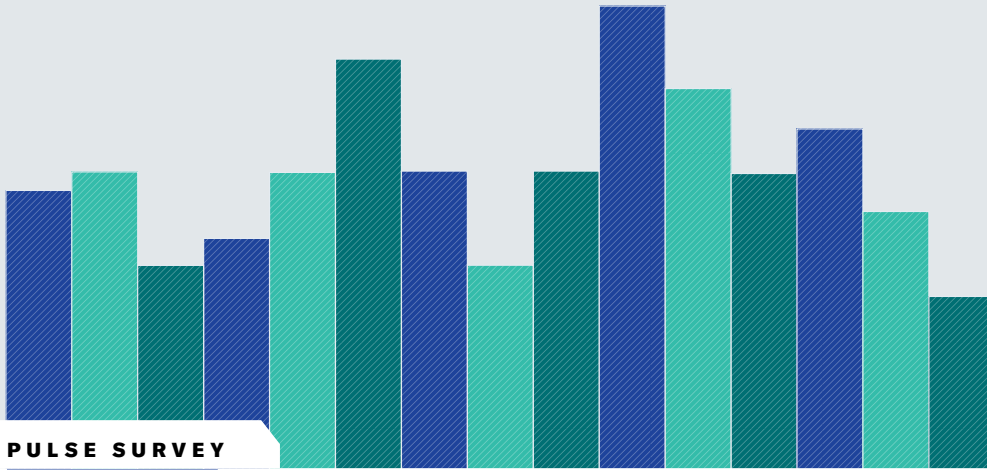




**Harvard  
Business  
Review**

ANALYTIC SERVICES



# Improving Customer Service with Artificial Intelligence



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## SPONSOR PERSPECTIVE

The landscape of customer service has undergone a remarkable transformation in recent years. As artificial intelligence (AI) has evolved, organizations are increasingly leveraging AI-powered tools to streamline processes, analyze data, and deliver personalized experiences to their customers.

In association with Harvard Business Review Analytic Services, we are proud to present this comprehensive report, “Improving Customer Service with Artificial Intelligence.” As a leading provider of innovative solutions, we understand the pivotal role that AI plays in reshaping customer interactions and enhancing overall satisfaction.

Our association with Harvard Business Review Analytic Services underscores our commitment to staying at the forefront of industry trends and driving meaningful change in customer service. Through insightful research and expert analysis, this report sheds light on the challenges and opportunities associated with AI adoption, providing valuable insights for organizations looking to enhance their customer service capabilities.

As organizations navigate the complexities of AI implementation, addressing key considerations such as quantifiable success metrics, data security, and vendor selection is imperative. By assembling the right team, asking the right questions, and starting small with proof-of-concept initiatives, organizations can unlock the full potential of AI to drive business success.

At NICE, we are dedicated to empowering organizations with the tools and knowledge needed to thrive in an AI-driven world. We believe that by embracing AI that is purpose-built for customer experience, organizations can elevate their customer service offerings, improve operational efficiency, uplevel employee experience, and ultimately, create more meaningful customer relationships.

We invite you to delve into the insights presented in this report and embark on a journey toward transformative customer service excellence.



**Elizabeth Tobey**  
**Head of Marketing, Digital and AI**  
**NICE**

# Improving Customer Service with Artificial Intelligence

The way organizations interact with their customers has undergone tremendous evolution over the past decade. Companies that were once reliant on call centers to address customer queries now have a variety of alternatives, from self-service portals and social-media-based customer service to omnichannel support and artificial intelligence (AI)-powered solutions.

AI, in particular, has revolutionized customer service, both for organizations and for the customer. It is enabling companies to provide support outside of business hours, helping reduce wait and response times, analyze customer data and behavior to offer personalized solutions based on patterns and preferences, and anticipate needs.

Harvard Business Review Analytic Services conducted a survey in December 2023 of 326 respondents from the *Harvard Business Review* audience, all of whom are involved in their organizations' decisions about their customer service experience. The results show that 73% of the surveyed professionals say they understand the role that AI can play in improving customer service experiences. And the majority (62%) say that, in their organization's industry, incorporating AI-powered tools into the customer service experience is more important than ever.

