functionality in the digital channel all reduce average handle times.

Based on the customer interviews, Forrester modeled the financial impact for the composite organization with the following estimates:

- Seventy-five percent of all calls are Tier 1 and require a generic answer from the agent.
- Fifteen percent of calls are Tier 2, which are more personalized for the customer.
- Ten percent of calls are Tier 3, which are more complex and sensitive and often lead to follow-up or continuation calls.
- CCAI has a different impact to each Tier, and the benefits compound as the calls become more complex.
    - Tier 1: 5 to 20 seconds saved per call
    - Tier 2: Additional 16 to 47 seconds saved per call
    - Tier 3: Additional 23 to 55 seconds saved per call
- For chats, CCAI is able to reduce average handle time between 10 and 47 seconds per chat.

> "We have removed the need for an agent to enter the reason for a call, and it has saved about 10 seconds on every call. Instead of the agent asking and manually entering the reason, which didn't always happen, the system automatically transcribes the call, maps to a particular intent, and populates the field for them with a high level of accuracy."
>
> *Enterprise architect, retail*

Reduced average handle times on all types of calls:

- Up to 20 seconds for simple calls
- Up to 1 minute on more personalized calls
- Up to 2 minutes on complex and sensitive calls

› The average fully burdened salary for a contact center agent is $20 per hour.

This yields a three-year projected PV ranging from $1.3 million to $3.7 million. The summary table for the low, mid, and high projections is shown below, followed by the detailed calculations for each projection.

Efficiency Gains For Voice And Chat Agents: Calculation Table

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Ct_{Low}	Efficiency gains for voice and chat agents (reduced time per call) (low)	$381,733	$598,807	$646,400	$1,626,940	**$1,327,562**
Ct_{Mid}	Efficiency gains for voice and chat agents (reduced time per call) (mid)	$704,673	$1,058,933	$1,056,260	$2,819,866	**$2,309,347**
Ct_{High}	Efficiency gains for voice and chat agents (reduced time per call) (high)	$1,135,860	$1,685,333	$1,652,000	$4,473,193	**$3,666,609**

Efficiency Gains For Voice And Chat Agents: Calculation Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Total	Present Value
$C1_{Low}$			6,048,000	8,160,000	7,680,000		
$C1_{Mid}$	Number of calls hitting the contact center	A1*A2*A3*(1 -A4)	5,712,000	7,680,000	6,720,000		
$C1_{High}$			5,376,000	7,200,000	6,240,000		
C2	Tier 1 calls (simple question, no account info)	Composite	75%	75%	75%		
C3	Tier 2 calls (require account validation)	Composite	15%	15%	15%		
C4	Tier 3 calls (special request)	Composite	10%	10%	10%		
$C5_{Low}$			5	5	5		
$C5_{Mid}$	Time saved: generic answer (sec/call)	Tiers 1, 2, and 3	10	10	10		
$C5_{High}$			20	20	20		
$C6_{Low}$			10	13	16		
$C6_{Mid}$	Time saved - more personalized (sec/call)	Tiers 2 and 3	20	25	31		
$C6_{High}$			30	38	48		
$C7_{Low}$			15	19	24		
$C7_{Mid}$	Time saved - complex and sensitive (sec/call)	Tier 3	25	31	39		
$C7_{High}$			35	44	55		
$C8_{Low}$			15,120	23,007	24,320		
$C8_{Mid}$	Total call-time reduction (hours/year)	((C1*C5)+(C 1*C3*C6)+(C1*C4*C7))/ 60/60, rounded	27,767	41,280	40,413		
$C8_{High}$			46,293	67,800	65,000		

