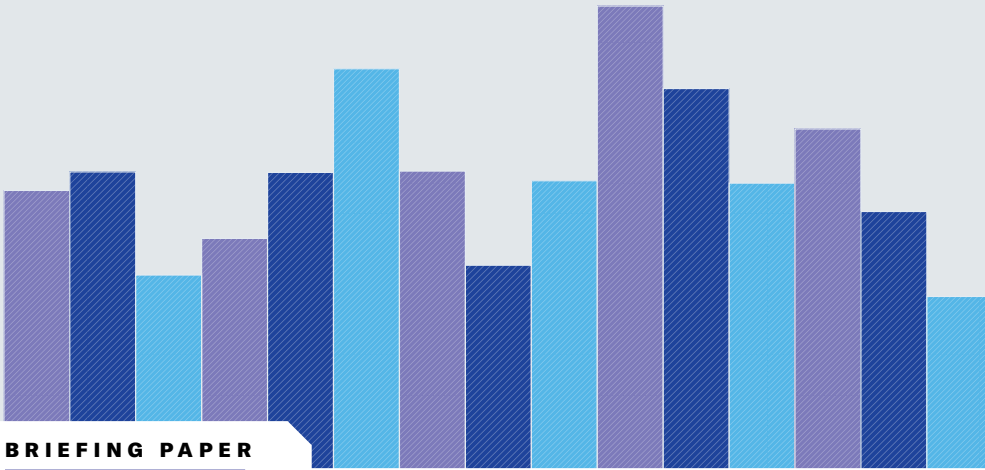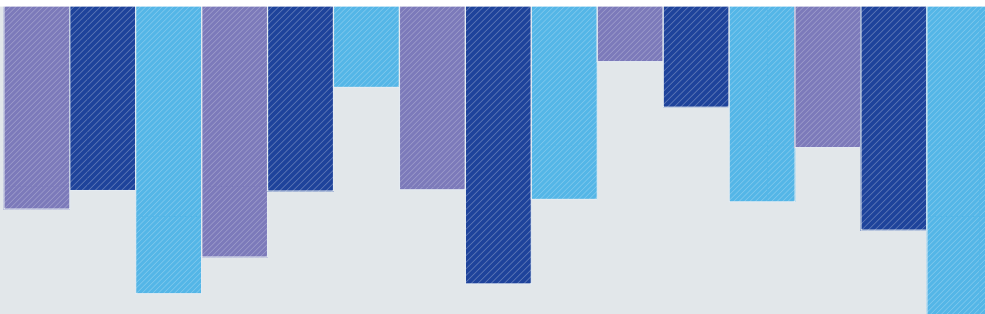Harvard Business Review
ANALYTIC SERVICES

Generative AI Success in the Contact Center Starts with Knowledge Management

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Generative AI (gen AI) is reshaping the contact center, driving new efficiencies and transforming the customer experience. But for its potential to be fully unlocked, gen AI requires a strong foundation of relevant, well-organized knowledge. For many organizations, this requires reevaluating their knowledge management practices.

It's understandable that foundational work like this can feel like a hurdle. Consider some of the typical challenges in contact centers today: keeping essential knowledge base articles up to date often involves tedious manual work, and insights from seasoned customer service reps can remain trapped in chat logs, call recordings, and case notes. Self-service tools frequently depend on rigid, predefined scripts that don't always address evolving customer issues. Gen AI offers us a reason to finally address this issue, and the tools to do so. By intelligently connecting information sources and continuously refining what's available to reps and self-service tools, AI helps build a knowledge management system that supports everyone.

At Microsoft, we're focused on delivering solutions like Dynamics 365 Customer Service, Dynamics 365 Contact Center, and Microsoft 365 Copilot for Service that ensure gen AI drives real impact, from allowing customers to quickly resolve issues on their channel of choice to empowering service reps with the right knowledge and insights at the right moment. We've experienced the transformational outcomes from AI in our own service and support organization—from increased collaboration to lower handle times to faster resolution rates.