But while the majority of those piloting or with fully implemented AI customer service tools agree that their value is worth the cost, others are experiencing barriers to adoption and other challenges, the survey finds.

The biggest adoption barriers for those not yet using AI customer service tools are a lack of clarity around how these tools can improve customer service, and a lack of talent with the necessary skill sets to adopt them. Those currently using AI-powered customer service tools also cite training needs and skills gaps, as well as data security and privacy issues, as top challenges.

"AI is still relatively new, and there are a lot of options out there to choose from, so it's easy to see why organizations are experiencing some of these

## HIGHLIGHTS



93% of respondents agree that **each customer service interaction either positively or negatively impacts** a customer's overall customer experience.



73% of respondents say they **understand the role that artificial intelligence (AI) can play** in improving customer service experiences.



71% of respondents whose organizations have an AI-powered customer service tool agree that **the value their organization gets from these tools is worth the cost of adopting them.**

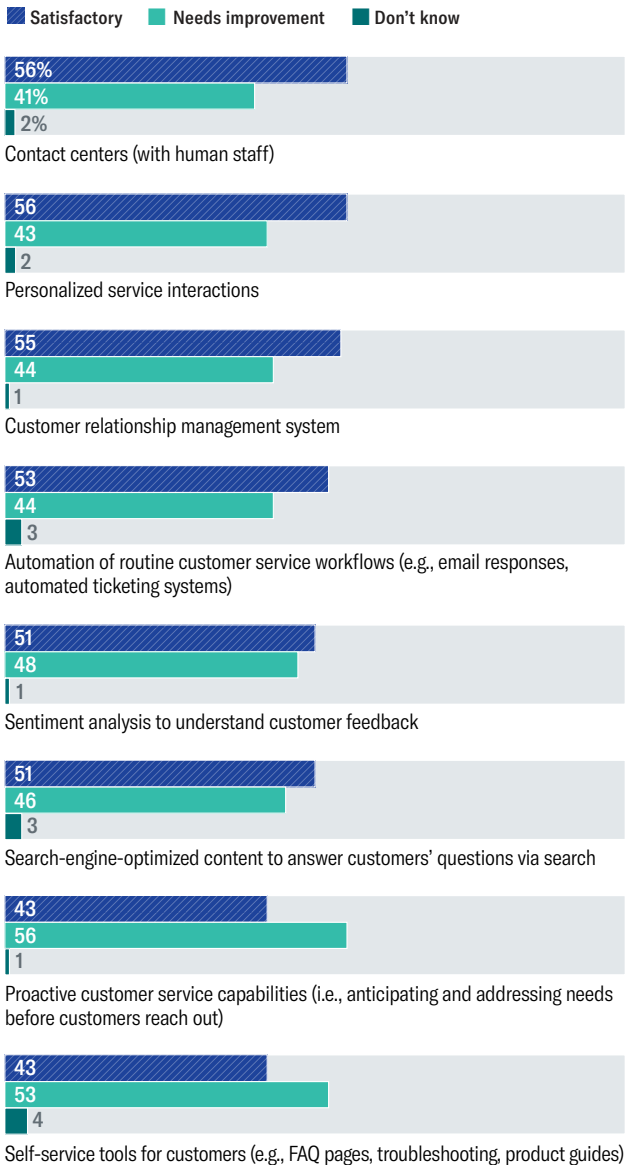
Due to rounding, some figures in this report may not add up to 100%.

FIGURE 1

### Lukewarm Satisfaction

Respondents are only somewhat satisfied with the performance of their existing customer service capabilities

For each of the customer service capabilities your organization has, rate whether its performance is satisfactory or needs improvement.



Base: 76 to 211 respondents, varies by row. Not shown, due to small sample sizes: "AI-powered customer-facing chatbots" and "Automatic recommendations of next-best action for customer service agents."

Source: Harvard Business Review Analytic Services survey, December 2023

challenges,” says Lynda McOwen, global business process outsourcing (BPO) IT leader for talent transformation and customer transformation at Armonk, N.Y.-based IBM Corp.’s consulting subsidiary. “But AI is changing the landscape of how we provide good customer service, and it’s changing the experience that customers are having—and that’s something that organizations really need to consider as they look at the experience they provide.”

