

FORRESTER®

The Total Economic Impact™ Of Replicant Voice

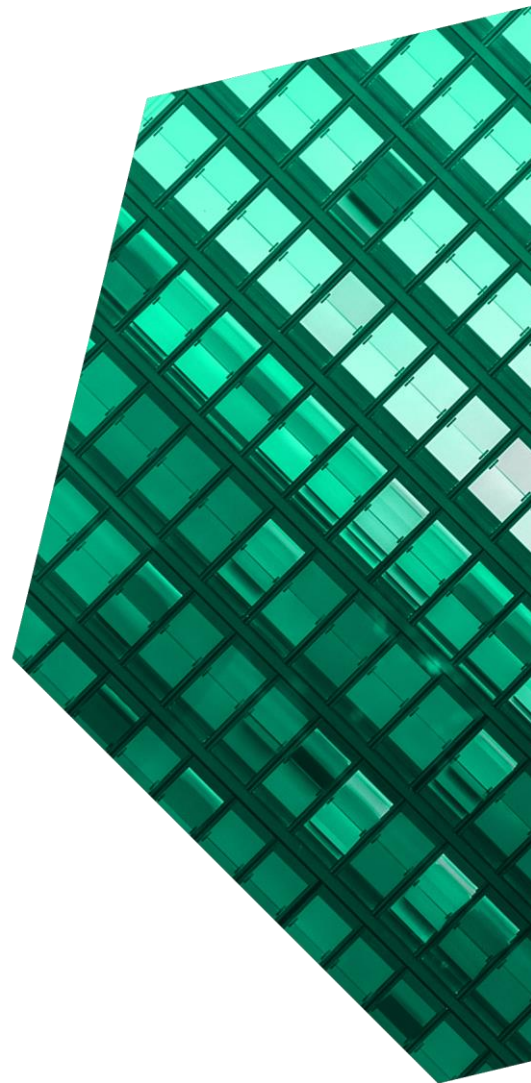
Cost Savings And Business Benefits
Enabled By Replicant Voice

APRIL 2021

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Executive Summary

In a complex commercial setting, Replicant’s autonomous contact center demonstrated an elastic capacity to handle rapid growth in customer demand and eliminate hold times, reduce the need for investment in human oversight, and equal the success of human counterparts at far less the cost of the BPO provider it replaced. It also provided deeper analytical insights into caller interactions, improved business performance, and became an important extension of the organization’s operations.

Replicant commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by implementing [Replicant Voice](#), an autonomous contact center. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Replicant’s solution on their customer service strategy.

Replicant Voice is an autonomous contact center that leverages voice AI to deliver always-on, elastic call-center capacity for customer service. Akin to agents, Replicant’s “Thinking Machine” can interact and speak naturally with customers and accurately resolve issues. Replicant Voice is a fully managed service, and it elastically scales to eliminate hold times and manage unpredictable customer demand. It can be deployed in weeks to handle a variety of inbound and outbound call flows, and it integrates with existing contact center and CRM software for deeper automation and customer insights. In this instance, the food delivery service Postmates turned to Replicant Voice to replace a business process outsourcing (BPO) provider that oversaw call center operations for placing outbound food delivery orders by phone to non-network restaurants.

Postmates implemented Replicant Voice over a six-week timeframe in March 2020, and it was able to overcome the challenges of relying on human capacity to effectively scale call-center operations to handle order spikes with Replicant’s low-latency outbound calling capabilities.

KEY STATISTICS



Return on investment (ROI)
110%



Net present value (NPV)
\$6.57M

In this study, Replicant’s autonomous contact center demonstrated the ability to elastically scale to meet fluctuating customer demand, accurately intake orders, and reduce costs.

Postmates was able to reduce spend on FTE resources responsible for managing queue lengths and interventions during increased order spikes alongside costs associated with managing and

“Of course, we were curious about how the conversations would go. Despite the noise and hubbub at these places, it went really well. People receiving these customer orders at the restaurants knew they were talking to a machine, and what we hadn’t thought about going in was the degree of empathy those receiving calls expressed in the conversation. We felt really good about the interactions.”