And now, with autonomous agents, we're advancing gen AI to deliver even greater business value. For example, the Customer Knowledge Management Agent perpetually refreshes knowledge articles by identifying update opportunities or creating new content from insights in human-assisted cases and then drafting and publishing with administrator oversight, while the Customer Intent Agent autonomously keeps self-service tools up to date by analyzing customer conversations, case notes, and transcripts across all channels. It maps emerging issues and solutions into an intent library, powering chatbots and IVRs with relevant responses and surfacing proactive prompts for service reps via Copilot. These agents can work together or independently to ensure accurate, current information across self-service and assisted channels, transforming customer experiences.

We're excited to sponsor this report that highlights how a solid knowledge management foundation enables contact centers to make the most of gen AI, with strategies to help organizations build and optimize their knowledge frameworks. Whether you're early or further along in your AI journey, we hope the insights here help drive your own innovation and transformation. And know that Microsoft is here to support your success.

Learn how Microsoft can help you transform service experiences with AI here.

Generative AI Success in the Contact Center Starts with Knowledge Management

When a customer reaches out to a contact center, it's clear that the interaction represents a unique opportunity for the company to deepen the relationship. When customers can quickly and easily resolve their questions using self-service, or when customer service representatives can provide rapid resolution and a comprehensive and personalized experience and make the process as easy as possible for the customer, it can solidify the customer relationship and ensure enduring loyalty.

Now, companies are increasingly looking to improve contact center operations and the customer experience by automating and augmenting customer service functions with generative AI (gen AI). And to do so, they are ramping up existing knowledge management practices to ensure the quality and relevance of the data driving those gen AI systems. The reason is that it is critical to ensure the knowledge sources are constrained to the information required to feed into the system and that the knowledge is up to date, accurate, and fully accessible to help achieve the greatest value from the gen AI-driven systems supporting customer contact. In fact, according to a survey conducted by Customer Contact Week Digital,[1] 83% of respondents report knowledge management represents the primary agent-facing AI initiative for 2024.

And all indications are that increased productivity won't be the only benefit of such interaction. "With further personalization, we are able to steer the customer to the right channel for providing a unique experience. We've been trying to affect that shift, and it is much more pronounced right now," says Oana Cheta, a Chicago-based partner at global management consulting firm McKinsey & Co., where her focus is on gen AI in service operations. "We can

HIGHLIGHTS

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Helping service reps work more efficiently has a **direct impact on the customer experience**.

actually take into account preferences and current behaviors to predict the best way to resolve [any question]."

Cheta sees three primary business benefits from gen AI related to greatly improved customer experience, cost savings, and operational efficiency. The first is reducing the cost base by lowering call volume through virtual agents that provide real-time assistance and suggestions. This level of customer self-service both reduces service rep workload and improves the customer experience. The second is automation of repetitive and time-consuming tasks, allowing reps to focus on more complex work for higher value add.

The third is professional development for service representatives. "You can improve coaching effectiveness with auto-generated, personalized plans for team members," she says. "You can provide better training, giving information that is precisely relevant to them [and] making suggestions on the next best action, or the next best product-transforming interactions, from simple transactions to value-driven relationships."

To support these enhanced contact center functions, companies will need to apply knowledge management practices to ensure their data is relevant, organized, and accessible. Then gen AI can bring together these multiple, disparate systems and data sources to present those service reps with a unified view of the customer interaction history. If the data and knowledge sources are not well managed, the systems will struggle to operate efficiently. When a gen AI system can assemble and present reps with this unified view, or profile, it can better inform automated systems and is a significant help to them in their efforts to provide rapid and accurate service, and it saves the customer from having to repeat themselves or wait for assistance. These profiles can also help customer service reps anticipate questions and let gen AI provide more relevant responses.

Through interviews with subject-matter experts, this Harvard Business Review Analytic Services report will help guide contact center executives as they augment their operations with gen AI systems and apply knowledge management processes and practices to ensure those gen AI systems are fueled by the most relevant, organized, and accessible data. The report will describe the benefits, requirements, risks, and best practices that those executives should take into account to let gen AI provide self-service and assisted service to improve contact center efficiency and provide an improved experience not only for customers but also for customer service agents.

