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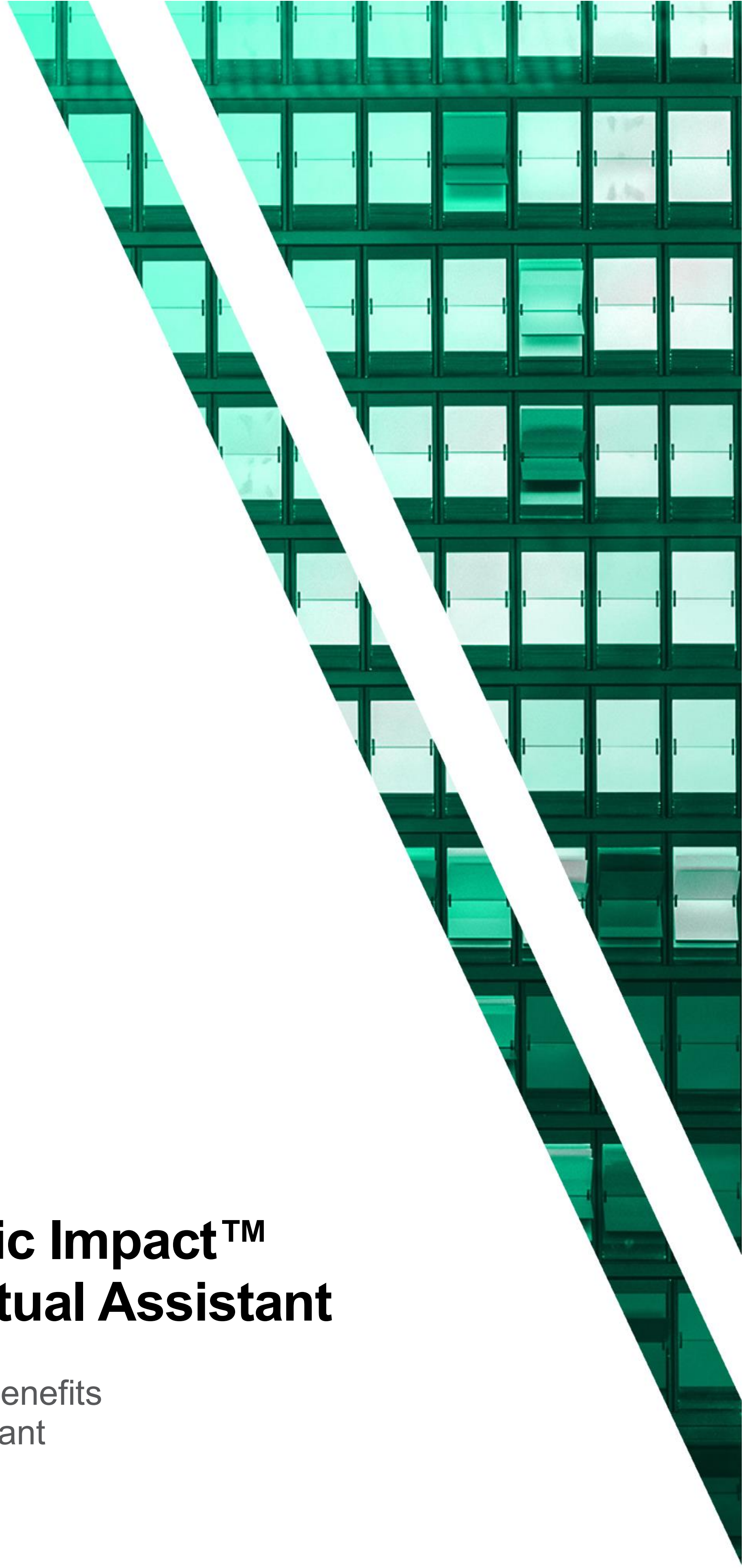