VP of product and operations, Postmates

training the BPO provider. In addition to cost savings, Postmates was also able to increase revenue by eliminating order cancellations caused by order delays from prior call-center inefficiencies after implementing Replicant Voice.

Forrester used the outcomes of Replicant's autonomous contact center effectiveness in 2020 to project a three-year financial analysis of its impact.

“We faced a pressing need to recreate our call center operations during the [COVID-19] pandemic. What struck me was how rapidly Replicant surmounted the learning curve with its AI to replace this function. It was by far the easiest technology integration I’ve ever done. We had a fully operational capability in six weeks.”

VP of product and operations, Postmates

KEY FINDINGS

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

- **Avoided BPO call-center costs for restaurant ordering and saved 55%.** Prior to using Replicant Voice, Postmates outsourced its call center operations across two BPO providers to handle rapid growth in fluctuating customer demand as order spikes increased. BPO costs were eliminated after Replicant's autonomous contact center replaced the BPO provider to place outbound food orders on behalf of customers ordering from non-network restaurants. Replicant completed the engineering and testing to create a fully managed and scalable “Thinking Machine” for Postmates in just six weeks. The cumulative total of this cost avoidance is projected to be worth \$12.1 million over three years.
- **Avoided the cost of a customer service operations manager to monitor, optimize, and**

intervene during order spikes for successful order deliveries. As a fully elastic and scalable service, Replicant's autonomous contact center automatically allocates system resources to handle order spikes to reduce delays. Prior to using Replicant Voice, Postmates had to dedicate a customer service manager to monitor queue length, to intervene to reallocate resources, and to provide fallback operations. Monthly oversight costs in managing the BPO provider and training BPO staff were eliminated. The cumulative total of this cost avoidance is projected to be worth \$204,000 over three years.

- **Increased revenue by avoiding order cancellations from order backlogs.** Replicant's autonomous contact center translated into higher revenue for Postmates. With the previous BPO provider, rapid spikes in mealtime demand created order backlogs and led to order cancellations. By eliminating order delays and increasing operational efficiencies, Replicant Voice reduced order cancellations and improved customer satisfaction, leading to an additional \$360,000 in revenue over three years.

“From order success to customer satisfaction, and in expanding customer options in how we compete in the marketplace, Replicant has been integral to what we set out to accomplish, and it is costing us significantly less to do so.”

VP of product and operations, Postmates

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

- **Replicant Voice opened the black box of call-center interactions.** Prior to using Replicant Voice, it was difficult for Postmates to analyze and derive insights from outbound food ordering call transcripts. Postmates now has deeper

insights into customer data and key call drivers as Replicant Voice automatically captures and transcribes customer conversations in real time, it makes every call searchable with (browser-like) search capabilities, and it automatically tags conversations by disposition to help improve business operations.

- Replicant’s autonomous contact center allowed Postmates to identify and remove low-performing restaurants that affected customer order success.** The Postmates team used call insights from Replicant Voice to identify restaurants with the lowest order-success rates. While removing these restaurants from Postmates’ platform slightly reduced the number of potential dining options for customers, it drove higher success rates in Year 1. And despite being revenue-neutral, it helped to maintain and improve customer satisfaction.
- Replicant nurtured qualities of patience and empathy with human counterparts.** Restaurant staff receiving order placement calls at non-network restaurants almost invariably recognized they were conversing with Replicant’s Thinking Machine. These human-to-machine interactions were not only engaging, but they were also more accurate than Postmates experienced with its previous BPO provider as restaurant staff ran into fewer instances of mispronounced food orders. Positive interactions with Replicant’s Thinking Machine became an important vehicle to increase Postmates’ brand awareness among non-network restaurants.
- Replicant expanded Postmates’ footprint for network restaurants.** Replicant’s autonomous contact center was helped create familiarity with Postmates’ delivery platform among non-network restaurants, therefore increasing the likelihood that they would become network restaurants. This increase in restaurant onboarding enhanced Postmates’ revenue and marketing efforts, but

the organization’s VP of product and operations was not able to quantify the benefit during the interview.