Cost Savings, Better Service

Gen AI is already affecting a significant shift in contact center operations and the knowledge management practices that support them. Stamford, Conn.-based research firm Gartner Inc. predicts gen AI will reduce costs for [human] agent labor

"Humans can be freed up to answer the harder questions or talk more to customers about what they're really trying to accomplish. [Human agents] get much faster access to information they need to solve the customer's problem. Then they can use their critical faculties to decide if this is reliable information or not," says Thomas Davenport, professor at Babson College, a senior advisor to the chief data and analytics officer program at Deloitte Touche Tohmatsu Ltd., and a digital fellow at the MIT Initiative on the Digital Economy.

by as much as $80 billion by 2026.[2] And labor expenses often account for more than 90% of contact center operational costs. And there's more impact for contact centers than just cost savings. Gen AI systems can expedite onboarding for newly hired customer service reps and help them get up to speed more quickly. Gen AI can also help existing service reps provide an enhanced customer experience, which naturally improves business value.

Helping service reps work more efficiently has a direct impact on the customer experience. "Customers can get the best of what the system can offer and the best of what the [human] agent can offer," says Thomas Davenport, professor of IT and management at Babson College in Wellesley, Mass., a senior advisor to the chief data and analytics officer program at London-based global consultancy Deloitte Touche Tohmatsu Ltd., and a digital fellow at the MIT Initiative on the Digital Economy. "Humans can be freed up to answer the harder questions or talk more to customers about what they're really trying to accomplish. [Human agents] get much faster access to information they need to solve the customer's problem. Then they can use their critical faculties to decide if this is reliable information or not. Ultimately, we'll be at the stage where you can get reliable information from systems without needing a human intermediary. And that means it's available all the time."

> "We will see increasingly enhanced experiences and use cases—hyper-personalization where you're making that magic moment more like the norm. That is at our fingertips," says Oana Cheta, a Chicago-based partner at global management consulting firm McKinsey & Co.

Having access to vast amounts of curated data and detailed customer profiles will help both service reps and virtual assistants provide a more personalized experience. "We will see increasingly enhanced experiences and use cases—hyper-personalization where you're making that magic moment more like the norm. That is at our fingertips," says McKinsey's Cheta.

A more comprehensive and personalized experience is certainly the most significant benefit customers will experience. "Further personalization is really able to steer the customer to the right channel for providing a unique experience. We've been trying to effect that shift, and it's much more pronounced right now," she says.

Gen AI is also having an impact on the emerging category of the contact center as a provided service. Gartner defines contact center as a service (CCaaS) as a software-as-a-service-based application that helps customer service reps manage multichannel customer interactions from both the customer and agent perspectives. "CCaaS has had a lot of development in recent years," says Cheta. "It has been reaching a level of prominence and widespread applicability. The big thing with CCaaS is having add-ons targeting personalization, targeting automation, targeting efficiency, [and] targeting advanced routing, and predictive analytics and gen AI are helping with these."

This new era of more capable AI technology changes the dynamic in this environment, says Ian Barkin, founding partner of 2B Ventures, a Tampa, Fla.-based technology investment firm. "It's better at working across multiple enterprise systems and data types. It can assist the [human] agents, it can supercharge the agents, it can evolve the work the agents are doing. It's not just better at understanding the words you're saying. It's better at interpreting and assigning meaning, gauging sentiment and intent, and recommending next best actions."

Despite gen AI's advantages and benefits, many organizations are still in the early stages of their journey into the technology. "There are lots of pilots and prototypes, but not much in production. And you don't get much business value if you don't enter something into production," says Davenport.

