

FORRESTER®

# **The Total Economic Impact™ Of A Contact Center Transformation Powered By IBM**

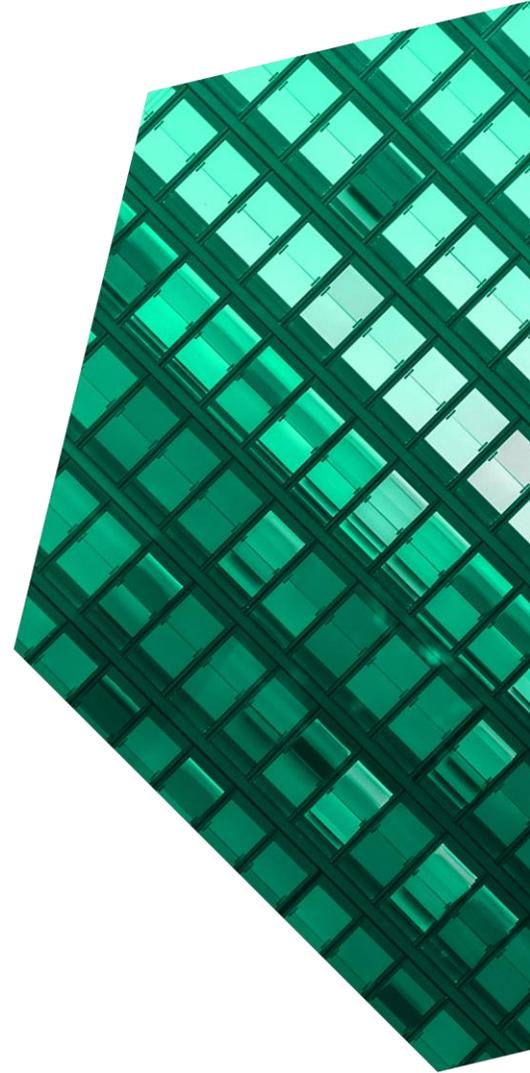
Cost Savings And Business Benefits  
Enabled By IBM Services and Solutions

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## ABOUT FORRESTER CONSULTING

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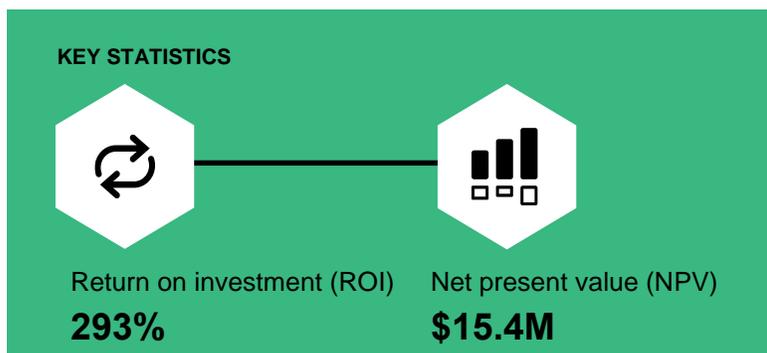
## Executive Summary

According to Forrester research, the historically slow-changing contact center industry has become dynamic thanks to new digital channels, remote agent work, and AI technology that pervades all aspects of service. Today's vibrant contact center market is defined by a shift to multitenancy, integrated suites that overlay customer interaction management, self-service, embedded AI, and enhanced workforce optimization.<sup>1</sup>

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by working with IBM to both migrate to the cloud from legacy on-premises contact center core systems and to build a layer of AI functionality to further improve contact center efficiencies. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of the mix of IBM services and solutions that enables such contact center transformations. IBM services helps organizations migrate from legacy on-premises contact center core systems to cloud-based CRMs. IBM services also builds out a layer of [AI](#) powered by IBM [Watson Assistant](#) and [Watson Discovery](#) to further streamline operational practices and workflows in contact centers.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed a financial services organization with experience using IBM services to migrate to cloud-based CRM solutions as well as AI functionality through IBM Watson Assistant and Watson Discovery to enhance their contact center operations and customer service efforts. Forrester used this experience to project a three-year financial analysis.

Prior to partnering with IBM for consulting services and AI solutions, the interviewed decision-makers with an organization that had a disjointed approach to contact center operations in that each service area had distinct channels for customer and employee



interactions tied to separate on-premises servers. This approach meant higher operational costs from both total agent count and the infrastructure in place to support them. Additionally, customer experiences were impacted by confusing channel options (think 50 phone numbers or more) and prolonged interaction times that led to a higher likelihood of dissatisfaction.

After the investment in IBM AI solutions and the partnership with IBM services, the interviewees' organization moved to a cloud-based CRM and developed an AI platform that enabled streamlined operations and increased agent productivity. Decision-makers incorporated AI through IBM Watson virtual assistants that offset basic inquiries, escalate to live agents when appropriate, and surface answers during customer interactions. As a result, the organization saved on operational and resource costs, and it improved employee engagement and customer satisfaction by reducing average handle times. Overall, the contact center transformation gave the organization a foundation of modern technology to better meet today's employee and customer

expectations with enough flexibility to grow in the future as those expectations evolve and change over time.