The Total Economic Impact™ Of The Nuance Virtual Assistant

Cost Savings And Business Benefits Enabled By The Virtual Assistant

OCTOBER 2021

A FORRESTER TOTAL ECONOMIC IMPACT™ STUDY COMMISSIONED BY NUANCE

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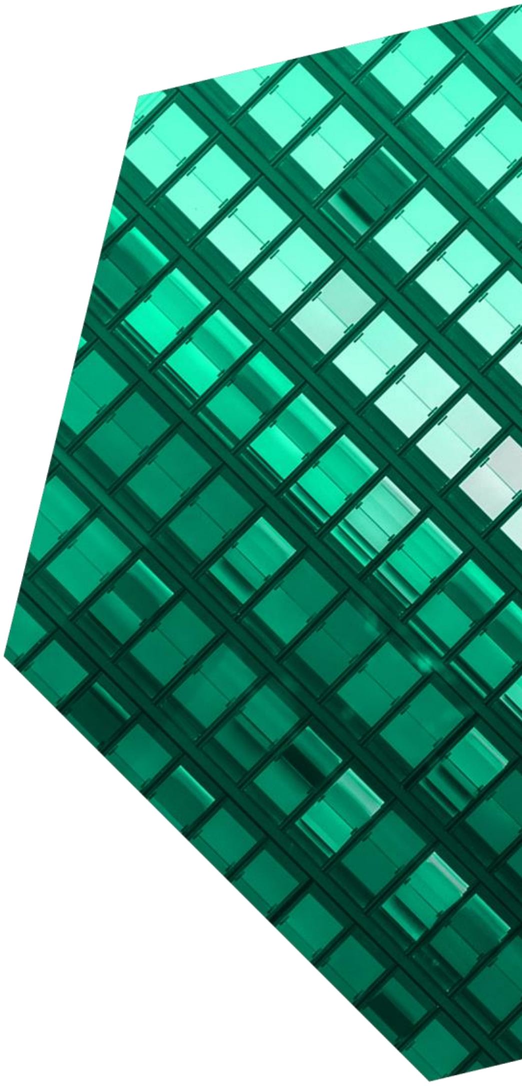


Executive Summary

Consumers have high expectations when it comes to digital interactions with enterprise companies. They want to get a fast resolution with a personalized, human touch. The marketplace for virtual assistant solutions is crowded and ever-evolving, but companies that take a holistic view of their customer engagement strategy achieve their desired business outcomes when implementing the Nuance Virtual Assistant.

The Nuance Virtual Assistant (VA) is a digital customer engagement solution that leverages artificial intelligence (AI), natural language understanding (NLU), and machine learning (ML) to help companies easily and effectively communicate with their customers. Utilizing this solution, companies can resolve more customer inquiries digitally, which makes their service agents more productive and reduces their overall costs. With the Nuance VA, agents can redeploy saved time to focus on higher value tasks and more complex customer issues. By giving customers fast, personalized answers to their questions, the Nuance Virtual Assistant improves the overall customer experience and increases customer satisfaction.

Nuance commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying the Nuance Virtual Assistant.[1] The purpose of this study is to provide readers with a framework to evaluate the potential financial impact and total cost of ownership (TCO) of the Nuance Virtual Assistant in their organizations. Please see Appendix A for additional information on the TEI methodology.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed six decision-makers from five organizations with experience using the Virtual Assistant. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organization.

KEY STATISTICS

Return on investment (ROI)
353%

Net present value (NPV)
$13.61M

Prior to using the Nuance Virtual Assistant, interviewees noted how their organizations struggled with implementing their digital customer engagement solution. Some organizations tried a build-it-yourself approach, relying on in-house tools to enhance their digital customer service. Others worked with a point solution first, thinking that they just needed to have the chatbot technology in place, and then their teams would have the bandwidth to handle the rest.

Without a robust, enterprise-grade solution to support and scale their efforts, interviewees found it challenging and time-consuming to build out their organizations' digital engagement strategy. The hidden costs and unforeseen time commitments in designing and maintaining a virtual assistant meant that delivering the high-quality, 24/7 customer service they wanted was difficult. Despite these hurdles, interviewees also knew that building a personalized, sophisticated virtual assistant was a business necessity. Expectations were high, and customer needs evolve and shift over time, so the interviewees needed a solution that could help them adapt to changing customer demands.

After their investment in the Nuance VA, the interviewees noted that their companies deflected more customer calls and decreased average handle time, therefore reducing costs. The organizations also increased revenue through better conversion rates and an improved customer experience. With the Nuance VA, interviewees' organizations delivered a more consistent customer engagement experience with notable improvements in key metrics like customer satisfaction (CSAT) and Net Promoter Score℠ (NPS).

> **"Nuance stood out because they just had expertise that we didn't have internally. With [our previous vendor], we struggled a bit because they basically said, 'Here's the technology, now you go do it.' We didn't know what business rules to use or how you do A/B testing. But now that we've implemented Nuance, they've helped us a lot."**
>
> *Digital product manager, insurance*