Systems in use for customer experience cross virtually all modes of possible contact. According to a Forbes Advisor survey, 73% of businesses use or plan to use gen AI-powered chatbots for instant messaging, 61% use gen AI to optimize emails, and 55% deploy gen AI to personalize services for customers, such as making specific product recommendations. Companies also report using gen AI for creating optimized text messages (49%), personalized advertising (46%), and website copy (42%). According to that same survey, 64% of respondents believe gen AI will improve their customer relationships. **FIGURE 1**
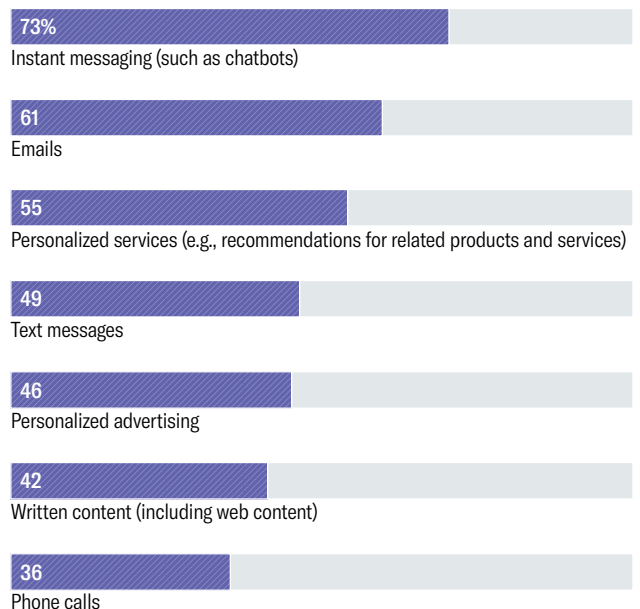
Training Data and Human Agents

Gen AI is fueled by the data fed into the system, so ensuring the accuracy, timeliness, and relevance of that data is critical. Contact center executives must make every effort to ensure

FIGURE 1

Gen AI Helps Companies Reach Customers

Companies are deploying gen AI for customer contact across all channels

73%
Instant messaging (such as chatbots)

61
Emails

55
Personalized services (e.g., recommendations for related products and services)

49
Text messages

46
Personalized advertising

42
Written content (including web content)

36
Phone calls

Source: Forbes Advisor survey, April 2023

> "If you have ten technical notes related to a particular product, you have to carefully determine which one is most current, accurate, and relevant before putting it into the system. If you end up loading all ten, which happens in many poorly managed knowledge management environments, the gen AI system is not going to be able to figure out the right answer for the customer or the [human] agent," says Babson College's Davenport.

the data sets driving their AI systems are as up to date, accurate, and relevant as possible using current knowledge management tooling and tagging technologies.

"Companies [employing] knowledge management are using techniques developed a while ago. You have to make sure your content is accurate and relatively unique," says Davenport. "If you have ten technical notes related to a particular product, you have to carefully determine which one is most current, accurate, and relevant before putting it into the system. If you end up loading all ten, which happens in many poorly managed knowledge management environments, the gen AI system is not going to be able to figure out the right answer for the customer or the [human] agent."

Contact centers face challenges not only in the volume of data but also in the variety. "The beauty of contact centers is that they are massive, deep oceans of data. It's probably the biggest source of data in any enterprise anywhere on the planet, but it is also often the most unstructured," says 2B Ventures' Barkin. He advises companies to make "an honest assessment of the data you have, the source, and then perform rigorous data curation that informs the algorithms you deploy and the decisions you make."

Knowledge management practices are critical to ensuring that accurate and relevant data is fed into any gen AI system. Only then can gen AI aggregate and analyze vast amounts of data from numerous disparate sources such as knowledge bases, existing customer data, CRM systems, and others. Yet once data accuracy and relevance are ensured, gen AI itself can help ensure that all data presented to customer service representatives is accurate, relevant, and comprehensive.

"Chatbots and virtual agents are tapping in [to] knowledge management tools to provide accurate answers," says Cheta. "As you're leveraging gen AI, you can retrieve information faster. You can analyze the content, customer interactions, and feedback and update knowledge bases in real time. You're pulling information out but also contributing back to those knowledge bases."