C9	Call center agent - average fully burdened salary (31K*1.35)	Composite	$20	$20	$20		
$C10_{Low}$		C8Low*C9	$302,400	$460,140	$486,400		
$C10_{Mid}$	Subtotal: Efficiency gains for voice agents	C8Mid*C9	$555,340	$825,600	$808,260		
$C10_{High}$		C8High*C9	$925,860	$1,356,000	$1,300,000		
$C11_{Low}$			1,428,000	1,920,000	1,800,000		
$C11_{Mid}$	Number of chats hitting the contact center	B1*B2*B3*(1-B4)	1,344,000	1,680,000	1,440,000		
$C11_{High}$			1,260,000	1,560,000	1,320,000		
$C12_{Low}$			10	13	16		
$C12_{Mid}$	Average time saved per chat	Composite	20	25	31		
$C12_{High}$			30	38	48		
$C13_{Low}$			$79,333	$138,667	$160,000		
$C13_{Mid}$	Subtotal: efficiency gains for chat agents (hours)	(C11*C12*C9)/60/60	$149,333	$233,333	$248,000		
$C13_{High}$			$210,000	$329,333	$352,000		
Ct_{Low}			**$381,733**	**$598,807**	**$646,400**	**$1,626,940**	**$1,327,562**
Ct_{Mid}	**Efficiency gains for voice and chat agents (reduced time per call)**	**C10+C13**	**$704,673**	**$1,058,933**	**$1,056,260**	**$2,819,866**	**$2,309,347**
Ct_{High}			**$1,135,860**	**$1,685,333**	**$1,652,000**	**$4,473,193**	**$3,666,609**

Management Efficiencies

Interviewees described the following benefits related to the reduction in time, cost and effort to manage CCAI compared to their legacy solution:

- Prior to using CCAI, the organizations relied on regional teams to keep their IVRs up to date with the latest store hours, promotions, and advertising campaigns. This system inevitably led to errors and inaccuracies, and it provided a different CX depending on which contact center the customer dialed into. An enterprise architect in the retail industry said: “Before every holiday, someone would have to call up an admin IVR and record the new message in their own voice. Sometimes it wouldn’t match what appeared on the website. Sometimes the recordings would sound very different depending on what kind of mood the person was in when they recorded it. It was very inconsistent, and it was completely redundant.”

Reduced effort to roll out new and updated capabilities and products

Additionally, when organizations were looking to stand up a new service or incorporate a new product into the contact center, it required a significant amount of time and effort to develop call flows and script, train agents, refine the flow, and roll out to the entire contact center.

- With CCAI, organizations have a centralized place to manage everything, which reduces the amount of maintenance and improves consistency. The enterprise architect in the retail industry said: "We no longer need to record messages for individual IVRs. We utilize an API that can pull the information from the same source as the website and convert the time into a prompt that can be played back for customers when they call. Two or three weeks before a holiday, the system will automatically start notifying customers who call in of the upcoming change, giving that time back to those teams."
- Because of CCAI's AI and ML capabilities, the system takes advantage of previous and existing call data to continuously improve the accuracy of the transcripts and intents, and it predicts what information is most relevant to agents. When organizations want to stand up a new service, they can leverage this knowledge base to go to market more quickly. A CTO in the financial services industry said: "Something I'm really excited about is that as we enter new businesses where we have not had things predefined in the past, CCAI can help us accelerate excellent customer service without us having to go through all of the typical steps: double-jacking with agents to listen to conversations, analyzing the lessons learned, and refining the approach. With CCAI, a lot of this happens natively as the platform is constantly tuning, learning, and improving."
- A CTO in the financial services industry said: "Part of reducing the technical sprawl from our previous solution is freeing up people so we can invest in other things. For example, we can dedicate more people to expanding our business to move into new verticals and industries. The additional resources allow our business teams to be more comfortable taking on these new projects they wouldn't have normally felt comfortable doing."

> "In a CCAI world, I don't have to go rerecord a call flow. I don't have to go change my tree because of some new event that is going on. The system self-adapts and self-regulates, and it's really quite good at getting to the intent of the caller in a very natural way."
>
> *CTO, financial services industry*

Eliminate tedious IVR management with CCAI

Based on the customer interviews, Forrester modeled the financial impact for the composite organization with the following estimates:

- Before investing in CCAI, the composite organization managed 10 distinct IVRs across five contact centers.
- The average, fully burdened salary for an engineer is $121,500.
- Through investing in CCAI, the composite organization is able to reduce overall management effort by 35% to 75% compared to with the previous solution.