KEY FINDINGS

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

- **Reduced average handle time by 20%.** Interviewees examined their average interaction times both before and after the VA was implemented. The metrics consistently showed that the Nuance VA helped decrease average handle time. Customers quickly received the answers they needed, so even when a more complex issue eventually did reach a live agent, the agent could spend less time on average resolving each inquiry. These time savings gave agents the ability to answer more customer calls or chats in their queue, and they allowed the company to avoid backfilling for all lost customer service roles.
- **Increased call deflection by up to 50%.** By implementing the Nuance VA, these organizations could deflect a large portion of their call volumes from reaching live agents. Interviewees often cited the data from post-digital-interaction surveys, where they asked customers, "If you had not resolved your issue here today, would you have called the customer service line?" In most cases, customers confirmed that they likely would have called the customer service phone line had their issue not been resolved through the VA. The impact on live agents' productivity and call center costs is significant after implementing the Nuance VA.
- **Increased customer conversion by 20%.** Interviewees noted revenue improvements after building out sales-related conversations and intents within the Virtual Assistant. This trend was particularly noticeable within the more complex product lines that would prompt a customer to ask the VA questions about their potential purchase. Typically, the Nuance VA's initial rollout was focused on customer service but, over time, companies then began to expand the VA's reach to focus on customer conversion more directly by curbing cart abandonment and improving access to product information.

"Nuance allows us to reduce the time agents spend doing meaningless tasks. Before Nuance, agents spent more time answering repetitive questions and not doing quality engagement work."

— Operations technology manager, ridesharing

Unquantified benefits. Benefits that were commonly cited by interviewees, but are not quantified for the study's financial model, include:

- **Higher customer satisfaction metrics by up to 30%.** One of the primary reasons that interviewees implemented the Nuance VA was to keep customers happy and give them access to a 24/7 service channel. This investment driver became a reality for all of the interviewees' organizations with reports of up to a 30% increase in customer satisfaction and a 20-point improvement in NPS.

- **Better understanding of customer trends and needs.** Interviewees commented on how the Nuance VA's reporting components helped them better understand, track, and address customer needs. This was particularly useful during the changes and stressors associated with the COVID-19 pandemic. Knowing what concerns and questions were important to customers allowed companies to adapt quickly to improve service and get ahead of customer pain points. In many instances, the customer feedback within the VA reports even guided the strategy in how these companies presented information to their customers.

Higher customer satisfaction metrics

CSAT ↑30%

NPS ↑20 points

Costs. Risk-adjusted PV costs include:

- **Nuance subscription costs and fees of less than $2.28 million over a three-year period.** This cost combines the subscription cost for maintaining access to the Nuance Virtual Assistant over the three-year period, along with the professional services payments that the composite organization makes to Nuance for their expertise and assistance with implementation, development, design, and content creation. The size of the customer base and the number of annual digital interactions are factors that contributed to the subscription cost tier for the composite organization.

- **Administrative costs of less than $1.58 million over a three-year period.** Administrative costs encompass the internal resources that the composite organization needs to implement and maintain the VA. While there is variance in how enterprise companies approach their relationship with Nuance, the composite organization enlists Nuance's professional services team for their conversational design expertise to improve outcomes. To bolster their investment in Nuance services, the composite uses 3 to 4 full-time equivalents (FTEs) to strategically partner the Nuance team.

Investing in the Nuance VA led to numerous benefits for the interviewees' organizations. Measurable reductions in average handle time, along with increased call deflection and customer conversion, led to quantifiable improvements in agent productivity and revenue. Additionally, interviewees noted higher customer satisfaction scores and an improved understanding of customer needs.

The decision-maker interviews and financial analysis found that a composite organization experiences benefits of $17.46M over three years versus costs of $3.85M, adding up to a net present value (NPV) of $13.61M and an ROI of 353%.

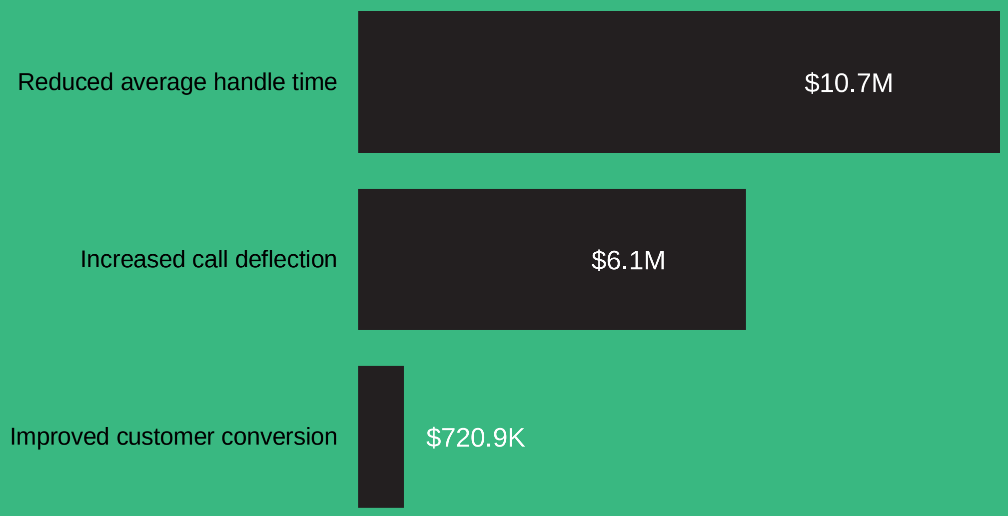
ROI
353%

BENEFITS PV
$17.46M

NPV
$13.61M

PAYBACK
<6 months

Benefits (Three-Year)



TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in the Virtual 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 the Nuance Virtual Assistant can have on an organization.