Bringing in external data also helps contribute to a more comprehensive data landscape. "I worked with a telecom company doing forecasting for field service technicians," says Jorge Amar, a senior partner in McKinsey's Miami office. "We incorporated weather data, as weather is a big driver when thinking of telecom maintenance and repair. We also used traffic data. Getting from point A to point B at 9 a.m. is very different than doing it at 3 p.m."

There is now an approach for storing, managing, and accessing massive quantities of documents called retrieval-augmented generation (RAG), which uses what are known as a vector database and semantic similarity models to call up needed content. "You simply can't fit 100,000 documents into a prompt window or context window, so you have to work out a way to get to those documents as needed, and that process is called RAG," says Davenport.

Another approach is autonomous AI agents that are being developed that can go beyond delivering automated responses to perform a range of complex customer service tasks, without any human intervention. Gartner describes autonomous agents as "combined systems that achieve defined goals without repeated human intervention, using a variety of AI techniques to make decisions and generate outputs." These autonomous agents, according to Gartner, "have the potential to learn from their environment and improve over time, enabling them to handle complex tasks."

As autonomous agents handle increasing volumes of tasks, human agents may be able to focus exclusively on the value-driven tasks that require critical thinking and empathy, with autonomous agents also taking on the role of keeping knowledge bases perpetually up to date by analyzing case notes, transcripts, summaries, and other artifacts from human-assisted cases to uncover insights—both updating self-service tools and refreshing existing content or drafting new articles.

While the data driving gen AI systems in contact centers will come from a variety of sources, much of that will be customer data—customer interaction records, purchasing patterns, and address and contact information—so naturally, protecting that information is critical. "Step one is to make sure you have a private instance of a language model that is not going to use

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your prompts you put into it to train future models, which could well give away proprietary customer information," says Davenport. "And you still have to train [human] agents to not reveal things about customers that might pop up in the system."

Training human agents is just as important as curating the data and training language models. "You have to train [service reps] in how to create effective prompts and how to identify potential hallucination problems so they just don't pass along the problems to customer[s]," he says. "Given the quality of gen AI systems today, it's useful to have a human intermediary looking at the output to determine whether or not it makes sense. That requires a critical perspective that not [a] lot of agents might have right out of the box."

Davenport stresses that there's always the need for customized training in contact center applications. "That means training on knowledge of your products and your processes, and that really requires high-quality data," he says. "And most companies don't have high-quality data, particularly high-quality unstructured data."

Even as customer service reps are learning to get the most value out of gen AI systems, those systems are also helping expedite training. "The time to proficiency for a [human] agent is becoming much faster," says McKinsey's Amar. "It typically takes anywhere from 10 to 12 weeks from a training perspective [for new agents]. Gen AI is definitely accelerating time to proficiency and helping agents reach their highest potential much faster. Companies are doing gen AI-powered training, simulating calls for agents to come up to speed faster."

Managing the Risks

While gen AI can streamline the customer contact experience, companies should be mindful of balancing the gen AI and human connection. "The biggest risk is the tendency to over-rely on gen AI in direct-to-customer engagements," says Noelle Russell, chief AI officer at the Miami-based AI Leadership Institute. "There are plenty of ways for a company to leverage generative AI to help their [human] agents, from active call listening to note taking to sentiment analysis and post-call summarization."

And contact centers can help mitigate those risks by getting comprehensive customer profiles in front of customer service representatives. Those profiles will be more comprehensive, accurate, and effective when they are drawing from data that is well curated and managed. "One way to create immediate value for contact centers is to create a way for agents to find the right information at the right time," she says. "I often see gen AI used to help create concise summaries or statements to make the answers found in a semantic search easier to read and use during real-time question answering."

Putting gen AI in direct customer contact does require certain safeguards. "Many times, companies will want to have

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gen AI used in direct-to-customer communication when they haven't built the safety systems to ensure that the models won't lie or hurt anyone," Russell says. "I recommend that they first enable gen AI features in their agent dashboard and amplify the effectiveness of their agents while they build the practices they need to put in place to ensure safe and responsible customer interactions."