This yields a three-year projected PV ranging from $1 million to $2.3 million. The summary table for the low, mid, and high projections is shown below, followed by the detailed calculations for each projection.

Management Efficiencies: Summary Table

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Dt_{Low}	Management efficiencies (low)	$425,250	$425,250	$425,250	$1,275,750	**$1,057,534**
Dt_{Mid}	Management efficiencies (mid)	$607,500	$607,500	$607,500	$1,822,500	**$1,510,763**
Dt_{High}	Management efficiencies (high)	$911,250	$911,250	$911,250	$2,733,750	**$2,266,144**

Management Efficiencies: Calculation Table							
Ref.	**Metric**	**Calculation**	**Year 1**	**Year 2**	**Year 3**	**Total**	**Present Value**
D1	IVR management team (pre-CCAI)	Composite	10	10	10		
$D2_{Low}$	Effort reduction with CCAI	Interviews	35%	35%	35%		
$D2_{Mid}$			50%	50%	50%		
$D2_{High}$			75%	75%	75%		
D3	Average fully burdened salary for engineer (rounded value shown)	Composite ($90,000*1.35)	$121,500	$121,500	$121,500		
Dt_{Low}	**Management efficiencies**	**D1*D2*D3**	**$425,250**	**$425,250**	**$425,250**	**$1,275,750**	**$1,057,534**
Dt_{Mid}			**$607,500**	**$607,500**	**$607,500**	**$1,822,500**	**$1,510,763**
Dt_{High}			**$911,250**	**$911,250**	**$911,250**	**$2,733,750**	**$2,266,144**

Reduced Agent Churn

Interviewees described the following benefits related to improved agent experience and a reduction in annual churn:

- Before using CCAI, agents were forced to rely on outdated technology to try to meet the growing customer expectations around service and support. A lack of smart routing capabilities meant agents often underutilized their specific strengths and were often stuck transferring customers who bypassed the IVR or answering rudimentary questions or requests that would be better served with self-service. Contact center agents have a tough job, and without the proper technology to support them, they had very little power to influence CX in a meaningful way.
- With CCAI, contact centers are running more efficiently with a higher number of calls being deflected or contained to bots and self-service options, leaving only the most important and relevant calls for agents to handle. Additionally, agents now have advanced technology to help them quickly understand what their customers are saying, they have the context they need to fully solve a customer's problem, and they no longer need to enter tedious post-call data because the platform automatically captures it.
- A CTO in the financial services industry said: "My theory is that as we handle a wider variety of use cases for a wider variety of callers and contain more calls within our IVR so they are not reaching the agents, the calls the agents are working on should be more interesting and of higher value, which should engage them more, improve their employee experience, and reduce churn."

> "Regardless of who our agents are and how many years of experience they have, they all benefit from CCAI. Newer agents are now able to ramp up faster, and they are more comfortable handling more complex situations because the technology is listening and it proactively pulls relevant information for the agent."
>
> *Data officer, government*

According to Forrester, the most important ingredient in an employee's experience at work is the ability to succeed. Specifically, it's their ability to make daily progress toward the work they believe is most important. Provisioning resources, such as simple access to task-critical information, has significant positive effects including motivating employees to demonstrate more customer-centric behaviors.[2] By leveraging CCAI, organizations give their contact center agents the tools and resources they need to be successful. And through better call

routing, deflection, and self-service, agents more often help customers with the most critical or sensitive interactions, rather than performing rudimentary tasks and constantly transferring calls to other departments. This leads to a more fulfilling employee experience.

Based on the customer interviews, Forrester modeled the financial impact for the composite organization with the following estimates:

- The composite organization has 1,200 total agents across five contact centers. Fifty percent are employees and 50% are outsourced.
- The average churn rate (the rate at which agents leave and are replaced within a given year) before using CCAI was 25% per year.
- With CCAI, the composite organization is able to reduce the overall agent churn rate by between 3% and 7%.
- The average cost to onboard a new agent, including recruiting and training costs, is $5,000.