DUE DILIGENCE
Interviewed Nuance stakeholders and Forrester analysts to gather data relative to the Virtual Assistant.

DECISION-MAKER INTERVIEWS
Interviewed six decision-makers at five organizations using the Virtual 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 decision-makers.

CASE STUDY
Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Nuance 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 the Virtual Assistant.

Nuance 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.

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

The Nuance Virtual Assistant Customer Journey

Drivers leading to the Virtual Assistant investment

Interviewed Decision-Makers

Interviewee	Industry	Region	Revenue
Head of efficiency, sales, and service	Finance	Europe	$5.8 billion
Team manager, virtual assistant content	Finance	Europe	$5.8 billion
General manager, integrated channels	Finance	Australia	$15.8 billion
Operations technology manager	Ridesharing	Europe	$104 million
Digital product manager	Insurance	USA	$2.1 billion
Health IT clinical director	Healthcare	USA	$13.8 billion

KEY CHALLENGES

Prior to their investment in Nuance, interviewees noted their organizations' digital customer engagements were resource heavy and hard to scale. Their agents relied on manual workarounds and were spending time answering simple customer questions that the Virtual Assistant could easily tackle. Interviewees needed to maximize their live agents' valuable time and provide market-leading, 24/7 customer service that kept up with changing demands and high expectations.

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

- **The desire to differentiate through great customer service experiences.** As enterprise companies, these organizations wanted to ensure that their market leadership in customer service matched the market leadership within their respective industries. They wanted to get ahead of their competition and wow customers with personalized communications that addressed specific questions and did not feel like canned, robotic responses. Interviewees also felt that a true 24/7 customer service program was necessary to keep their customers happy and engaged.
- **The need to maximize customer service agent productivity and effectiveness.** Interviewees wanted their organizations' agents to have the bandwidth to focus on the most complex customer issues. That meant removing as many simple, repeatable processes from the agents' to-do lists as possible. Before investing in Nuance, agents used manual processes like taking screenshots of conversations or saving chat scripts on their local hard drives, making it difficult to share and standardize customer communication protocols across the company. With the Nuance VA, interviewees could pass along full transcripts of VA interactions to live agents, giving them the background and context to have an effective conversation with the customer.

"The opportunity to use the Virtual Assistant to service our customers was front and center for us. We wanted to be quick to market so we weren't following, but leading — providing answers for our customers wherever they are, however they want to connect, and whatever time they want to be in contact with us."

General manager of integrated channels, finance

- **A lack of internal conversational design and speech science expertise.** Interviewees knew that building out a digital customer engagement strategy with a virtual assistant would not be a simple undertaking. While enhancements in AI and machine learning have increased the capabilities of customer service solutions, there is still specialized work and specific expertise needed to keep up with customer demands — and companies do not always have that expertise available internally. The interviewees noted their organizations needed a vendor to truly partner with, so that they could bring their market knowledge while their vendor partner could bring their conversational design expertise, deep vertical experience with similar organizations, and battle-tested technology.

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

The interviewees' organizations searched for a solution that could:

- Supplement their live customer service agents with contextual transfers and provide 24/7 service without sacrificing the human touch.
- Incorporate the latest technological developments, such as AI, machine learning, prediction, hyperpersonalization, and natural language understanding, to understand and appropriately respond to customer intents.
- Provide knowledge and expertise around holistic customer engagement strategy.
- Provide data pertaining to their industry vertical, along with support across many languages and dialects.
- Allow for straightforward upgrades, integrations, and product expansions.

"We spent a lot of money on personal agents, and they were always answering repetitive questions. The same questions over and over and over again. We also didn't want users to have to wait for an answer that the Virtual Assistant can just give them right away. It saves us money and we can be ready 24/7 to answer those customers."

Operations technology manager, ridesharing

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and a ROI analysis that illustrates the areas financially affected. The composite organization is representative of the six decision-makers (from five organizations) that Forrester interviewed and is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The composite organization is a global, enterprise-level company with US headquarters. This organization has over $1 billion in revenue, along with a large, digitally active customer base of approximately 6 million people. Thirty percent of the composite's business is considered complex, and prospective customers within this product line are more likely to need sales assistance through the Nuance VA.