- Replicant was an important driver of customer satisfaction and repeat business.** Though not quantified in the interview, Postmates’ VP of product and operations described the capabilities of Replicant’s autonomous contact center. They said increasing order accuracy and having fewer orders canceled due to order delays were fundamental to improving customer satisfaction and overall brand proposition.

Costs. Risk-adjusted PV costs include:

- Year 1 Cost of \$2.6 million.** The cost of Replicant’s autonomous contact center is based on a per-call cost. This is significantly lower than the cost of Postmates’ previous BPO provider, saving 55%.
- FTE resources for deployment.** Postmates implemented Replicant Voice within a six-week timeframe, and it required four weeks of FTE engineering resources and two weeks of FTE analyst resources to oversee API integrations and order monitoring during the testing phase of deployment.

The interview and financial analysis found that this customer realized benefits of \$12.53 million over three years versus costs of \$5.96 million, adding up to a net present value (NPV) of \$6.57 million and an ROI of 110%.



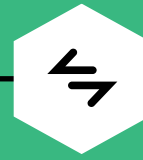
ROI
110%



BENEFITS PV
\$12.53M



NPV
\$6.57M



PAYBACK
**<6
months**

Benefits (Three-Year)

Avoided cost of previous BPO provider (risk-adjusted)

\$12.0M

Avoided cost of previous BPO management oversight

\$143.9K

Avoided revenue loss from orders cancelled due to long wait times

\$316.1K

Avoided external training cost for BPO order placing team

\$60.4K

Direct cost savings from Replicant Voice in replacing the BPO provider predominate.

The full picture of benefits includes avoiding cost of management oversight, staff training, and revenue loss associated with the BPO provider's order delays.

FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in an Replicant Voice.

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 Replicant Voice can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Replicant 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 Replicant.

Replicant 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.

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



DUE DILIGENCE

Interviewed Replicant stakeholders and Forrester analysts to gather data relative to Replicant's product.



CUSTOMER INTERVIEW

Interviewed decision-makers at an organization using Replicant 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 Replicant Voice Customer Journey

■ Drivers leading to the Replicant Voice investment

INTERVIEWED ORGANIZATION

Forrester interviewed a decision-maker from Postmates, which is an organization with experience using Replicant Voice. The organization has the following characteristics:

- 1,500 employees.
- \$500 million in annual revenue.
- Saw dramatic growth in demand with the onset of the COVID-19 pandemic.

KEY CHALLENGES

Postmates relied on a call-center BPO provider to place customer orders at nonpartner restaurants that were not yet set up on its platform. This non-network restaurant model allowed customers to place orders at a variety of restaurants, leading to higher customer satisfaction and increased revenue and market share.

Postmates' previous BPO service went offline due to the COVID-19 outbreak in mid-March 2020. In turn, Postmates needed to replace call-center operations to handle growing and unpredictable customer demand. The organization needed to find an elastic customer-service solution that could handle fluctuations in customer demand, natively integrate with existing contact-center software, and save on costs.

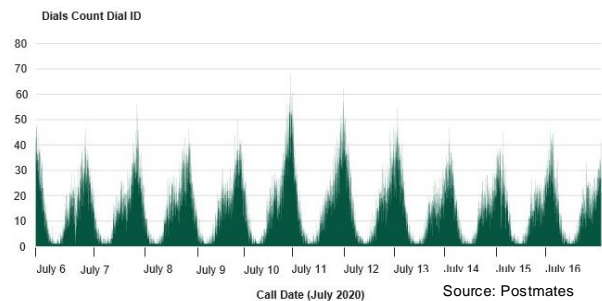
As such, Postmates struggled with common challenges, including:

- **Standing up a call center as quickly and effectively as possible while maintaining accuracy and order success rates on par or better than that of the BPO provider.** The VP of product and operations had the option to wait for the BPO provider to reconfigure in a

decentralized and less reliable, at-home work environment or to seek an alternative AI solution.