While the interviewed organizations had not yet fully realized or quantified this benefit, anecdotal evidence and early trends support these theories. Since March 2020 and the start of the COVID-19 pandemic, employee quit rates (the rate of employees quitting jobs) have fallen dramatically.[3] Forrester did not factor this macroeconomic trend into the financial model calculations for this study.

This yields a three-year projected PV ranging from $447,633 to $1 million. The summary table for the low, mid, and high projections is shown below, followed by the detailed calculations for each projection.

Reduced Agent Churn: Summary Table

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Et_{Low}	Reduced agent churn/improved agent experience (low)	$180,000	$180,000	$180,000	$540,000	**$447,633**
Et_{Mid}	Reduced agent churn/improved agent experience (mid)	$300,000	$300,000	$300,000	$900,000	**$746,056**
Et_{High}	Reduced agent churn/improved agent experience (high)	$420,000	$420,000	$420,000	$1,260,000	**$1,044,478**

Reduced Agent Churn: Calculation Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Total	Present Value
E1	Total number of agents	Composite	1,200	1,200	1,200		
E2	Average agent churn with previous solution	Benchmark	25%	25%	25%		
$E3_{Low}$			3%	3%	3%		
$E3_{Mid}$	Reduction in churn	Interviews	5%	5%	5%		
$E3_{High}$			7%	7%	7%		
E4	Cost to onboard a new agent (e.g., recruiting, training)	Composite	$5,000	$5,000	$5,000		
Et_{Low}			**$180,000**	**$180,000**	**$180,000**	**$540,000**	**$447,633**
Et_{Mid}	**Reduced agent churn/improved agent experience**	**(E1*E2*E4) - ((E1*(E2-E3)*E4))**	**$300,000**	**$300,000**	**$300,000**	**$900,000**	**$746,056**
Et_{High}			**$420,000**	**$420,000**	**$420,000**	**$1,260,000**	**$1,044,478**

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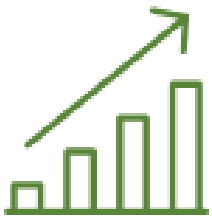
Unquantified Benefits

In addition to seeing the quantified benefits, the interviewees described other benefits of leveraging CCAI in their contact centers:

- **Improved CX.** While not specifically quantified in this study, each of the interviewees reported an improvement in their organization's CX as a result of their investment in CCAI, and they were confident that as they continue to leverage the platform and expand use cases, the gains in CX will continue to rise. Organizations have an opportunity to continuously differentiate themselves through the level of service and support they provide at the contact center. Using CCAI, decision makers can better understand the reasons customers are calling and work to address those issues faster and with less human intervention. One great interaction can lead to a new and loyal customer while one bad interaction can lead to multiple customer losses, especially if it's posted on social media or amplified by the media.



While the benefit was not included in the financial model, the business benefits of improved CX are potentially much larger than the other modeled benefits because of potential impact to customer lifetime value (CLV), average order size, and customer loyalty.

Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are multiple scenarios in which a customer might choose to implement CCAI and later realize additional uses and business opportunities, including:

- **Scalability.** By leveraging CCAI, organizations can reduce the volume and overall length of calls that agents handle. These capabilities are expected to continuously improve as organizations integrate more data, improve self-service and bot functionality, and get a better understanding of why customers call in the first place. These efficiencies, along with continuous improvements automatically implemented by AI and ML capabilities, will give organizations the ability to handle a higher volume of contacts with the same number of agents, reducing the need to expand the number of agents over time. A CTO in the financial services industry said, "I think it's very reasonable to assume that if we have 4,000 agents today, 10 years from now, we might also have 4,000 agents."
- **Flexibility and cross-channel capabilities.** One interviewee said their organization was in the process of rolling out a WhatsApp channel where customers could communicate and handle even relatively complex tasks within WhatsApp by interacting with a chatbot. CCAI's ability to integrate with other solutions, channels, and data sources makes it extremely flexible for future use cases, and it gives organizations the ability to develop highly customized and functional automated bots and capabilities for customers.