Deployment characteristics. The composite maintains a team of 1,000 customer service agents. The composite supports roughly 550,000 digital interactions monthly, totaling 6,600,000 interactions annually. There is a team of 10 people using a 35% portion of their time to support the VA, netting out to 3 to 4 FTEs. This team includes roles that handle digital operations, IT, and content creation.

Key assumptions

- **$1 billion in revenue**
- **6 million customers**
- **1,000 agents**

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	Reduced average handle time	$3,264,000	$4,352,000	$5,440,000	$13,056,000	$10,651,119
Btr	Increased call deflection	$1,438,462	$2,517,308	$3,596,154	$7,551,923	$6,089,955
Ctr	Improved customer conversion	$72,765	$316,008	$523,908	$912,681	$720,933
	Total benefits (risk-adjusted)	$4,775,227	$7,185,316	$9,560,062	$21,520,604	$17,462,007

REDUCED AVERAGE HANDLE TIME

Evidence and data. Reduced average handle time was the most common quantifiable benefit that interviewees experienced.

- Interviewees estimated that the Nuance Virtual Assistant reduced their organizations' length of customer interactions by up to 25%.
- There were specific use cases related to the COVID-19 pandemic that interviewees discussed. The general manager of integrated channels at a finance company described how his organization quickly worked within the Nuance VA to suspend millions of home loan payments for customers suffering hardship with each of those interactions typically taking 8 to 12 minutes for a live agent to complete.
- As a result of these time savings, interviewees noted their organizations paused the backfilling of lost customer service roles by anywhere from 5% to 12% year-over-year.

Modeling and assumptions. For the analysis, Forrester assumes the following:

- The composite organization sees an immediate reduction in average handle time in Year 1, and those time savings increase each year.
- The average customer service representative at the composite spends 80% of their time actively servicing customers with the remaining portion of their job being dedicated to administrative or personal tasks.
- The average fully burdened salary for a customer service agent at the composite organization is $50,000.
- A conservative time savings estimate factors in a time recaptured metric of 80%.

"I think the main benefit is the reduction in average handle times. I recently checked chat handle time and, before Nuance, it was almost four minutes average and right now, it is three minutes."

Operations technology manager, ridesharing

Risks. The risks associated with the reduction in average handle time benefit are as follows:

- Salary considerations may vary depending on geographic factors and level of employee experience.
- The average length of a customer service call at the composite has an impact on the percentage reduction in average handle time. For example, shaving 1 minute off a 4-minute call versus a 10-minute call results in anywhere from a 10% to 25% reduction in average handle time.

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 nearly $10.65 million.

Reduced Average Handle Time

Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Total number of customer service agents	Composite	1,000	1,000	1,000
A2	Percentage of time servicing customers	Interviews	80%	80%	80%
A3	Percentage reduction in average handle time	Interviews	12%	16%	20%
A4	Fully burdened CS agent salary (annual)	Composite	$50,000	$50,000	$50,000
A5	Percent recaptured	Industry sources	80%	80%	80%
At	Reduced average handle time	A1*A2*A3*A4*A5	$3,840,000	$5,120,000	$6,400,000
	Risk adjustment	↓15%			
Atr	Reduced average handle time (risk-adjusted)		$3,264,000	$4,134,400	$4,912,320
	Three-year total: $13,056,000		**Three-year present value: $10,651,119**		

INCREASED CALL DEFLECTION

Evidence and data. Call deflection represents another common benefit that interviewees noted their organizations experienced.

- Interviewees discussed how they partnered with Nuance's professional services team to refine conversation scripts within the VA and adapt the VA dialogue to changing customer inquiries. This continuous work led to a steady increase in call deflection over time.
- Interviewees discussed the surveys given to customers after completing a conversation with Nuance VA. These surveys poll customers on what actions they would have taken if their issue hadn't been resolved within the VA. Anywhere from 50% to 60% of survey respondents said they would have called the customer service phone line to speak to a representative.

Modeling and assumptions. For the analysis, Forrester assumes the following:

- Given the size and scope of their customer base and service organization, the composite has 6.6 million digital interactions on an annual basis.
- The increased percentage of calls deflected from Year 1 to Year 3 reflects how the Nuance VA improves over time with more knowledge inputs and refinement work.
- The average length of a deflected call is assumed to be on the lower end of the typical service call range at 4 minutes.
- A conservative time savings estimate factors in a time recaptured metric of 80%.

Risks. The risks associated with the increased call deflection benefit are as follows:

- The number of digital interactions could vary by organization.
- The typical length of a deflected call could also vary depending on the industry.
- The pace at which the call deflection percentage increases over time could be faster or slower, depending on the resources dedicated to developing and refining customer conversation scripts.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of nearly $6.09 million.