For organizations to harness the full potential of AI for the customer service experience, they must make a concerted effort to understand their organization’s needs, capabilities, and limitations, and to evaluate the offerings available. This report will explore how companies are currently using AI solutions to improve the customer experience (CX), what value they’re realizing, and how they’re addressing the challenges they’re encountering.

### Customer Service Ripe for Improvement

Today, every customer touchpoint matters, from phone calls and email support to FAQ pages, social media, and chatbots. There is overwhelming recognition of this: 93% of respondents agree that each customer service interaction either positively or negatively impacts a customer’s overall experience. Meanwhile, 94% agree that the quality of a customer’s service experience directly impacts the quality of their overall CX.

Providing a strong customer service experience is even more important following the Covid-19 pandemic, says John DiJulius, president of The DiJulius Group, a customer service consultancy based in Cleveland. “We’ve gone through a great resignation, staff shortages, low employee morale, tip-flation, and inflation, all of which have caused a customer experience gap,” he says. “If you’re not making it easy to do business, if your customer service is subpar, and if you’re not providing personalization, your customers will leave you after one bad experience.”

Despite a deep recognition of the importance of a strong customer service experience, organizations are only somewhat satisfied with the performance of their existing capabilities. Respondents selected from a list of the customer service capabilities that their organization currently has in place, then rated whether each of those capabilities needs improvement or is satisfactory. The results show that “satisfactory” percentages are middling, ranging from 43% to 56%. A little more than half cite their contact centers (with human staff) (56%), their personalized service interactions (56%), their customer relationship management (CRM) systems (55%), and their automation of routine customer service workflows (53%) as satisfactory. Most of the remainder say those same areas need improvement. Overall, these findings suggest there are opportunities for improvement across many areas



“If you’re not making it easy to do business, if your customer service is subpar, and if you’re not providing personalization, your customers will leave you after one bad experience,” says John DiJulius, president of The DiJulius Group.

with respect to the methods and tools organizations use to execute their customer interactions. **FIGURE 1**

Vibhanshu Abhishek, associate professor of information systems at the University of California, Irvine, says that an influx of customer service tools is one factor impacting organizations’ satisfaction with their existing capabilities.

“Organizations have a lot of tools in place—different ones for different parts of the customer journey and custom-built tools that solve very specific problems. The main issue is that none of them talk to each other, which has created a lot of fragmentation, particularly in the customer experience,” he says. “Companies are trying to assimilate all these tools together into a unified experience, but it’s been a huge challenge.”

Tool fragmentation erodes the customer service experience, Abhishek adds. New customer information, for example, might be entered into a customer data platform. When that customer calls a service agent to articulate a problem, that information may be entered into a CRM system. Then, when the service agent raises a ticket, it may be entered into a customer support platform, which may require the customer to repeat information that’s already stored elsewhere. This scenario is all too common, Abhishek says. “Agents should be using this time to build a relationship with the customer rather than recording information that already exists within other systems and tools,” he says.

As organizations grapple with disparate and disjointed systems while striving to improve their customer service, many are turning to AI. With the right measures in place, these AI-based customer service tools have the potential to improve customer satisfaction, generate data-driven customer insights, reduce operating costs, and improve agent efficiency.

### Reinventing the Customer Service Experience with AI

Although most of the surveyed professionals understand the role that AI can play, adoption of AI runs the gamut, the survey finds.

Twenty-nine percent of respondents say their organization is currently using AI-powered customer service tools, either in a piloting stage (15%) or fully implemented in many or a