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

Analysis Of Projected Costs

QUANTIFIED PROJECTED COST DATA AS APPLIED TO THE COMPOSITE

Total Projected Costs

REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Ftr	Internal labor	$1,538,250	$562,800	$510,300	$510,300	$3,121,650	$2,855,018
Gtr	Training costs	$325,080	$0	$0	$0	$325,080	$325,080
Htr	License/subscription costs	$0	$1,155,000	$1,155,000	$1,155,000	$3,465,000	$2,872,314
	Total costs (risk-adjusted)	**$1,863,330**	**$1,717,800**	**$1,665,300**	**$1,665,300**	**$6,911,730**	**$6,052,412**

The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total costs to have a PV of $6.1 million.

Internal Labor

Interviewees discussed the labor and third-party costs related to configuring and deploying CCAI.

In order to deploy CCAI to an entire contact center, an organization first needs to capture and define all of the various intents that a customer may have for calling, and then ensure that they are routed correctly through the system to efficiently resolve their reason for calling. Because this technology is customer-facing, the interviewed organizations were especially careful with their early use cases and gained more confidence in the technology and improving speed of deployment with each iteration.

By leveraging call transcript data and/or Google's training data, the organizations spent the first few weeks training the platform to understand their specific products and preferred languages. Using the training data, CCAI defines various intents and continuously improves the accuracy of mapping the caller to their desired intent. After two to three weeks, the organizations were realizing over 90% accuracy in most cases.

Additionally, the organizations worked closely with telephony partners and Google to connect organizational data to the partner's platform to enable the Agent Assist features like pulling relevant knowledge articles, helping customers with account-related requests, and capturing and analyzing call data to further improve the platform.

Based on the customer interviews, data from Google, and the composite organization's deployment size, Forrester modeled the financial impact for the composite organization with the following estimates:

- The composite organization routes 70% of total contacts through CCAI in Year 1, which means it did a significant amount of development and testing before deploying to contact centers in Year 1. The remaining 30% of contacts are routed through the legacy IVR. In subsequent years, 100% of all contacts are routed through CCAI.

- The organization pays $250,000 in up-front costs for third-party conversational design expertise to help the contact center team understand the technology and shift their thinking away from IVRs and towards conversation-based interactions. It spends an additional $50,000 for these services in Year 1, but these costs taper off as the organization gets more comfortable with the technology.
- An internal team of 15 FTEs dedicates 50% of its time on intent mapping, testing, and integrating data into the back-end initially. This team is reduced to three FTEs fully dedicated to continuously improving the platform in subsequent years.
- An initial deployment team of five FTEs dedicates 50% of its time to deploying the new system to all contact centers and agents. This is reduced to one FTE who works with the testing team to deploy updates and new capabilities and to incorporate new services.
- The average, fully burdened annual salary for an internal CCAI team member is $121,500.

This cost can vary due to uncertainty related to:

- Robustness of initial deployment/use-case. Some of the interviewed organizations started with a relatively small intent or group of intents to test the platform and expanded over time as it ingested more data and agents became more comfortable.
- Required professional services.
- Size of the testing and deployment team.
- Average annual salary for internal contact center team.

To account for these risks, Forrester adjusted this cost upward by 5%, yielding an initial cost of $1.5 million and an annual cost under $565,000 in subsequent years, with a three-year risk-adjusted total PV of $2,855,018.

Implementation risk is the risk that a proposed investment may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the higher the potential costs.

Internal Labor: Calculation Table

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Third-party costs: deployment/integrations	Interviews	$250,000	$50,000		
F2	Internal team responsible for development and testing (intent mapping)	Interviews	15	3	3	3
F3	Time spent developing and testing flows/intents	Composite	50%	100%	100%	100%
F4	Deployment team	Composite	5	1	1	1
F5	Time spent implementing new system to all contact centers		50%	100%	100%	100%
F6	Average fully burdened salary (CCAI team)	D3	$121,500	$121,500	$121,500	$121,500
Ft	Internal labor costs for technical configuration	F1+(F2*F3*F6)+(F4*F5*F6)	$1,465,000	$536,000	$486,000	$486,000
	Risk adjustment	↑5%				
Ftr	**Internal labor to test and deploy CCAI to entire contact center (risk-adjusted)**		**$1,538,250**	**$562,800**	**$510,300**	**$510,300**

Training Costs

Interviewees noted training costs related to CCAI. Their organizations were required to train both contact center agents and internal development teams on CCAI before deploying the solution.