- **A rapid increase in demand for food delivery services during the pandemic meant that both Postmates and its customers would benefit from having as many options for restaurant delivery as possible.** Postmates decision-makers did not believe that increasing access to non-network restaurants during the pandemic by reverting to a BPO provider to manage outbound order placement would be a viable option. It was clear to the VP of product and operations that the organization needed a nimbler and more scalable solution.

Replicant Voice handled unpredictable spikes in order demand with no delay in placing orders.



- **Demand for food delivery services faces rapidly accelerating and relatively short-lived order spikes.** Postmates struggled to maintain the correct number of staff members needed to handle narrow but high-volume spikes in order demand. Before the pandemic, Postmates opted to use capacity from two BPO providers to manage demand, but it struggled as order queue backlogs persisted from call-center inefficiencies that caused delays and canceled orders.
- **Rapid spikes in orders required management to monitor queue lengths and to intervene to reduce the onset of long delivery times,**

cancellations, and customer dissatisfaction.

Postmates dedicated staff to monitoring queues and order fulfillment to avoid order disruptions and dissatisfied customers. This led to more management oversight and higher costs for Postmates.

SOLUTION

Replicant Voice provided an out-of-the-box solution that was configurable to Postmates' outbound use case and could be implemented in weeks with very little training data. Customized APIs integrated Replicant's and Postmates' systems to execute orders and to create transparency into order status. As a fully managed service, Replicant Voice required minimal implementation and development efforts. Testing and deployment began in April 2020 and live calls started in May. By the first week of June, Replicant Voice was handling 100% of Postmates' outbound food-ordering traffic. Replicant's ability to deliver elastic capacity meant that all service-level agreements (SLAs) for outbound order placement were met with fewer delays and, thus, fewer orders were canceled.

USE CASE DESCRIPTION

Postmates needed a solution that could replace and improve upon existing BPO operations to place outbound orders by phone to non-network restaurants and restaurants without a Postmates electronic device for processing orders. When an outbound order placement call would come in, a

restaurant staff member would answer immediately or Replicant's Thinking Machine would navigate an interactive voice response (IVR) system to reach an order taker.

“A daily operation as busy as Postmates requires broad and deep focus for us as managers. Having Replicant handle non-network orders without requiring the same degree of oversight as the BPO [provider] is a huge benefit to us.”

VP of product and operations, Postmates

The first steps in the implementation process, which took two weeks, included testing API access to receive and place orders and to monitor order status. Further steps included A/B testing different conversation scripts to determine efficacy in placing orders, ensuring the Thinking Machine could navigate IVRs effectively, and optimizing the time between callbacks in instances when callers received a busy signal or there was no answer to maximize order completion rates.

Once in production, Replicant's autonomous contact center placed orders as successfully as the BPO provider did. For this use case, Forrester modeled benefits and costs over three years.

“ Straightaway, Replicant has saved us considerably, produced additional revenue, and helped fine-tune our business with insights we didn't have on call interactions. ”

Analysis Of Benefits

■ Quantified benefit data

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Avoided cost of previous BPO provider	\$4,455,500	\$4,874,317	\$5,235,016	\$14,564,833	\$12,011,961
Btr	Avoided cost of BPO management oversight	\$57,870	\$57,870	\$57,870	\$173,610	\$143,914
Ctr	Avoided revenue loss from orders canceled due to long wait times	\$117,356	\$128,388	\$137,503	\$383,247	\$316,101
Dtr	Avoided external training cost for BPO order-placing team	\$24,300	\$24,300	\$24,300	\$72,900	\$60,431
Total benefits (risk-adjusted)		\$4,655,026	\$5,084,875	\$5,454,689	\$15,194,590	\$12,532,407

AVOIDED COST OF PREVIOUS BPO PROVIDER

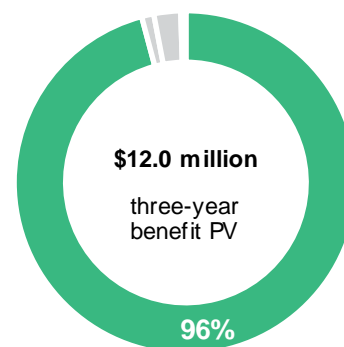
Evidence and data. The ability of Replicant Voice to place autonomous outbound calls was on par with the order accuracy and success rates as compared to the BPO provider. This allowed Postmates to replace and avoid the cost of the BPO provider.