## KEY FINDINGS

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

- **In Year 1, 55% of interactions were deflected from the contact center by utilizing virtual agents.** The introduction of virtual agents to customer-facing employees and customer channels deflected interactions from landing in contact centers by 60% on average each year. Fewer escalated interactions reduced full-time agent headcount and the need for temporary agents previously required to meet peak service times. Total agent reductions saved \$17.5 million in total during the three-year investment.
- **Saved \$1.2 million each year by avoiding licensing for the on-premises contact center system.** The contact center system was an on-premises system that required expensive licensing for agents. Introducing a cloud-based AI platform reduced agent headcount and the need for temporary resources. Licensing savings totaled \$2.7 million during the three-year investment.
- **Average handle times for interactions to the contact center decreased by 20%.** Smart routing and the addition of classification data reduced the need for multiple transfers and repetitive information-taking during interactions that landed in contact centers. More efficient interactions meant lower average handle times that improved agent productivity. Agent productivity saved the organization a total of \$569.8K during the three-year investment.

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

- **Improved agent and customer experiences.** Virtual agents offloaded simple, frequently asked

questions from agents. Therefore, agents spent more time on higher-complexity interactions that improved customer engagement and had a larger impact on customer retention. By leveraging AI properties layered onto the organization's CRM system, agents had more context and resources available within one interface to assist in handling those more complex interactions. This improved their employee experiences and customer service levels. Customers benefited from more efficient interactions with agents who valued their time, and this resulted in better outcomes.

- **Improved ability to upsell/cross sell.** Integration with CRM system provided cross-channel profile data for outbound customer calls. The additional data helped employees improve upsell and cross-sell opportunities that ultimately resulted in more revenue.

**Costs.** Risk-adjusted PV costs include:

- **Fees to IBM.** The organization paid fees to IBM that included annual fees for AI solutions and project-based consulting fees for the CRM integration and AI project that occurred in Year 3. Fees paid to IBM totaled \$1.2 million during the three-year investment.
- **Resource time spent on virtual agent development.** Virtual agent development required both internal IT and professional services resource time. Virtual agent development included building new bots and iterating on existing bots. Therefore, development was an ongoing effort that spanned the three-year investment. Resource time spent on development cost the organization a total of \$4.1 million.

The interview and financial analysis found that this customer experiences benefits of \$20.7 million over three years versus costs of \$5.3 million, adding up to a net present value (NPV) of \$15.4 million and an ROI of 293%.



ROI  
**293%**

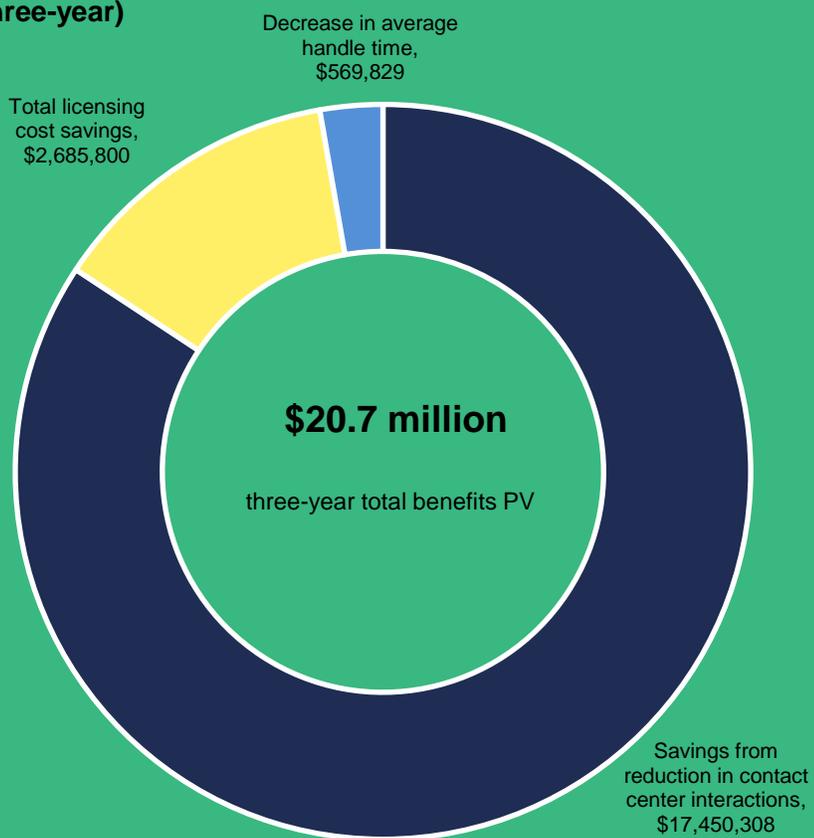


BENEFITS PV  
**\$20.7M**



NPV  
**\$15.4M**

**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 a contact center transformation with IBM.

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 a contact center transformation with IBM can have on an organization.