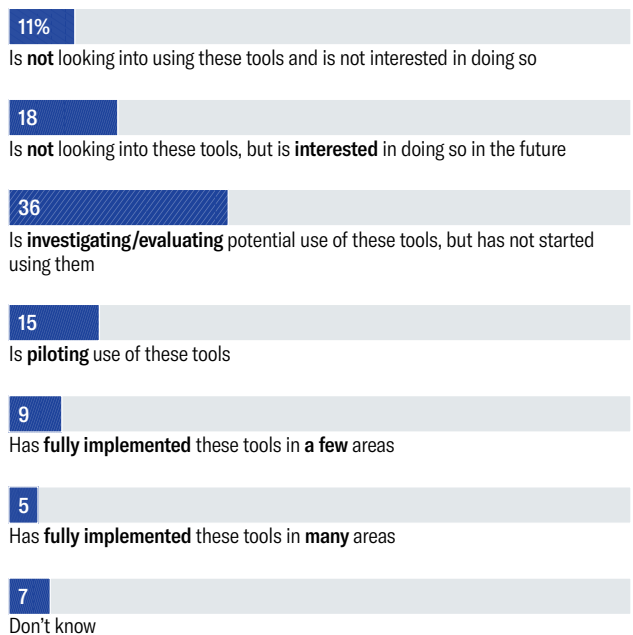
few areas (14%). About a third (36%) say their organization is investigating or evaluating the potential use of these tools, but has not yet started using them, while 29% are not looking into these tools at the moment (though 18% say they are interested in doing so in the future). **FIGURE 2**

FIGURE 2

### Artificial Intelligence (AI) Adoption Varies

Organizations are at different stages of adoption of AI tools for customer service

Which of the following best describes your organization’s current status regarding the use of AI-powered customer service tool? \* My organization...



Base: 326 respondents. \*Respondents were informed that “AI-powered customer service tools include employee-facing and customer-facing technology solutions an organization can adopt to support its customer service operations. Examples of AI-powered customer service tools include AI-powered: chatbots, tools that automate service agents’ tasks, predictive analytics, sentiment analysis, customer support and ticketing, and more.”

Source: Harvard Business Review Analytic Services survey, December 2023

Tom White, director of product development at Superior Contact, a contact center solutions provider based in Marquette, Mich., notes that more organizations understand that by incorporating AI into their customer service solutions, they have the potential not only to improve the CX but even to save money.

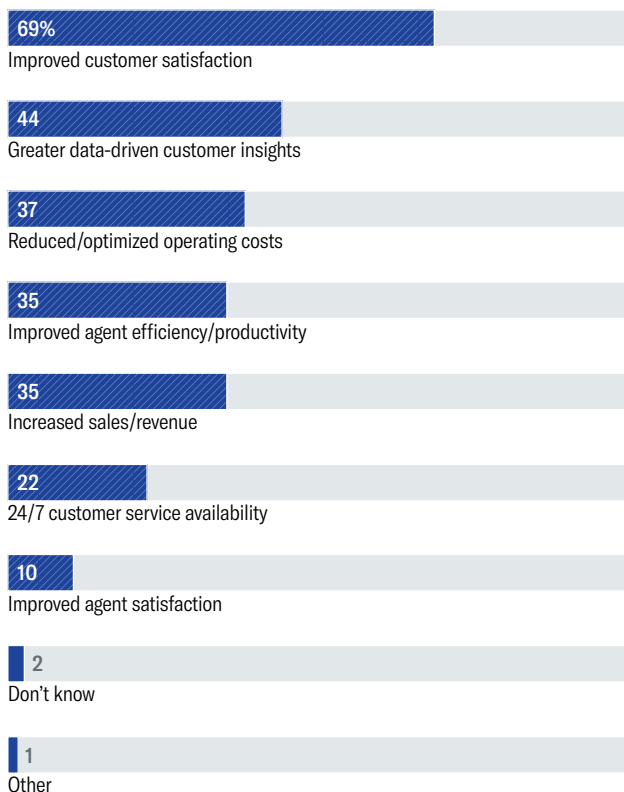
Organizations also want improved efficiencies, DiJulius Group's DiJulius adds. "They want to reduce repetitive tasks, free up customer-facing employees to do more rewarding work, build a more emotional connection with the customer, and provide them with a better experience," he says. "AI is helping organizations accomplish all this and more."

FIGURE 3

### High Hopes for AI-Powered Tools

Organizations cite improved customer satisfaction as the top outcome they hope to achieve

What outcomes is your organization most hoping to achieve from adopting AI-powered customer service tools? Select up to three.



Base: 268 respondents whose organizations have implemented AI-powered customer service tools, are piloting them, are investigating potential use of them, or are interested in using them in the future.