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

- Based on customer demand for food delivery services, Replicant Voice handled more than 7 million orders in Year 1.
- With the cost of the previous BPO provider, the cost avoidance with Replicant Voice totals \$4.7 million in Year 1. Based on current growth trends in food delivery, Forrester projects a three-year present value of \$14.6 million in avoided costs.
- During Year 1, Postmates used Replicant Voice to drive a further seven percentage-point increase in order success by identifying poor-performing restaurants and removing them as providers. While this lowered the number of potential options for customers, it increased the incidence of order success. This shift is designated as revenue-neutral in the model.

Risks. Postmates' successful implementation of Replicant Voice demonstrated that other firms would have minimal risk in experiencing similar results.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$12.0 million.



Avoided Cost Of Previous BPO Provider						
Ref.	Metric	Calculation	Year 1	Year 2	Year 3	
At	Avoided cost of previous BPO provider	Interview	\$4,690,000	\$5,130,860	\$5,510,544	
	Risk adjustment	↓5%				
Atr	Avoided cost of previous BPO provider (risk-adjusted)		\$4,455,500	\$4,874,317	\$5,235,016	
Three-year total: \$14,564,833			Three-year present value: \$12,011,961			

AVOIDED COST OF BPO MANAGEMENT OVERSIGHT

Evidence and data. The ability of Replicant Voice to elastically scale to meet rapid peaks in order demand reduced Postmates’ need to dedicate resources to manage queue length and make interventions for successful order placement.

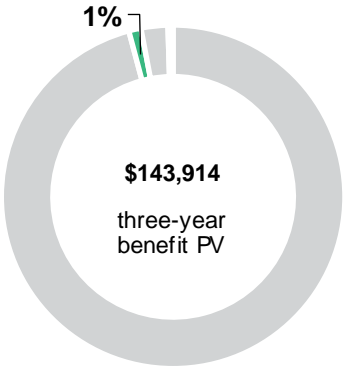
- With the prior BPO provider, delays in placing orders were common, and they required oversight by partially dedicated Postmates customer service managers.
- Replicant Voice provided elastic capacity that could scale up or down depending on customer demand. Therefore, it removed the need for management oversight.
- Using Replicant Voice, Postmates eliminated the monthly costs of managing and training the BPO provider.

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

- The average annual salary for a service operations management function is \$104,000.

- The time previously allocated to this resource is the equivalent of 0.5 FTE.

Risks. Given the potential for variation in other call-center operations and settings, Forrester assigned a moderate degree of risk for these outcomes. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$143,914.



Value of avoiding cost of management oversight of BPO provider

Avoided Cost Of BPO Management Oversight

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	FTE customer service operations manager reduction	Interviews	0.5	0.5	0.5
B2	Average burdened annual salary of customer operations manager	Assumption	\$112,400	\$112,400	\$112,400
B3	Monthly manager hours for BPO oversight	Interviews	12.5	12.5	12.5
B4	Average burdened hourly rate of BPO operations manager	Assumption	\$54	\$54	\$54
Bt	Avoided cost of management oversight of BPO operation	$(B1*B2)+(B3*B4*12 \text{ months})$	\$64,300	\$64,300	\$64,300
	Risk adjustment	↓10%			
Btr	Avoided cost of management oversight of BPO operation (risk-adjusted)		\$57,870	\$57,870	\$57,870
Three-year total: \$173,610			Three-year present value: \$143,914		

AVOIDED REVENUE LOSS FROM ORDERS CANCELED DUE TO LONG WAIT TIMES

Evidence and data. The ability of Replicant Voice to elastically handle rapid spikes in order demand without delay reduced order cancellations and associated revenue loss from order backlogs that previously impacted the BPO provider’s performance.