Financial model considerations are based on customer interview data and are supplemented with assumptions made in conjunction with Forrester and market data where necessary.

### DISCLOSURES

Readers should be aware of the following:

This study is commissioned by IBM and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in a contact center transformation with IBM.

IBM reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

IBM provided the customer name for the interview but did not participate in the interview.



### DUE DILIGENCE

Interviewed IBM stakeholders and Forrester analysts to gather data relative to the IBM contact center transformation.



### CUSTOMER INTERVIEW

Interviewed decision-makers at an organization that implemented a contact center transformation with IBM to obtain data with respect to costs, benefits, and risks.



### FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interview using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organization.



### CASE STUDY

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

# The Customer Journey Of A Contact Center Transformation With IBM

## ■ Drivers leading to the contact center transformation investment

### INTERVIEWED ORGANIZATION

Forrester interviewed decision-makers with an organization that utilized IBM consulting services to migrate to a cloud-based CRM and build out an AI platform with IBM Watson Assistant and Watson Discovery. The organization has the following characteristics:

- The organization is a large financial services (banking) organization located in Europe with 16 million customers and 40,000 employees.
- More than 800 total contact center agents service both employee and customer interactions that began at 8 million annually and currently total 13 million annually.
- Communication channels include phone, email, and chat/messaging through mobile apps and websites and some voice assistants.

### KEY CHALLENGES

Prior to the investment, the interviewees' organization had an on-premises contact center solution that siloed contact channels by department. As a result, customers and employees had to choose from many different phone numbers and emails to meet their service needs. Moreover, agents lacked a holistic view of the customer and their interactions over all channels, and they could not personalize assistance. Structuring the contact center approach in this way led to common challenges, including:

- **High operational expenses.** Segmenting contact channels by department meant that the organization had to carry and pay for the many phone numbers and emails tied to different servers. Disparate communication channels per service unit required additional agents to cover all areas of the business. The organization paid

licensing fees for the added headcount required to handle high volumes of interactions from both employees and customers across all service areas. Additionally, as the organization grew the number and types of communication channels, decision-makers needed to add more infrastructure to the existing architecture. This contributed to higher operational costs and restricted future flexibility.

- **Agent inefficiencies.** The contact center core system ran on multiple servers tied to specific service areas. This not only contributed to high operational costs, but it also impacted agent efficiencies and engagement levels. Agents were rendered less effective due to the disconnected solution. When an interaction arrived at the contact center, there was little to no information attached to provide context for the question or the journey that brought the customer or employee to the agent. Therefore, agents often delivered fragmented experiences due to a lack of visibility into interactions across all channels. Additionally, every interaction was directed to an agent, which meant that agents often answered the same simple questions repeatedly. Therefore, agents often spent time on less engaging or professionally satisfying activities like forwarding requests to different departments and answering FAQs.
- **Elevated customer service expectations.** Customers wanted a mix of touchpoints for customer service, and they expected near-immediate resolution of issues.<sup>2</sup> However, without a single point of entry to the contact center, customers had to choose from disparate phone numbers and emails to try to match their needs with the right service area. This often led

to multiple transfers once an interaction was started to get the customer to the right person for assistance. However, while customers were transferred, the data accumulated from their previous agent interactions about their history or specific request was not. This meant a lot of repetition and delayed resolutions that negatively impacted customer experiences. Employees faced similar challenges as customers did when they reached out to contact center agents with questions. Any delay to getting them answers further impacted customer experiences.

### INVESTMENT OBJECTIVES

The organization's decision-makers searched for services and solutions that could:

- Assist in the migration from an existing on-premises contact center platform to a software-as-a-service (SaaS) CRM platform.
- Streamline contact center operations and reduce associated costs while maintaining flexibility to add communication channels and channel types as needed.
- Develop and introduce a smart layer of AI-powered virtual agents to deflect interactions away from contact centers and to provide answers and, in some cases, automations.
- Enable smart routing that includes profile data from the CRM system for inbound interactions that do end up in the contact center.

The organization's decision-makers chose to leverage an existing relationship with IBM by selecting its consulting services and IBM Watson Assistant and Watson Discovery. The organization began migration to the cloud and deployment of an AI platform in the following ways:

- IBM services enabled the migration to a SAAS CRM solution.

- Virtual agents were developed and introduced to employee channels before they were embedded in customer channels.
- New virtual agents were developed and dispatched across the organization while new digital channels were introduced each year.
- Existing virtual agents further improved their capabilities each year through both training and development iterations.
- By Year 3, virtual agents performed some automated transactions.
- The CRM system integration project spanned through Year 3, and it introduced additional profile data.