"Normally, a contact center doesn't like abandoned customers. But in this case, we could actually see that the number of abandoned increased after the queue message where we encouraged them to use the VA. So, we invented a new term called 'happy abandoned,' which represents those customers who transferred from the call queue over to the Nuance VA."

Head of efficiency, sales, and service, finance

Increased Call Deflection					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
B1	Annual digital interactions	Assumption	6,600,000	6,600,000	6,600,000
B2	Percent of interactions contained in digital channel (not reaching a live agent)	Interviews	20%	35%	50%
B3	Number of interactions contained in digital (not reaching a live agent)	B1*B2	1,320,000	2,310,000	3,300,000
B4	Average time of each saved call (minutes)	Interviews	4	4	4
B5	Total hours saved with deflected calls	B3*B4/60 min	88,000	154,000	220,000
B6	Total hours worked by a CS agent (annual)	52 weeks*40 hours	2,080	2,080	2,080
B7	Fully burdened CS agent salary (annual)	Composite	$50,000	$50,000	$50,000
B8	Percent recaptured	Industry sources	80%	80%	80%
Bt	Increased call deflection	(B5/B6)*B7*B8	$1,692,308	$2,961,538	$4,230,769
	Risk adjustment	↓15%			
Btr	Increased call deflection (risk-adjusted)		$1,438,462	$2,517,308	$3,596,154
	Three-year total: $7,551,923	**Three-year present value: $6,089,955**			

IMPROVED CUSTOMER CONVERSION

Evidence and data. Interviewees whose organizations have implemented Nuance VA within their sales channels discussed the various ways in which they saw a notable boost to revenue.

- Typically, organizations deployed Nuance VA as a customer service channel. Later on, they expanded to include a VA sales channel.
- Interviewees gave examples of how the Nuance VA supported and enhanced the sales effort through targeting. It provided guidance and real-time information to prospective customers, just as their interest in buying peaked. In other instances, the customer's demographics and prior sales history were available when they contacted the VA, so the solution could provide a tailored response that suited that customers' needs.
- Increased conversion rates cited by interviewees ranged from a 20% increase to a threefold increase.

Modeling and assumptions. For the analysis, Forrester assumes the following:

- The composite organization sees 6.6 million digital VA interactions annually.
- This model assumes 30% portion of the composite's business deals with a more complex product line that leads to more questions from prospects, warranting a solution like the VA.
- The churn rate for the composite organization is 20%. This calculation assumes that a successful enterprise company like the composite is

replacing their churning customers at a minimum. That number is used here to reflect sales prospects that interact with the VA.

- The conversion rate improved by 20% (3.5% in Year 1 to 4.2% in Year 3), which is on the conservative end of the rate increases discussed in interviews.
- To make this calculation conservative, there is a percent attributable to Nuance metric that assumes there are multiple factors contributing to a sale, in addition to the VA.

Risks. The risks associated with the improved customer conversion benefit are as follows:

- The percentage of the composite's business that deals with a more complex product line is set at 30% in the model but can vary widely by industry and company.
- Churn rate may vary widely by company and industry, and there is a built-in assumption that these likely churning or at-risk customers are seeking answers within the VA.
- There could be numerous factors that ultimately contribute to why and when a customer buys a given product. The VA is a significant driver of increased conversion for the composite organization, but this risk is worth noting.
- Revenue and profit margin figures are company-specific and influenced greatly by industry. The composite figures here are meant to be an example.

Results. To account for these risks, Forrester adjusted this benefit downward by 25%, yielding a three-year, risk-adjusted total PV of nearly $721,000.

"People come online to get a price quote and potentially buy a policy. We have always had proactive and reactive rules in place, but with Nuance, our proactive rules are much more extensive than what we've had before. For example, we target people who are returning quoters or people who are about to leave the page. We can tell they're about to leave the page, so we can say, 'Hey, before you go, can I help you?' There are a lot of specific scenarios like that that lead to increased conversion rates."

Digital product manager, insurance

Improved Customer Conversion					
Ref.	**Metric**	**Calculation**	**Year 1**	**Year 2**	**Year 3**
C1	Annual digital interactions	Composite	6,600,000	6,600,000	6,600,000
C2	Percent of interactions dealing with complex sales	Assumption	30%	30%	30%
C3	Typical churn rate for enterprise customers	Industry sources	20%	20%	20%
C4	Number of at-risk complex sales transactions	C1*C2*C3	396,000	396,000	396,000
C5	Sales conversion rates	Interviews	3.5%	3.8%	4.2%
C6	Increase in sales transactions	C4*C5	13,860	15,048	16,632
C7	Revenue per customer	Assumption	$350	$350	$350
C8	Total revenue improvement	C6*C7	$4,851,000	$5,266,800	$5,821,200
C9	Profit margin	Industry sources	20%	20%	20%
C10	Percent attributable to Nuance	Interviews	10%	40%	60%
Ct	Improved customer conversion	C8*C9*C10	$97,020	$421,344	$698,544
	Risk adjustment	↓25%			
Ctr	Improved customer conversion (risk-adjusted)		$72,765	$316,008	$523,908
	Three-year total: $912,681		**Three-year present value: $720,933**		