Source: Harvard Business Review Analytic Services survey, December 2023

That view is echoed by respondents, the survey finds. When asked what outcomes their organization is most hoping to achieve from adopting AI-powered customer service tools, those who are interested in, exploring, or using such tools say improved customer service satisfaction is one of their biggest motivators (69%), followed by greater data-driven insights (44%). **FIGURE 3**

IBM's BPO division provides contact center support and technology solutions to other organizations. One of its clients in the health care industry was recently searching for a solution to reduce the volume of calls agents received from workers in its employee services division during business hours, global IT leader McOwen says.

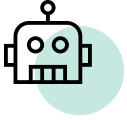
McOwen's team deployed an AI-based virtual assistant tool designed to manage incoming contacts and answer certain common questions from the client's employees. The virtual assistant tool also allowed the workers to schedule a callback with a live agent during operating hours if they contacted the company outside of that time period. The deployment of the virtual assistant resulted in an 80% to 90% deflection of inquiries into live agents, McOwen says, and improved satisfaction among the health care workers interacting with this tool.

"Because virtual assistants can be available 24/7 and most call centers are not, it's a positive for both the organization and the end user," she says. "It's improving the employee experience and also enabling agents to become more of a subject-matter expert rather than answering 10 calls on password resets."

AI-powered customer service tools can provide valuable benefits to organizations outside of ticket deflection, the University of California's Abhishek says, helping companies move from reactive customer service—in which the customers have already experienced a problem and are reaching out for support—to proactive customer service, in which AI could help identify customers who may be experiencing a problem before they contact support.

"Let's say that a customer is using a [software-as-a-service] (SaaS) product, for example. These days, there are so many analytics built into the product that organizations can see whether a customer is stuck somewhere or having a subpar experience," he says. "An AI-powered customer service tool like a proactive chatbot could reach out with a message that says, 'Hey, it seems like you're struggling. Here's a better way to do this.' AI can help organizations give very personalized advice on what customers need to do to have a better experience or move forward."

Abhishek says this use of AI highlights the importance of customer service beyond the contact center, such as self-service portals. "People like to solve problems on their own by searching for solutions online and only reach out via email or phone as a last resort, at which point you may have already



“With generative AI, all of this can be done on steroids. You could have better-than-humanlike interactions with chatbots that can pull from different sources of information and really personalize the experience to the extent that it’s not even humanly possible,” says Vibhanshu Abhishek, associate professor of information systems at the University of California, Irvine.

lost the customer,” he says. “But if there’s a way to nip those problems before that stage, that helps to provide an even better experience.”

AI-powered tools can also help improve continuity and bridge the gap among organizations’ disjointed systems. Superior Contact’s White, whose organization is a BPO company providing customer service and technology solutions for other companies, says that businesses want each personalized experience to determine when to use an AI-powered customer service tool, such as a chatbot, and when it’s best to speak directly with a service agent. The important factor, he says, is making sure the details captured in each channel of support are accessible—a problem that AI solves by connecting data across various systems.

“If a customer starts off trying to solve a problem with a virtual agent or chatbot, but then the issue is transferred to an agent and they need to explain the problem all over again, it really degrades their experience,” White says. AI can give agents visibility into those details and more, providing more continuity among platforms and better interactions.

The respondents whose organizations are interested in, exploring, or currently using AI-powered customer service tools say that many of these examples are features their organization considers important to have in the solutions they adopt. Automation of repetitive agent tasks or workflows was selected most as an important feature (63%), followed by providing personalized messaging to customers (via chat, text, email, etc.) (61%), prediction and resolution of customer needs before they arise (58%), and providing personalized recommendations to customers (55%).

As the technologies become even more sophisticated—particularly as applications of generative AI become more commonplace—the potential for truly enhanced customer service experiences grows, Abhishek adds. “With generative AI, all of this can be done on steroids. You could have better-than-humanlike interactions with chatbots that can pull from different sources of information and really personalize the experience to the extent that it’s not even humanly possible,” he says. “It can pull up and analyze years’ worth of transactions to give a better picture of the customer. It could

analyze the tone of the conversation and suggest to agents how to best respond. All of a sudden, agents are spending more time building relationships and less time trying to find information.”