#### Key assumptions

- **800 agents**
- **>10M average contact center interactions annually**
- **4-minute average handle time in before state**

# Analysis Of Benefits

■ Quantified benefit data

| Total Benefits |   |             |             |              |              |               |
|----------------|---|-------------|-------------|--------------|--------------|---------------|
| Ref.           | Benefit   | Year 1      | Year 2      | Year 3       | Total        | Present Value |
| Atr            | Savings from reduction in contact center interactions | \$5,016,000 | \$6,840,000 | \$9,633,000  | \$21,489,000 | \$17,450,308  |
| Btr            | Total licensing cost savings                          | \$1,080,000 | \$1,080,000 | \$1,080,000  | \$3,240,000  | \$2,685,800   |
| Ctr            | Decrease in average handle time                       | \$205,200   | \$228,000   | \$259,350    | \$692,550    | \$569,829     |
|                | Total benefits (risk-adjusted)                        | \$6,301,200 | \$8,148,000 | \$10,972,350 | \$25,421,550 | \$20,705,937  |

## SAVINGS FROM REDUCTION IN CONTACT CENTER INTERACTIONS

**Evidence and data.** According to Forrester research, many banks have rolled out virtual agent offerings to add conversational interfaces to static self-service content and to deflect customers from expensive human agents for simple, straightforward, and reproducible questions. When the organization rolled out virtual agents, the work did not end there. It was equally important for those banks to constantly iterate on the implemented virtual agents to meet rising customer expectations from their experiences across other industries, such as retail, travel, and tech.<sup>3</sup>

The interviewees' organization streamlined interactions with the contact center by leveraging AI-powered virtual agents to reduce the amount of low-value and simplistic inquiries that were previously routed to live agents. The organization saved on costs associated with agent headcount for full-time staff, and it was better prepared to handle peak service times. This also reduced the need for temporary agents. Decision-makers iterated upon existing virtual agents and added new virtual agents each year to meet ever-shifting service level expectations in the market. Therefore, virtual agents became better equipped to answer customer and employee requests over time and, eventually, they were able to perform some automated functions. This

further improved deflections from the contact center and the associated cost savings.

- An executive with the interviewed organization said that “Over 50% of the questions that [currently] come from employees to the contact center are solved by a virtual agent.”
- Additionally, about 5% of the total questions were fully automated. This means virtual agents performed actions for simple requests such as resetting passwords.
- The same executive also indicated that virtual agent efficiencies reduced the need for temporary agents during peak times, and this rang true during the COVID-19 pandemic. They said: “It’s more expensive [to hire temporary agents] than to just train a virtual agent to give widely requested information to many customers at the same time. [During the pandemic,] we received thousands of different phone calls at that moment because people were nervous [about the pandemic], and they wanted to have some information about government aids and the like. The virtual agent can manage these thousands of calls, whereas for the human beings — the agents of the contact center — it would be impossible to manage this increase of traffic without adding a lot more people.”

**Modeling and assumptions.** For the purposes of the financial model, Forrester assumes the following:

- The volume of interactions routed through virtual agents per year grows from 8 million in Year 1, to 13 million by Year 3 to account for the introduction of chatbots to additional channels each year (i.e. starts with employee only channels and grows to include customer channels as well).
- The success of the virtual agents in deflecting interactions away from the contact center also grows each year of the investment. The organization constantly iterates upon existing virtual agents to improve functionality. This includes teaching virtual agents new and more detailed answers.
- The average handle time for interactions that would have previously been deposited to the contact center is 4 minutes.
- While contact center rates vary depending on agent seniority, the complexity level of

interactions handled, and the geographical location of the contact center, the assumed average fully loaded hourly rate is \$19.

**Risks.** Savings from the reduction in contact center interactions may vary depending on the following:

- The volume of interactions the contact center receives each year and the virtual agent deployment plan.
- The level of virtual agent development and training dedicated to building new virtual agents and iterating on existing virtual agents each year.
- Average contact center metrics such as handle times and fully loaded hourly rates for agents. Average hourly rates for agents might also change over time as agents transition to handling the more difficult work that requires upskilling and coaching and increases their hourly rate.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$17.5 million.