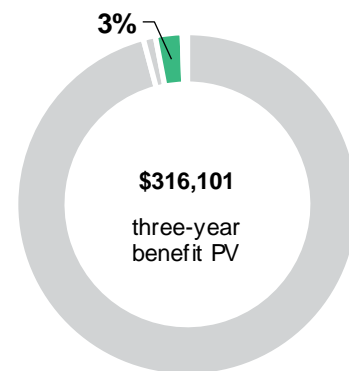
For the financial model, Postmates provided a sample month’s worth of data on the incidence and revenue impact from order delays that led to order cancellations.

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

- The monthly data is apportioned to a daily average and then annualized for a Year 1 total based on the statistical growth rates for the food delivery segment.
- Forrester compounded Years 2 and 3 in the model based on industry-projected growth rates.

Risks. In this example, while the revenue value of reduced order cancellations due to delays was less than 1% overall, there is a moderate risk that other firms will see slightly lower improved revenue from using Replicant Voice.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$316,101.



Value of avoiding loss of orders canceled due to long wait times

Avoided Revenue Loss From Orders Canceled Due To Long Wait Times					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Revenue loss from orders canceled	Interview	104,400	130,396	142,653
C2	Platform delivery growth rate	Statistica	24.9%	9.4%	7.1%
Ct	Avoided revenue loss from orders canceled due to long wait times (rounded)	$C1+(C1*C2)$	\$130,396	\$142,653	\$152,781
	Risk adjustment	↓10%			
Ctr	Avoided revenue loss from orders canceled due to long wait times (risk-adjusted)		\$117,356	\$128,388	\$137,503
Three-year total: \$383,247			Three-year present value: \$316,101		

AVOIDED EXTERNAL TRAINING COST FOR BPO ORDER-PLACING TEAM

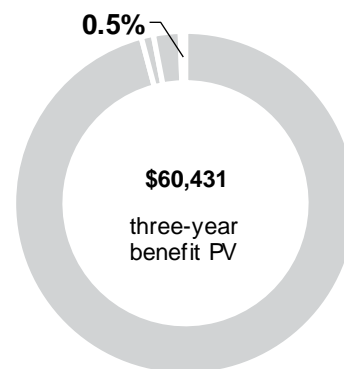
Evidence and data. While managing the BPO provider, Postmates paid an ongoing training cost to ensure consistent implementation of operation protocols and effective service performance.

- Postmates paid monthly training costs to an external firm retained to train the BPO provider.
- Replicant Voice replaced the BPO provider and eliminated the associated costs.
- Monthly training costs were \$2,250.

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

- The monthly cost is apportioned to the BPO provider that Replicant Voice replaced.
- The monthly costs for the training vendor were fixed on a monthly basis in Year 1 and carried forward at the same level in Years 2 and 3.

Risks. As there are moderate risks that these costs may be lower for other organizations, Forrester reduced the total value of this benefit by 10%. This yields a three-year, risk-adjusted total PV of \$60,431.



Value of eliminating training cost for BPO order-placing team

Avoided External Training Cost For BPO Order-Placing Team

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	Monthly training cost for agents	Interview	\$2,250	\$2,250	\$2,250
D2	Months per year		12	12	12
Dt	External training cost for BPO order-placing team	D1*D2	\$27,000	\$27,000	\$27,000
	Risk adjustment	↓10%			
Dtr	Avoided external training cost for BPO order-placing team (risk-adjusted)		\$24,300	\$24,300	\$24,300
Three-year total: \$72,900			Three-year present value: \$60,431		

UNQUANTIFIED BENEFITS

Postmates experienced additional benefits that the interviewee was not able to quantify. These include:

- Replicant Voice opened the black box of call-center interactions with searchable conversational data.** Replicant Voice tagged each conversation with call dispositions for further analysis and helped create core metrics such as performance within cuisine, location, order size, and dollar amount to understand caller data. These newfound insights unlocked business intelligence not previously accessible with the BPO provider. To get similar insights, the BPO provider would have had to invest countless hours manually reviewing call recordings and printed transcripts.
- Replicant Voice gave Postmates visibility into identifying and removing low-performing restaurants that affected customer order success.** While this lowered the number of potential restaurant options for customers, it drove higher order success rates in Year 1, and decision-makers saw it as revenue-neutral but important to overall customer satisfaction.
- Replicant nurtured qualities of patience and empathy with human counterparts.** Humans answering outbound order placement calls at

non-network restaurants almost invariably recognized they were conversing with Replicant’s Thinking Machine, and the quality of these interactions generated a series of positive downstream effects including higher success rates in placing orders in fast-paced and hectic restaurant environments.

- Replicant expanded Postmates’ footprint for network restaurants.** Order takers’ abilities to recognize the Thinking Machine created additional familiarity with Postmates among non-network restaurants. Therefore, this created deeper partnerships and revenue opportunities by converting non-network restaurants to network restaurants. The interviewee was unable to quantify this shift in partnership basis.
- Replicant was an important driver of customer satisfaction and repeat business.** Although not quantified in the interview, Postmates decision-makers perceived the capabilities of Replicant Voice as fundamental to driving customer satisfaction and its overall value proposition in the food delivery space.

FLEXIBILITY

The need for flexibility is unique to each organization when evaluating contact-center solutions. There are

multiple scenarios in which a customer might implement Replicant Voice and plan to implement additional use cases quickly and easily. For Postmates, this includes:

- **Direct business development outreach to restaurants.** Although not yet implemented, the interviewee said Postmates uses Replicant Voice to undertake potential business development campaigns throughout the country.

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
Etr	Order cost via Replicant	\$0	\$2,205,000	\$2,412,270	\$2,583,541	\$7,200,811	\$5,939,210
Ftr	Implementation cost	\$18,792	\$0	\$0	\$0	\$18,792	\$18,792
	Total costs (risk-adjusted)	\$18,792	\$2,205,000	\$2,412,270	\$2,583,541	\$7,219,603	\$5,958,002

ORDER COST VIA REPLICANT

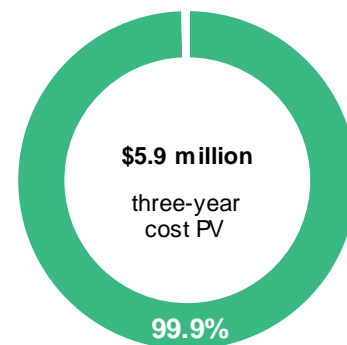
Evidence and data. For Postmates, the system resources of Replicant as a fully managed service and the total cost based on order volume was \$2.2 million in Year 1.

Postmates also absorbed the cost of upfront work to conduct A/B testing to develop the most effective conversational approach, API integrations to execute order placement and to provide monitoring and visibility for Postmates and Replicant, and to develop an effective re-call cadence to overcome busy signals and no-answer events as well as management and oversight of system resources to handle order demand.

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

- The cost per call is applied to the number of orders placed in Year 1 and it is driven in the out years from information collected in the interview and from published forecasts.

Risks. Following implementation, the risk to the cost profile are generally minimal. To account for this designation of minimal risk to cost, Forrester applied a 5% upward adjustment in the model. This yields a three-year, risk-adjusted total PV (discounted at 10%) of \$5,958,002.



Order Cost Via Replicant

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
Et	Order cost via Replicant	Interview	\$0	\$2,100,000	\$2,297,400	\$2,460,515
	Risk adjustment	↑5%				
Etr	Order cost via Replicant (risk-adjusted)		\$0	\$2,205,000	\$2,412,270	\$2,583,541
Three-year total: \$7,200,811			Three-year present value: \$5,939,210			

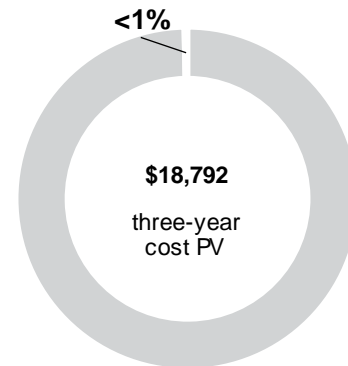
IMPLEMENTATION COST

Evidence and data. Implementation costs for Postmates were proportional to an FTE of a software engineer and business analyst during a six-week implementation timeline.