Gauging customer satisfaction (59%) is the top metric organizations are using today to assess how well an AI-powered customer service tool is working, the survey finds. Speed to resolution (46%), accuracy rate of AI responses/recommendations (39%), and customer acquisition metrics (38%) rank among the top metrics.

## The Hurdles to AI Adoption

While the benefits of AI in customer service are clear, organizations do experience barriers to adoption as they explore and implement these tools. Some respondents, for example, express confusion around the AI marketplace and the ability to differentiate among the tools available, with about half (51%) saying it’s unclear how the various AI-powered customer service tools available in the market are distinct from one another. And a minority, 40%, agree that they have a good understanding of the AI-powered customer service tools available in the market.

“There is certainly a lot of vendor noise in this space, and there needs to be a lot more customer education to derive value,” Abhishek says. “I think a lot of this confusion comes from the fact that these technology vendors have sold solutions to customers without really understanding their pain points, not educating them enough about whether it’s actually the right solution for them, or how to go about using it.”

This sentiment was reflected in the survey. When respondents were asked about the barriers preventing organizations that are not yet using such tools from adopting them, they most often cited a “lack of clarity around how AI tools could improve our customer service” (44%), followed closely by a lack of talent with the necessary skill sets to spearhead AI tool adoption (43%). Respondents whose organizations are piloting or have fully implemented these tools cite a similar issue as the most common challenge in adopting these tools: training needs/skills gaps (47%).

These data points indicate that organizations may need more AI literacy among decision makers pursuing these tools. “There’s a lot of misinformation about AI right now because it’s the shiny new object that everyone is talking about. A lot of times, the C-suite will say, ‘Hey, let’s use AI,’ as a catch-all for all issues, except not all issues can be solved with AI,” Abhishek says. “There is a big need for organizations to better educate themselves on these technologies and understand them so they can make an informed decision and ultimately derive value from them.”

These decision makers involved in evaluating and selecting the digital tools used as part of the customer service operations most often include technology leads (45%), operations leads (43%), customer service leads (43%), and customer experience leads (41%), followed by marketing/communications leads (38%) and strategy leads (37%).

Companies that are piloting or have fully implemented them also encounter challenges outside of training needs and skills gaps. Other top challenges include data security/privacy issues (41%) and errors or biases in AI tools’ decisions/recommendations (38%).

“Organizations are trying to balance what data to train AIs on versus what data needs to be masked for privacy or security reasons, such as credit card or account information. This will be different for every organization,” McOwen says.

“Every company is trying to get to the point where they have an effective tool that helps improve their overall productivity, meets their overall objective, doesn’t expose something it shouldn’t, and doesn’t provide inaccurate responses.”

It’s also important to note, McOwen adds, that these AI tools must constantly be monitored and managed for content improvement and content correlation. “This isn’t something you build once and walk away from. It’s something that is constantly learning and growing,” she says. “You need people whose responsibility it is to make sure that the virtual assistants or your AI in general is keeping up, is learning, and that you’re managing it.”

Despite these challenges, most (60%) of those at organizations that are piloting or have fully implemented these tools say they’re meeting or performing above expectations, with 22% saying they’re performing below expectations. Perhaps more importantly, 71% of this group agrees that the value their organization gets from its AI-powered customer service tools is worth the cost of adopting them. **FIGURE 4**

### Taking Action

As organizations begin to explore applications of AI in customer service, vet solutions, and implement these technologies, they should keep several recommendations in mind.