| Savings From Reduction In Contact Center Interactions |   |                     |  |             |              |
|---|---|---------------------|--|-------------|--------------|
| Ref.  | Metric  | Calculation         | Year 1                                 | Year 2      | Year 3       |
| A1  | Average number of interactions routed through virtual agents per year | Customer Interviews | 8,000,000                              | 10,000,000  | 13,000,000   |
| A2  | Reduction in interactions due to virtual agent deflections            | Customer Interviews | 55%                                    | 60%         | 65%          |
| A3  | Number of interactions eliminated due to virtual agents               | A1*A2               | 4,400,000                              | 6,000,000   | 8,450,000    |
| A4  | Average handle time before (minutes)                                  | Customer Interviews | 4                                      | 4           | 4            |
| A5  | Contact center agent hours saved due to virtual agent deflections     | (A3*A4)/60          | 293,333                                | 400,000     | 563,333      |
| A6  | Average hourly rate for agents  | Assumption          | \$19                                   | \$19        | \$19         |
| At  | Savings from reduction in contact center interactions                 | A5*A6               | \$5,573,333                            | \$7,600,000 | \$10,703,333 |
|   | Risk adjustment   | ↓10%                |  |             |              |
| Atr   | Savings from reduction in contact center interactions (risk-adjusted) |                     | \$5,016,000                            | \$6,840,000 | \$9,633,000  |
| Three-year total: \$21,489,000                        |   |                     | Three-year present value: \$17,450,308 |             |              |

**TOTAL LICENSING COST SAVINGS**

**Evidence and data.** The organization’s contact center system was an on-premises solution that required all contact center agents to have expensive licenses. IBM services helped the organization transition to a SaaS CRM solution and to build a layer of AI on top of that core system using Watson Assistant and Watson Discovery. Introducing IBM services and solutions saved the organization costs previously spent on licensing for a larger agent workforce by reducing the volume of interactions that reach human agents and, subsequently, the volume of full-time agents. The organization benefited from cost savings as well as the flexibility afforded by a cloud-based solution that did not sacrifice growth and innovation to budget. The new flexibility meant that the organization could add communication channels without adding infrastructure or agents to support them.

- An executive at the organization said: “We saved on the costs associated with on-prem contact

center technology. Before, we had to pay for more licenses each time we hired new agents, which impacted our capex. Today, we do not have to increase our contact center infrastructure costs every time we hire new agents or whenever we introduce new functionalities or products. In this way, our new architecture affords us increased scalability as well.”

**Modeling and assumptions.** For the purposes of the financial model, Forrester assumes the following:

- Cost savings total \$1.2 million per year from avoided licensing fees associated with on-premises contact center technology.

**Risks.** The total licensing cost savings may vary depending on the following:

- Core contact center system in place at the time of the IBM investment and the associated licensing structure, as this benefit is specific to on-premises related costs.

- Turnover rates, full-time agent capacity, and temporary agent requirements that impact hiring and associated license provisioning.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$2.7 million.

| Total Licensing Cost Savings         |  |                     |  |             |             |
|--------------------------------------|--|---------------------|--|-------------|-------------|
| Ref.                                 | Metric                                       | Calculation         | Year 1                                       | Year 2      | Year 3      |
| B1                                   | Annual licensing costs before                | Customer Interviews | \$1,200,000                                  | \$1,200,000 | \$1,200,000 |
| Bt                                   | Total licensing cost savings                 | B1                  | \$1,200,000                                  | \$1,200,000 | \$1,200,000 |
|                                      | Risk adjustment                              | ↓10%                |  |             |             |
| Btr                                  | Total licensing cost savings (risk-adjusted) |                     | \$1,020,000                                  | \$1,020,000 | \$1,020,000 |
| <b>Three-year total: \$3,240,000</b> |  |                     | <b>Three-year present value: \$2,685,800</b> |             |             |

### DECREASE IN AVERAGE HANDLE TIME

**Evidence and data.** Prior to the investment in AI and SaaS CRM cloud contact center solutions, the interviewees’ organization received inbound interactions from disparate channels tied to separate servers per service area. This meant that customers and employees rarely landed where they needed to be in terms of service area on the first try, and they often had to be transferred multiple times before satisfying the request. Multiple transfers and a lack of accompanying data tied to the interaction extended handle times. Decision-makers embedded smart routing in the organization’s contact center to enable better and faster interactions that landed at the appropriate service provider more quickly. Additionally, decision-makers integrated the organization’s CRM system with its contact center solution. This added classification data to both inbound and outbound interactions and provided better context to the agent handling the request. As a result, agents experienced improved productivity through reduced average handle times (AHT).

- An executive at the organization indicated how current productivity measures derive from reduced handle times. They said: “Nowadays, the productivity comes from an interaction that it is well-routed and well-classified. We have

classifications that indicate which agent can answer the specific question. This gives efficiency by reducing the need to perform transfers that also require repetition from the customer. This classification is part of our cognitive solution that is powered by IBM Watson, so it is part of a rules-based architecture that can learn and improve over time. This brings efficiency to the interaction in terms of time [AHT] as well as an improved customer experience because we can better answer customer requests that are routed and classified correctly.”

**Modeling and assumptions.** For the purposes of the financial model, Forrester assumes the following:

- The volume of interactions handled by live contact center agents results from the total volume of interactions less those that are successfully deflected from the contact center through virtual agents.
- The average handle time is reduced by 20% after the investment compared to the before state.
- While contact center rates vary depending on agent seniority, the complexity level of interactions handled, and the geographical location of the contact center, the assumed average fully loaded hourly rate is \$19.