UNQUANTIFIED BENEFITS

Benefits that were commonly cited by interviewees, but are not quantified for the study's financial model, include:

- **Higher customer satisfaction metrics.** Interviewees' organizations demonstrated increased customer satisfaction ratings due to their investment in Nuance VA. By deploying NPS and customer satisfaction surveys within the VA itself, companies could directly connect customers' improved experience and satisfaction ratings with the Virtual Assistant.
  - **Customer satisfaction survey results increased by as much as 30%.** The head of efficiency, sales and service stated that his finance company's customer satisfaction survey results went from 50% satisfied to 80% satisfied, a jump that the interviewee wholly attributed to the Nuance implementation.
  - **NPS results increased by as much as 20 points.** The general manager of integrated channels cited that his organization's NPS score went from negative to positive as a result of the VA.
- **Better understanding of customer needs and trends.** Interviewees who invested in the Nuance VA were dedicated to learning about their customer base. Efforts to review reports, refine

conversation scripts, and adjust customer communication strategies helped all who work with the VA to improve their understanding of the customer personas and their specific journey.

- **Interviewees' organizations maintained agility during the pandemic, adjusting their response based on shifting customer needs.** The team manager for virtual assistant content described his finance company's pandemic experience with the VA as follows: "Given the trends in user questions, we could basically see the pandemic crisis stress curve — both in the kinds of questions people asked and how they actually changed. At first, people were really concerned about travel insurance. And, eventually, it changed to, 'What happens if I lose my job? What happens to my mortgage?' And the best part was that we could track all of these questions in Nuance VA reports."

FLEXIBILITY

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

- **Expanding to a sales-focused channel**. For those interviewees whose companies had not yet utilized Nuance VA for sales-specific inquiries, this was a key future priority. Along these same lines, interviewees discussed efforts to better market and publicize their current VA so that more customers in need could be funneled to the digital solution for help.
- **Implementing other solutions within the Nuance digital portfolio**. Interviewees mentioned that their organizations planned to use other Nuance products to complement the VA. Some interviewees intended to integrate the VA with their CRM platform, or their ticketing/helpdesk provider.

"There are lots of good future opportunities to really leverage natural language understanding and natural language processing to enhance the EHR experience."

— Health IT clinical director, healthcare

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
Dtr	Nuance subscription costs and fees	$172,500	$851,000	$845,250	$839,500	$2,708,250	$2,275,419
Etr	Administrative costs	$294,400	$515,200	$515,200	$515,200	$1,840,000	$1,575,626
	Total costs (risk adjusted)	$466,900	$1,366,200	$1,360,450	$1,354,700	$4,548,250	$3,851,045

NUANCE SUBSCRIPTION COSTS AND FEES

Evidence and data. This category reflects the costs that the composite organization pays directly to Nuance — both from a product and professional services standpoint.

- The subscription costs tie into the number of digital interactions that occur within the VA. If the composite organization exceeds the number of interactions allotted within its tier, it pays overage fees at the same tiered rate (and bumps up to a higher tier during the next payment period).
- Nuance's professional services team has a variety of offerings, including initial implementation help, IT assistance with product upgrades, and content development and guidance. Interviewees reported that there was flexibility with services, and they could be chosen based on the company's needs.

Modeling and assumptions. For the analysis, Forrester assumes the following:

- The subscription tier was selected using 550,000 digital interactions per month (or 6,600,000 interactions per year).
- The composite organization relies on all aspects of Nuance's professional services. This reliance was widely varied among interviewees. Some companies wanted to own the content development piece themselves, while others felt that they could handle the IT components in-house.

Risks. The risks associated with the Nuance subscription costs and fees category are as follows:

- The number of digital interactions can vary by company and by industry and, since that is the basis for the subscription tier selected, it's worth noting that other companies — even those with a similarly sized customer base or annual revenue — may belong in a different tier.
- The usage of professional services varies widely by organizations, and interviewees noted that Nuance allows them flexibility in the level of services they agree to utilize.

Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of less than $2.28 million.

Nuance Subscription Costs And Fees						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
D1	Subscription costs	Composite		$660,000	$660,000	$660,000
D2	Professional services costs	Composite	$150,000	$80,000	$75,000	$70,000
Dt	Nuance subscription costs and fees	D1+D2	$150,000	$740,000	$735,000	$730,000
	Risk adjustment	↑15%				
Dtr	Nuance subscription costs and fees (risk-adjusted)		$172,500	$851,000	$845,250	$839,500
	Three-year total: $2,708,250			**Three-year present value: $2,275,419**		

ADMINISTRATIVE COSTS

Evidence and data. This cost category represents the internal resources and costs that go into managing Nuance.