Based on the customer interviews and the composite organization's deployment size, Forrester modeled the financial impact for the composite organization with the following estimates:

- A 10-our training course on CCAI for all existing contact center agents.
- A 40-hour training course for an internal team working on CCAI to understand how to work with the platform and an additional 20 hours of training each year to stay up to date with the platform and understand how to take advantage new capabilities and use cases.
    - New agents and internal team members who start after CCAI is deployed will undergo CCAI training in lieu of legacy training, so no additional training costs are assessed.
- The average, fully loaded salary for agents is $20 per hour.
- The average, fully loaded salary for an internal CCAI team member is $58 per hour.

This cost can vary due to uncertainty related to:

- Implementation timeline.
- Number of agents and internal employees requiring training.
- Length of training.

To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year risk-adjusted total PV of $325,080.

Training Costs: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
G1	Initial number of agents needing training on CCAI	E1	1,200	0	0	0
G2	CCAI Training (hours)	Composite	10	10	10	10
G3	Internal team members requiring training (engineering, developers, PMs etc.)	Composite	30	0	0	0
G4	Hours of training for internal team	Composite	40	20	20	20
G5	Average fully loaded salary for agents (hourly)	C9	$20	$20	$20	$20
G6	Average fully loaded salary for CCAI team (hourly, rounded)	D3/2,080	$58	$58	$58	$58
Gt	Total training required for CCAI	(G1*G2*G5)+(G3 *G4*G6)	$309,600	$0	$0	$0
	Risk adjustment	↑5%				
Gtr	**Total training required for CCAI (risk-adjusted)**		**$325,080**	**$0**	**$0**	**$0**

License And Subscription Costs

Interviewees described licensing costs related to CCAI. Though CCAI is a Google solution, it is delivered through the telephony partner/contact center provider that each interviewed organization worked with. In some cases, the organizations were required to upgrade their license agreement with the telephony partner in order to access CCAI, as reflected in the financial model.

Based on the customer interviews and the composite organization's deployment size, Forrester modeled the financial impact for the composite organization with the following estimates:

- CCAI costs of $1 million per year via a contact center provider.
- Upgrade costs of $100,000 per year associated with updating previous license to be able to leverage CCAI.

This cost can vary due to uncertainty related to:

- Size of deployment and data requirements.
- Licensing costs to leverage CCAI.

To account for these risks, Forrester adjusted this cost upward by 5%, yielding an annual cost of $1.16 million, with a three-year risk-adjusted total PV of $2.9 million.