- 25% of the time recovered by agents is captured for productivity.



Specifically, as more reproducible work is automated by virtual agents, agent focus shifts to the more difficult work and, therefore, handle times might extend.

- Average fully loaded hourly rates for contact center agents and the percentage of productivity captured by the impacted agents. Additionally, as agents focus on more difficult work, they may require upskilling or coaching that increases their hourly rate.

**Risks.** The decrease in average handle time may vary depending on the following:

- The volume of interactions that land at a contact center agent.
- Average handle times experienced before the investment and those after the investment.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$569.8K.

### Decrease In Average Handle Time

| Ref.                               | Metric  | Calculation             | Year 1                                     | Year 2    | Year 3    |
|------------------------------------|---|-------------------------|--|-----------|-----------|
| C1                                 | Total volume of interactions handled by agents per year | A1-A3                   | 3,600,000                                  | 4,000,000 | 4,550,000 |
| C2                                 | Average handle time before (minutes)                    | Customer Interview      | 4  | 4         | 4         |
| C3                                 | Reduction in average handle time after                  | Assumption              | 20%  | 20%       | 20%       |
| C4                                 | Agent hours saved                                       | $C1 * ((C2 * C3) / 60)$ | 48,000                                     | 53,333    | 60,667    |
| C5                                 | Average hourly rate for agents                          | A7                      | \$19                                       | \$19      | \$19      |
| C6                                 | Productivity capture rate                               | Assumption              | 25%  | 25%       | 25%       |
| Ct                                 | Decrease in average handle time                         | $C4 * C5 * C6$          | \$228,000                                  | \$253,333 | \$288,167 |
|                                    | Risk adjustment   | ↓10%                    |  |           |           |
| Ctr                                | Decrease in average handle time (risk-adjusted)         |                         | \$205,200                                  | \$228,000 | \$259,350 |
| <b>Three-year total: \$692,550</b> |   |                         | <b>Three-year present value: \$569,829</b> |           |           |

## UNQUANTIFIED BENEFITS

The organization experienced additional benefits that interviewees were not able to quantify. These include:

- **Improved employee and customer experiences.** The interviewees said they saw improvements to both the organization's employee experience and customer experience.
  - **For agents:** The introduction of virtual agents deflected large volumes of interactions away from human agents in contact centers. The interactions that virtual agents handled were often FAQs and more simple, straightforward, and repeatable questions and requests. Therefore, interactions that landed in the contact center were more complex and nuanced. But with the new CRM and AI integrations, customer interactions were supported with customer profile information and inquiry-specific information. Agents had easily accessible context and more time to spend on more professionally satisfying interactions. This improved engagement levels and lengthened tenure. Additionally, some improvements to agent experiences directly impacted customer experiences as well. For example, the organization was able to keep extended service hours through virtual agents without requiring agents to work undesirable shifts.

**“One of the main advantages of introducing virtual agents is that they are available 24 hours per day and seven days a week attending to any question and any problem from employees or the customers. We did not have this level of service before. With agents, we could only open the contact center from 8 a.m. to 5 p.m. So, we now have a better service for many of the customers and employees.”**

*Head of AI and analytics, financial services*

- **For customers:** Virtual agents, smart-routing, and the addition of profile data facilitated interactions with the organization through expedited handle times, streamlined communication channels, and reduced burden on the customer to provide information and context about the request. Interviewees said that they feel as if the organization's Net Promoter Scores (NPS) have greatly improved since the investment in IBM's services and solutions for contact center transformation.<sup>4</sup>

- **Revenue from more upsell/cross-sell opportunities.** With the CRM system integration, the interviewees’ organization started to realize benefits around outbound customer interactions. Agents expressed a heightened ability to upsell and cross-sell to customers due to access to customer relationship data that ultimately led to additional revenue.

**“We know that the ability to upsell or cross-sell has increased thanks to [our partnership and investments with IBM]. Agents have all the information about the different interactions with customers through virtual agents, [human] agents, and staff in the branches when they make new outbound interactions or actions with customers. This information is readily available, and the agent can mix the information they get from different channels and different interactions as needed.”**

*Head of AI and analytics, financial services*

at the same speed as customer expectations through innovations, such as:

- **More transactional virtual agents** that perform complete automations. The latest project teaches virtual agents to cancel lost or stolen credit cards.
- **Strong analytics** to inform the business of changing customer needs, to build new virtual agents, and to train existing virtual agents to continue opening more digital channels for communication.
- **Going 100% cognitive**, which means that virtual agent interactions will feel the same as human agent interactions.