Davenport cautions that the potential for complexity or lack of clarity in terms of strategic direction can present challenges. "There's a lot of discipline necessary to really get value from gen AI in contact centers or anyplace else." He advises contact center executives to conduct controlled experimentation to accurately determine the best ways to deploy gen AI both to save time and to improve the quality of the customer experience. "Most companies are not that good at experimentation, particularly controlled experimentation," he says.

Organizations certainly show awareness of such risks. According to a McKinsey survey, "The State of AI in 2023: Generative AI's Breakout Year," of companies using or planning to use gen AI, the three most relevant risks are inaccuracy (56%), cybersecurity (53%), and intellectual property management (46%).

Despite the common perception that gen AI may result in widespread job loss, workforce and labor displacement only ranked as the seventh highest relevant concern, at 34%, with only 13% of respondents actively working to mitigate that potential risk. "AI in the call center space has long been viewed as both a savior and a threat. In 2012, the narrative was effectively that technology is going to put us out of work,"

says Barkin. "That was 12 years ago, and call centers continue to thrive and serve a valuable role in customer service. The work they do may have changed thanks to better technology, but their importance has not. The narrative was one of fear, but it didn't manifest." **FIGURE 2**

First Steps

Aligning the strategy and business drivers for moving gen AI from experimentation to production is the foundation for a successful deployment. "Avoid doing technology for the sake of the technology and really ensure a connection with the business," says Cheta. "Make sure you're solving a business problem or addressing a business opportunity. When thinking about the gen AI journey, start with [a] strong strategy that is fully aligned with the business. You need to be methodical about how [gen AI] is connected to business objectives."

And of course, since data is what fuels gen AI systems, ensuring high-quality data with modern knowledge management practices is critical. "Gen AI is helping move to more automated knowledge bases. You can retrieve information faster ... analyze the content interactions and feedback and update the knowledge bases in real time," she says. "You're pulling out information but also contributing back to that by bringing knowledge management into the picture. So you're not just pulling out knowledge and data; [you're] also ensuring you're on a critical path to efficiently and effectively resolving issues."

Starting off with a clear focus on precisely how gen AI will fit into contact center operations is also essential. "The first thing I encourage organizations to do when looking to build AI solutions for contact centers is to actually spend time in the contact centers," says Russell. "You will quickly find the areas of friction and pain experienced by the very people you are trying to help. Instead of focusing on increasing efficiency in a single call, focus on how we might use gen AI to impact total time to resolution. This is where gen AI really shines."
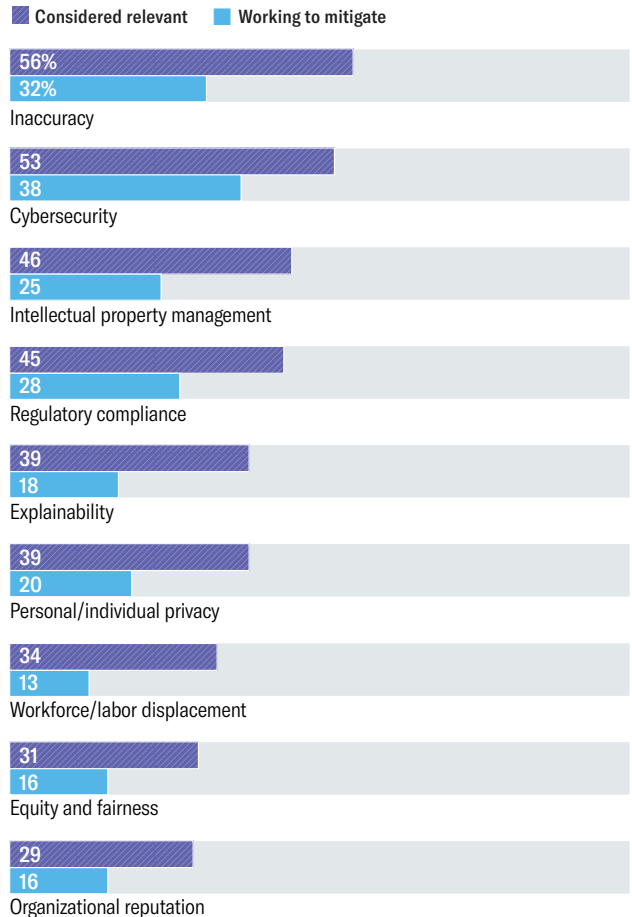
Russell agrees that alignment with the business goals and values is important for success. "The first question to drive clarity for gen AI projects is to understand your organization's core values. This is critical because your systems will amplify your core values," she says. "The second is to evaluate risk to select the right use case based on alignment with your core values and risk profile. The third is to evaluate complexity. It is important to remember that AI is research; it's an experiment. Begin with small achievable goals and test those hypotheses."