- Based on feedback from the six interviewees, the number of people dedicated to the Nuance VA project amounts to about 3 to 4 FTEs.

> **"The Virtual Assistant is totally scalable, but it's also not a self-playing piano. You need to put in effort both from a development standpoint but also from a content standpoint. I mean really 'quality assure' the output of the virtual assistant — that is super crucial."**
>
> *Team manager, virtual assistant content, finance*

- At the composite organization, a team of 10 individual roles makes up the 3 to 4 FTEs. Each of the 10 individual roles partially contribute time to maintain the Nuance VA. These 10 people represent a mix of IT, management, operations, and content roles.

Modeling and assumptions. For the analysis, Forrester assumes the following:

- The salary average is based on one director-level operations position and two managerial ones.
- The assumption is each of the 10 roles contributes partial time to the VA project, amounting to 3 to 4 FTEs.

Risks. The risks associated with the administrative costs category are as follows:

- The balance between using internal resources versus Nuance professional services widely varies from company to company. Even among interviewees, there were differences in how companies either outsourced to Nuance or kept things in-house.

- Salaries also are variable, depending on industry, geography, and the skill set of the individual who is in that job role.
- The amount of time spent on Nuance is also widely variable depending on a number of factors.

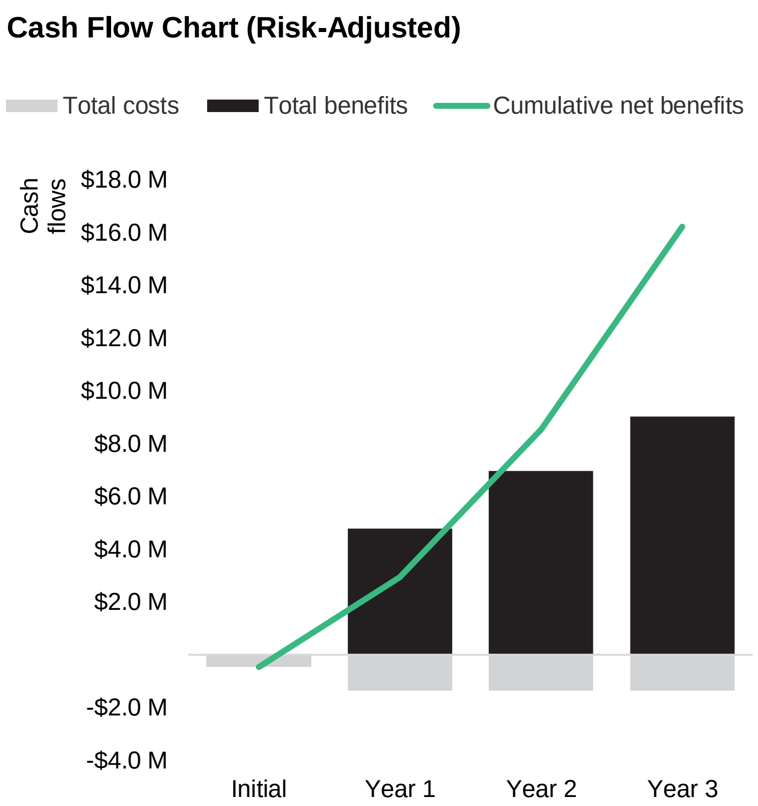
Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of less than $1.58 million.

Administrative Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Number of team members with roles partially supporting the Virtual Assistant (VA)	Interviews	10	10	10	10
E2	Percent of time spent on VA	Assumption	20%	35%	35%	35%
E3	Average team member salary (annual)	Composite	$128,000	$128,000	$128,000	$128,000
Et	Administrative costs	E1*E2*E3	$256,000	$448,000	$448,000	$448,000
	Risk adjustment	↑15%				
Etr	Administrative costs (risk-adjusted)		$294,400	$515,200	$515,200	$515,200
	Three-year total: $1,840,000		**Three-year present value: $1,575,626**			

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS



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	($466,900)	($1,366,200)	($1,360,450)	($1,354,700)	($4,548,250)	($3,851,045)
Total benefits	$0	$4,775,227	$7,185,316	$9,560,062	$21,520,604	$17,462,007
Net benefits	($466,900)	$3,409,027	$5,824,866	$8,205,362	$16,972,354	$13,610,962
ROI						353%
Payback (months)						<6

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

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

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.

PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.

NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.

RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.

DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.

PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Appendix B: Endnotes

[1] Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.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