**“We want to eliminate — to destroy — the typical application that includes menus and fields to fill in with information. We want to transform our applications to mirror a conversation with an employee. It will be 100% conversational.”**

*Head of AI and analytics, financial services*

## FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement IBM services and AI solutions and later realize additional uses and business opportunities. These include:

- **Evolving at the rate of customer expectations.** Decision-makers untethered the organization from legacy on-premises infrastructure to provide for a more flexible future. They plan to continue to build upon the new cloud environment to remain relevant and modern to their customers. Contact center staff plans to evolve and change

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

# Analysis Of Costs

■ Quantified cost data

| Total Costs |  |             |             |             |             |             |               |
|-------------|--|-------------|-------------|-------------|-------------|-------------|---------------|
| Ref.        | Cost   | Initial     | Year 1      | Year 2      | Year 3      | Total       | Present Value |
| Dtr         | Fees to IBM                                      | \$0         | \$55,000    | \$165,000   | \$1,361,691 | \$1,581,691 | \$1,209,422   |
| Etr         | Resource time spent on virtual agent development | \$1,375,000 | \$1,078,000 | \$1,078,000 | \$1,078,000 | \$4,609,000 | \$4,055,826   |
|             | Total costs (risk adjusted)                      | \$1,375,000 | \$1,133,000 | \$1,243,000 | \$2,439,691 | \$6,190,691 | \$5,265,248   |

## FEES TO IBM

**Evidence and data.** The organization paid fees to IBM including annual fees associated with the AI solutions (Watson Assistant and Watson Discovery) and those associated with the CRM projects for migration and integration. The AI solution fees were related to virtual agent usage for employees and customers while the CRM projects were dependent on the size and scope of the project.

**Modeling and assumptions.** For purposes of the financial model, Forrester assumes the following:

- Annual fees for IBM's AI solutions start at \$50K in Year 1 and grow to \$200K in Year 3.

- The CRM project fees total \$1.04 million.

**Risks.** The fees to IBM may vary depending on the following:

- Annual fees for AI solutions based on customer interactions with virtual agents and the volume of contact agents.
- Project scope and deployment for CRM migration and integration.

To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$1.2 million.

| Fees To IBM                          |                                  |             |  |          |           |             |
|--------------------------------------|----------------------------------|-------------|--|----------|-----------|-------------|
| Ref.                                 | Metric                           | Calculation | Initial                                      | Year 1   | Year 2    | Year 3      |
| D1                                   | CRM implementation fees          |             |  |          |           | \$1,037,901 |
| D2                                   | Annual fees for IBM AI solutions |             |  | \$50,000 | \$150,000 | \$200,000   |
| Dt                                   | Fees to IBM                      | D1+D2       | \$0  | \$50,000 | \$150,000 | \$1,237,901 |
|                                      | Risk adjustment                  | ↑10%        |  |          |           |             |
| Dtr                                  | Fees to IBM (risk-adjusted)      |             | \$0  | \$55,000 | \$165,000 | \$1,361,691 |
| <b>Three-year total: \$1,581,691</b> |                                  |             | <b>Three-year present value: \$1,209,422</b> |          |           |             |

## RESOURCE TIME SPENT ON VIRTUAL AGENT DEVELOPMENT

**Evidence and data.** The organization's decision-makers dedicated internal resources to new virtual agent development and development iterations. Additionally, they pulled from professional services resources for development support. Time spent on development across dedicated internal and third-party resources led to costs for the organization.

- An executive at the organization explained how development work was completed for virtual agents. They said: "Internally, in our IT department, we have two-and-a-half people [dedicated to virtual agent development and ongoing refinement]. Externally, either through IBM or another service provider that we engage with for chatbot development, we have a team of about 10 people. We need the support of a team this size because virtual agent development is a continuous line of work at this moment, given the number of evolutions we go through."
- The same executive explained how development cycles progressed over the course of the investment. They said: "The time we spent on the first [virtual agent] project was near to a year of work. However, currently, we complete virtual agent development projects in just one to three months. This includes work around launching new channels, such as virtual agents for voice assistants. We spent just three months integrating these new channels into our cognitive architecture, so it's fair to say that we do it a lot quicker now than we did at the beginning of the project."

**Modeling and assumptions.** For purposes of the financial model, Forrester assumes the following:

- The initial virtual agents take about 12 months to develop, which is accounted for in the initial period.

- The organization dedicates 2.5 internal resources to new virtual agent development and continual improvements that include fine-tuning and optimizing existing virtual agents during the three-year investment.
- The organization uses a group of 10 professional services resources as needed to assist in development efforts. Their involvement is 50% in the initial period, and it drops to 35% in subsequent years.

**Risks.** Resource time spent on virtual agent development may vary depending on the following:

- The size and scope of the virtual agent development program as well as the volume of dedicated resources.
- The ratio of internal development resources to external resources and the percentage of dedicated time for those third-party resources.
- The fully loaded annual salaries for both internal resources and external resources.