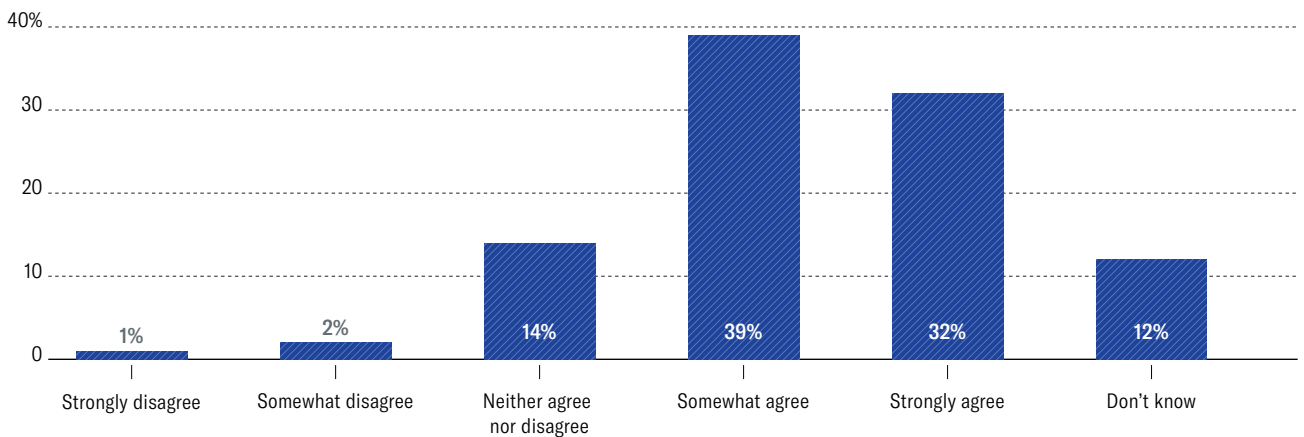
FIGURE 4

### Value of AI Is High

Most respondents say the value of AI is worth the cost of adoption

Rate the extent to which you agree or disagree with the following statement:

*The value my organization gets from its AI-powered customer service tools is worth the cost of adopting them.*



Base: 94 respondents whose organizations have fully implemented or are piloting AI-powered customer service tools.

Source: Harvard Business Review Analytic Services survey, December 2023





“Where AI really starts having a meaningful impact is when you have a huge volume of data, particularly in the customer experience space. That’s a sweet spot for AI to start demonstrating value. A good indicator that maybe an AI solution isn’t right is if you’re not dealing with enough data or enough volume for AI to have a meaningful difference,” says University of California’s Abhishek.

**Assemble the right team.** Organizations should determine whether they have the right people in place to begin investigating AI technologies, Abhishek says. “If you don’t have the right talent to guide you in these decisions, the first dollar you spend should be toward hiring at least one person who understands AI, has worked with it in the past, and can translate the business problem to see if AI is the right tool to solve that problem,” he adds.

The team should include a variety of stakeholders, including the individuals most responsible for the business and for the product, and representatives of engineering and data science. “Ultimately, you’re looking at a business metric that needs to change, so the business owner needs to be in the room. You need the other folks to get a clear understanding of what needs to happen from a product perspective, the data you have, the data you need, and to determine which metrics are important,” Abhishek continues.

**Ask the right questions.** Understanding the important questions before jumping into AI is critical. Organizations should think hard about what exactly they want to improve with AI, what metrics they’ll measure to determine if they’re moving in the right direction, and whether AI is the right tool to solve this problem, Abhishek says.

**Get enough of the right data.** “Where AI really starts having a meaningful impact is when you have a huge volume of data, particularly in the customer experience space. That’s a sweet spot for AI to start demonstrating value,” Abhishek says. “A good indicator that maybe an AI solution isn’t right

is if you’re not dealing with enough data or enough volume for AI to have a meaningful difference.”

It’s also important to ensure you have visibility into what data is being used, how it’s being used, and where it’s flowing to. “You need to make sure you’re in compliance with regulations and that your data isn’t being used for developing the strategic advantage of your vendor or potential competitors in the market,” he says. “You could have a SaaS model where you trust the vendor and you trust the data architecture. Or it could be an on-prem deployment in which you control how it’s being deployed in your environment—different models can still be successful.”

**Consider time to value and accuracy.** Companies need to keep in mind how quickly they can get started with a solution and can expect to see results. “If you don’t know how well it’s performing, it’s very difficult to see whether it will have a business impact or whether it’s delivering the kind of quality you want,” Abhishek says. “You also need to have a lot of confidence in any answers that are customer facing, such as in a chatbot. But time to value is first, because you can’t get to accuracy before you get started.”