Having more rapid access to a variety of data from a variety of sources, as facilitated by gen AI and driven by properly curated and managed knowledge bases, holds considerable potential. "Gen AI allows us to more confidently answer issues and questions that come from customers through digital channels. For example, any information available on a website

Not without Risks

Businesses ranked what they consider the most relevant risks of gen AI

Considered relevant   Working to mitigate

	Considered relevant	Working to mitigate
Inaccuracy	56%	32%
Cybersecurity	53	38
Intellectual property management	46	25
Regulatory compliance	45	28
Explainability	39	18
Personal/individual privacy	39	20
Workforce/labor displacement	34	13
Equity and fairness	31	16
Organizational reputation	29	16

Source: McKinsey & Co. survey, August 2023

can now be made available through a conversational interface that is more accurate and reliable than chatbots of the past," says Russell. "Now we can ground the chatbot in information hosted on the existing website or other defined sources of information, allowing us to reduce the friction for customers who don't want to call in to ask their question."

Looking to the Future

While organizations progressing on their journey into using gen AI to augment contact center operations may already be seeing benefits, experts contend the future holds much greater potential for the technology. "Over time, systems will get much better at having [a] dialogue with the agent

> "What if companies decide that part of the value proposition of the company is actually helping you talk to a human? That could become [a] strong selling point. These possible consequences could be realities within the next three to five years and change the way companies think of customer service," says Jorge Amar, a senior partner at McKinsey & Co.

or customer directly," says Davenport. "I hope companies do enough experimentation and process redesign to figure out the right mix of human and machine in the customer service context." And of course, these systems will continue to improve and evolve. "After you develop these systems, there's a constant maintenance activity in terms of how to input new knowledge into the system and learn from the service agents and customers," he says.

And autonomous agents are set to increasingly help manage knowledge systems and customer interactions, freeing human agents to focus on strategic and high-touch customer service functions.

"Under the right conditions, gen AI can create a lot more knowledge and accessibility and make it easier for customers to find out what they need to know without needing a human to intervene," says Davenport.

"It's going to be interesting to see how adoption levels evolve," says Amar. He believes there will be what he calls second- and third-level business consequences at organizations making this shift in contact center operations. "What if the cost per call is X? Then you put in solutions to make it 50% [cheaper].

The business case is going to change," he says. "Now you might want customers to have human interaction to help the service rep cross-sell or upsell. It's an opening to transform the fundamental economics of customer service. There's still cost reduction, but now also revenue generation."

This shift could even change the value proposition of customer service. "What if companies decide that part of the value proposition of the company is actually helping you talk to a human? That could become [a] strong selling point," Amar says. "These possible consequences could be realities within the next three to five years and change the way companies think of customer service."

As companies begin or continue their gen AI journey, one major factor will be how well they apply knowledge management practices to ensure the data feeding the systems is as high quality as possible. "One element is data readiness," says Amar, "and whether a company has their data ready to go into the gen AI journey. They need a roadmap for creating data products and continuing to refine the model, clean up the data, and capture new data."

Endnotes

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