To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$4.1 million.

### Resource Time Spent On Virtual Agent Development

| Ref.                                 | Metric   | Calculation                              | Initial                                      | Year 1      | Year 2      | Year 3      |
|--------------------------------------|--|--|--|-------------|-------------|-------------|
| E1                                   | Internal development resources   |  | 2.5  | 2.5         | 2.5         | 2.5         |
| E2                                   | Fully loaded salary for internal development resources                 | Assumption                               | \$140,000                                    | \$140,000   | \$140,000   | \$140,000   |
| E3                                   | Professional services resources  |  | 10   | 10          | 10          | 10          |
| E4                                   | Professional services resource time spent on virtual agent development |  | 50%  | 35%         | 35%         | 35%         |
| E5                                   | Fully loaded salary for professional services resources                | Assumption                               | \$180,000                                    | \$180,000   | \$180,000   | \$180,000   |
| Et                                   | Resource time spent on virtual agent development                       | $(E1 \cdot E2) + (E3 \cdot E4 \cdot E5)$ | \$1,250,000                                  | \$980,000   | \$980,000   | \$980,000   |
|                                      | Risk adjustment  | ↑10%                                     |  |             |             |             |
| Etr                                  | Resource time spent on virtual agent development (risk-adjusted)       |  | \$1,375,000                                  | \$1,078,000 | \$1,078,000 | \$1,078,000 |
| <b>Three-year total: \$4,609,000</b> |  |  | <b>Three-year present value: \$4,055,826</b> |             |             |             |

### OTHER COST CONSIDERATIONS

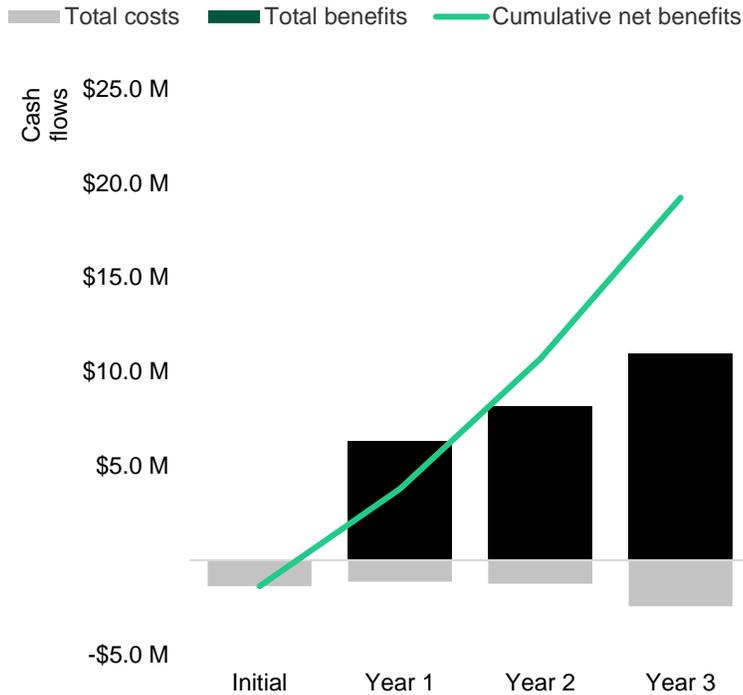
In addition to the fees paid to IBM and the internal time spent on virtual agent development, there were additional cost considerations for the interviewed customer. Additional cost considerations include the following:

- Training time spent for agents on the new functionality.
- Other software licensing requirements in the new cognitive environment, such as those for Voice Response Units and Speech Analytics & Transcription tools.

# Financial Summary

## CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

### Cash Flow Chart (Risk-Adjusted)



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

**These risk-adjusted ROI and NPV 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    | (\$1,375,000) | (\$1,133,000) | (\$1,243,000) | (\$2,439,691) | (\$6,190,691) | (\$5,265,248) |
| Total benefits | \$0           | \$6,301,200   | \$8,148,000   | \$10,972,350  | \$25,421,550  | \$20,705,937  |
| Net benefits   | (\$1,375,000) | \$5,168,200   | \$6,905,000   | \$8,532,659   | \$19,230,859  | \$15,440,689  |
| ROI            |               |               |               |               |               | 293%          |

# 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%.

## Appendix B: Endnotes

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<sup>1</sup> Source: “The Forrester Wave™: Contact-Center-As-A-Service (CCaaS) Providers, Q3 2020,” Forrester Research, Inc., August 26, 2020.

<sup>2</sup> Source: “Begin Designing Your Conversational Banking Strategy Now,” Forrester Research, Inc., March 8, 2018.

<sup>3</sup> Ibid

<sup>4</sup> Net Promoter and NPS are registered service marks, and Net Promoter Score is a service mark, of Bain & Company, Inc., Satmetrix Systems, Inc., and Fred Reichheld.

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