**Start small and experiment.** Businesses should adopt a portfolio approach to AI, Abhishek says. Consider these trials experimental, start with a proof of concept (POC), and understand that not all trials may be successful. “Don’t spend too much on resources to start. Instead, try to validate some of the hypotheses to see what will work and aligns with business objectives,” he says. “Do one POC or a series of POCs to see what metrics you can achieve on small projects, either with vendors or internally, before deciding to invest a lot of money on a full-fledged AI project.”

**Vet your vendor.** With the various solutions available in the marketplace, be sure to perform full due diligence on your vendor, DiJulius says. Some considerations include whether the vendor has worked with companies in your industry or similar industries, whether they have a proven track record of success with their clients, and the level of ongoing support you will receive.

## Conclusion

AI has begun to revolutionize customer service, providing organizations with new ways to improve processes, efficiency, and the CX. Companies are using AI-powered tools to reduce wait times, improve response times, analyze customer data, and offer personalized solutions.

But the future promises even more possibilities for innovative customer service solutions. “We’re very excited about the possibilities in AI agent assist where AI can be



**“Start small with AI, start slow, and see how it could impact the service you deliver to your customers. If you don’t, it’s likely your competitors will,” says DiJulius Group’s DiJulius.**

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live-monitoring the agent, scoring the call live, and actually giving the agent feedback on the information they should be providing, reminding them to speak slower, or even alerting a team member who can assist in real time. The result is better customer experiences, better business outcomes, and happier agents,” White says.

Abhishek takes a more expansive view when it comes to the entire enterprise. “I think customer support will become hyper personalized and extend across different functions—presales, sales, customer support, and self-service customer support,” he says. “I think we’ll be seeing a lot more integrations of those capabilities, more full-cycle products emerge in the market, and new forms of interaction develop as gen AI takes hold.”

For organizations to leverage the capabilities of AI today and in the future, however, they must overcome the barriers preventing them from exploring these technologies and

anticipate and work through common challenges as they deploy AI solutions. This mandate requires that companies improve their organizational literacy in AI to gain a better understanding of their organization’s needs, capabilities, and limitations. Those that successfully do that have the potential to make significant gains in how they manage customer service and in the experience they deliver to their customers.

“All companies want to be faster, more efficient, and more profitable. But you’ve just got to start,” DiJulius says. “Start small with AI, start slow, and see how it could impact the service you deliver to your customers. If you don’t, it’s likely your competitors will.”

## METHODOLOGY AND PARTICIPANT PROFILE

Harvard Business Review Analytic Services surveyed 326 members of the *Harvard Business Review* audience via an online survey fielded in December 2023. Respondents qualified to complete the survey if they were familiar with and engaged in decisions about their organization's customer service experience.

### Size of Organization

**20%**  
10,000 or more  
employees

**29%**  
1,000-9,999  
employees

**9%**  
500-999  
employees

**42%**  
50-499  
employees

### Seniority

**25%**  
Executive  
management/  
board members

**40%**  
Senior  
management

**21%**  
Middle  
management

**14%**  
Other grades

### Industry Sectors

**12%**  
Manufacturing

**10%**  
Financial services

**10%**  
Health care

**9%**  
Government/  
not-for-profit

All other sectors  
less than 9% each.

### Job Functions

**22%**  
General/executive  
management

**17%**  
Sales/business  
development/  
customer service

**8%**  
Administration

All other functions  
less than 8% each.

### Regions

**44%**  
North America

**22%**  
Asia Pacific

**17%**  
Europe

**9%**  
Middle East/Africa

**8%**  
Latin America

**1%**  
Other

Figures may not add up to 100% due to rounding.



# Harvard Business Review

ANALYTIC SERVICES

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Harvard Business Review Analytic Services is an independent commercial research unit within Harvard Business Review Group, conducting research and comparative analysis on important management challenges and emerging business opportunities. Seeking to provide business intelligence and peer-group insight, each report is published based on the findings of original quantitative and/or qualitative research and analysis. Quantitative surveys are conducted with the HBR Advisory Council, HBR's global research panel, and qualitative research is conducted with senior business executives and subject-matter experts from within and beyond the *Harvard Business Review* author community. Email us at [hbranalyticservices@hbr.org](mailto:hbranalyticservices@hbr.org).

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