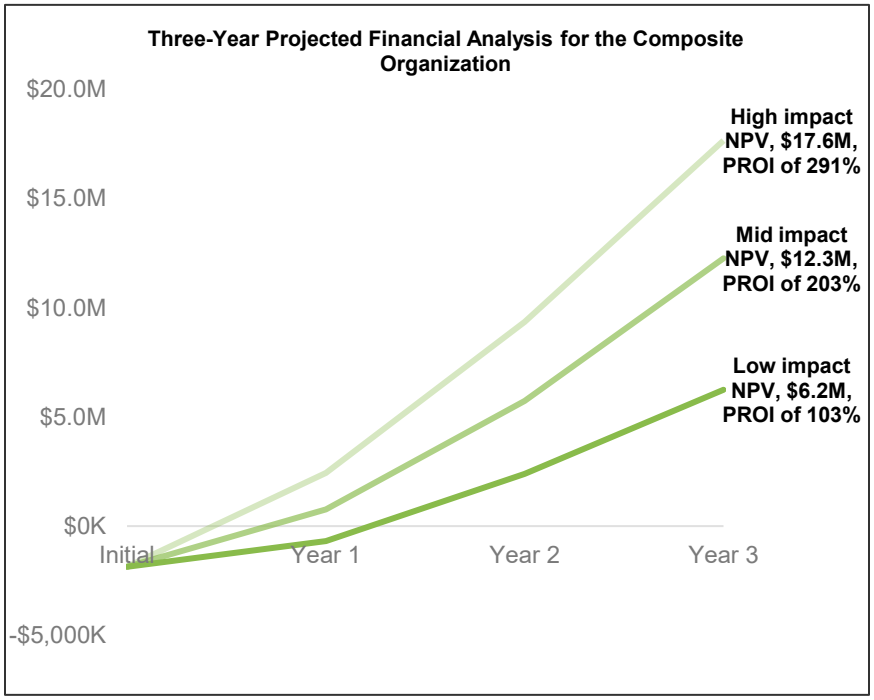
License And Subscription Costs: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
H1	Google Fees (CCAI fees)	Composite		$1,000,000	$1,000,000	$1,000,000
H2	Additional license fees	Composite		$100,000	$100,000	$100,000
Ht	License and subscription costs	H1+H2	$0	$1,100,000	$1,100,000	$1,100,000
	Risk adjustment	↑5%				
Htr	**License and subscription costs (risk-adjusted)**		**$0**	**$1,155,000**	**$1,155,000**	**$1,155,000**

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED PROJECTED METRICS

Cash Flow Chart (Risk-Adjusted)



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

These risk-adjusted PROI and NPV are determined by applying risk-adjustment factors to the results in each Benefit and Cost section.

Cash Flow Table (Risk-Adjusted)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	($1,863,330)	($1,717,800)	($1,665,300)	($1,665,300)	($6,911,730)	**($6,052,412)**
Total benefits (Low)	$0	$2,981,983	$5,404,057	$6,801,650	$15,187,690	**$12,287,237**
Total benefits (Mid)	$0	$4,552,173	$7,666,433	$10,363,760	$22,582,366	**$18,260,682**
Total benefits (High)	$0	$6,352,110	$10,066,583	$12,733,250	$29,151,943	**$23,660,814**
Net benefits (Low)	($1,863,330)	$1,264,183	$3,738,757	$5,136,350	$8,275,960	**$6.2M**
Net benefits (Mid)	($1,863,330)	$2,834,373	$6,001,133	$8,698,460	$15,670,636	**$12.2M**
Net benefits (High)	($1,863,330)	$4,634,310	$8,401,283	$11,067,950	$22,240,213	**$17.6M**
PROI (Low)						**103%**
PROI (Mid)						**202%**
PROI (High)						**291%**

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Appendix A: New Technology: Projected Total Economic Impact

New Technology: Projected Total Economic Impact (New Tech TEI) 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 New Tech TEI methodology helps companies demonstrate and justify the projected tangible value of IT initiatives to both senior management and other key business stakeholders.

Total Economic Impact Approach

Projected Benefits represent the projected value to be delivered to the business by the product. The New Tech TEI methodology places equal weight on the measure of projected benefits and the measure of projected costs, allowing for a full examination of the effect of the technology on the entire organization.

Projected Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The projected cost category within New Tech 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.

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.

Projected return on investment (PROI)

A project's expected return in percentage terms. PROI is calculated by dividing net projected benefits (projected benefits less costs) by projected 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%. A 10% discount rate is used for this analysis.

Appendix B: Endnotes

[1] Source: “Vendors Battle For The Heart Of The Contact Center,” Forrester Research, Inc., November 15, 2019; Source: Business Technographics® Priorities And Journey Survey, 2020.
[2] Source: “The Employee Experience Technology Ecosystem,” Forrester Research, Inc., January 28, 2020.
[3] Source: Elise Gould, “Latest Job Openings and Labor Turnover Survey data further illustrate the catastrophic COVID-19 labor market,” Economic Policy Institute, May 15, 2020 (epi.org/blog/latest-jolts-data-further-illustrates-the-catastrophic-covid-19-labor-market).