- Postmates needed the FTE software engineer for one month at a burdened annual salary of \$150,000.
- Postmates needed the FTE business analyst for two weeks at a burdened annual salary of \$110,000.

Modeling and assumptions. Forrester applied the time and salary metrics to the time it would take a Postmates software engineer and business analyst to implement Replicant Voice.

Risks. There may be some risk of more involved implementation for other applications or business needs. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$18,792.

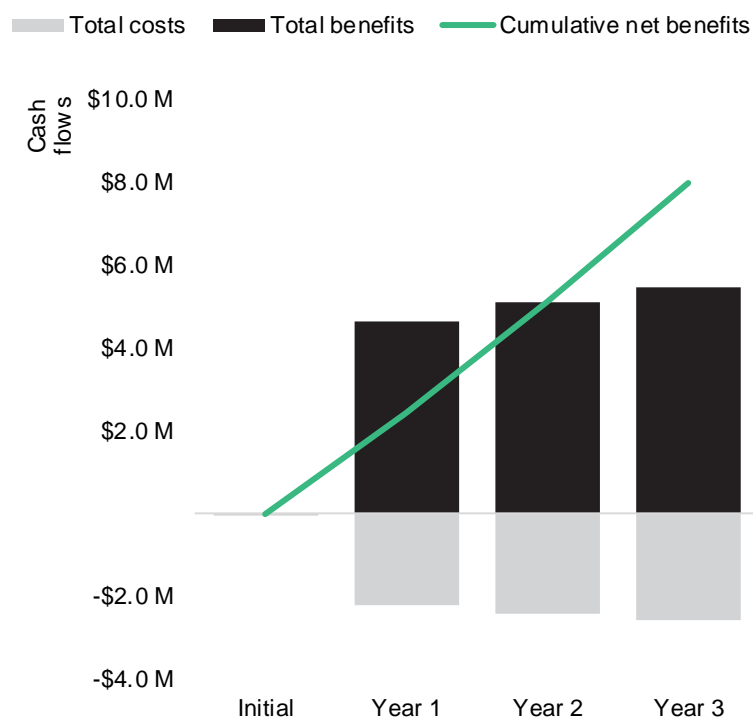


Implementation Cost						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Software engineer FTE month requirement	Interview	0.8333333	0	0	0
F2	Software engineer average burdened annual salary	Assumption	\$150,000	\$150,000	\$150,000	\$150,000
F3	Business analyst FTE 2 weeks requirement	Interview	0.041666667	\$0	\$0	\$0
F4	Business analyst average burdened annual salary	Assumption	\$110,000	\$110,000	\$110,000	\$110,000
Ft	Implementation cost	$(F1 * F2) + (F3 * F4)$	\$17,083	\$0	\$0	\$0
	Risk adjustment	↑10%				
Ftr	Implementation cost (risk-adjusted)		\$18,792	\$0	\$0	\$0
Three-year total: \$18,792			Three-year present value: \$18,792			

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



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

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$18,792)	(\$2,205,000)	(\$2,412,270)	(\$2,583,541)	(\$7,219,603)	(\$5,958,002)
Total benefits	\$0	\$4,655,026	\$5,084,875	\$5,454,689	\$15,194,590	\$12,532,407
Net benefits	(\$18,792)	\$2,450,026	\$2,672,605	\$2,871,148	\$7,974,987	\$6,574,405
ROI						110%
Payback period (months)						<6

Appendix A: Total Economic Impact

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

TOTAL ECONOMIC IMPACT APPROACH

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

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

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

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

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



PRESENT VALUE (PV)

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



NET PRESENT VALUE (NPV)

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



RETURN ON INVESTMENT (ROI)

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



DISCOUNT RATE

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



PAYBACK PERIOD

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

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