



# Top 3 generative AI use cases for customer experience

How generative AI is revolutionizing interactions with today's customer—and redefining the future of engagement

## Who is this for?

This eBook is written for customer experience, marketing, and sales leaders and contact center decision makers who are interested in using generative AI applications to improve customer experience.



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## INTRODUCTION

# The customer experience revolution, powered by generative AI

Today's businesses and public sector organizations compete for customer mindshare and preference across many arenas, including product design, price, quality, reliability, and ease of use. But, one factor that consistently creates differentiation and effectively wins customers is the ability to provide a continuously great customer experience (CX).

Providing a great CX can make all the difference when you are looking to create engaging and meaningful customer journeys and drive business growth. However, the reality is that organizations are faced with multiple challenges as they look to transform CXs. Rising call volumes, high customer service agent turnover, and the underwhelming performance of digital and self-service solutions have left more work to be done.

To solve for these challenges, generative artificial intelligence (AI) can be leveraged to build value by enhancing the CX, creating brand loyalty, improving productivity, and generating revenue. This revolutionary technology leverages large language models (LLMs) and deep learning techniques to understand complex conversations and inquiries. With these capabilities, AI can generate more natural and conversational responses, handle complex queries, and provide personalized answers and recommendations tailored to each individual customer. In fact, McKinsey Digital research shows generative AI can lift productivity for certain customer support use cases (through intelligent bots, for example) by up to 45 percent.<sup>1</sup>

Turning the promise of generative AI into engaging and relevant CXs doesn't have to be a pipe dream. In this eBook, discover how Amazon Web Services (AWS) is helping organizations like yours bring CX to new heights and deliver on the promise of generative AI.



<sup>1</sup> "The economic potential of generative AI: The next productivity frontier," McKinsey Digital, June 2023



# 3 ways generative AI is transforming customer experiences

Generative AI is delivering greater personalization and providing effective self-service options through intelligent chatbots and powerful virtual assistants. The technology is also transforming CX by supercharging customer service agents' capabilities, improving first contact resolution, automating manual tasks like categorization scoring, and summarizing customer interactions.

In this eBook, we will illustrate how your organization can unlock the benefits of generative AI to change the game in customer service across three use cases:

- 1 Chatbots and virtual assistants**
- 2 Agent assist and conversational analytics**
- 3 Personalization**

## Terms to know

**Generative AI** is a type of AI that can create new content and insights, including conversations, stories, images, videos, and music. While traditional AI is trained for specific tasks like speech recognition, generative AI can further enhance a wide variety of use cases being handled by traditional AI.

**Foundation models** (FMs) are machine learning (ML) models that power generative AI applications. They are pretrained on vast amounts of data and may contain billions of parameters (or variables)—a massive increase compared to the most sophisticated models of just a few years ago.

**Large language models** (LLMs) are a type of ML model trained on trillions of words to carry out tasks in ways that mimic human conversation. LLMs power generative AI applications across multiple industries, including copywriting for marketing, summarizing documents for legal, and simulating clinical trials for healthcare.



## USE CASE #1

# Chatbots and virtual assistants

Generative AI is powering a new generation of chatbots and virtual assistants that can comprehend intricate customer issues, synthesize information from multiple data sources, and provide relevant answers in real time. In the contact center and other customer support channels, such as in-app messaging, SMS, and email, generative AI is making an impact in several ways. The technology makes it easier to build self-service experiences that understand the complex nuances of customer intent and can deliver responses in natural language. This can improve contact center by answering routine questions and allowing customer service agents to focus more time responding to more complex and nuanced inquiries.

Generative AI helps solve three primary challenges:

1. **Q&A limitations:** Offers a wider and more personalized response for common questions to improve answer accuracy
2. **Misunderstood or missing intents:** Clarifies users' responses so customers can provide free-form responses, allowing you to move to a natural language processing (NLP)-driven design
3. **Development time:** Vastly reduces the complexity and time it takes to build chatbots and virtual assistants to improve productivity and allows builders to reprioritize effort on fine-tuning the conversational experience

**74%** of respondents are likely to spend more with brands that allow them to avoid contacting a live agent<sup>2</sup>

<sup>2</sup> Merritt, A., "What Do Customers Really Think of Automated Customer Service?" AWS Partner Network (APN) Blog, November 2022

## How generative AI improves existing virtual assistant capabilities

Organizations are also leveraging generative AI to enhance the conversational search capabilities of their virtual assistants. Frequently asked questions and search queries can be enhanced through retrieval augmented generation (RAG) capabilities. RAG allows LLMs to call on a company's trusted and approved knowledge sources to answer questions in a more conversational way in real time. With the right controls and transparency in place, contextual and safe responses are created, reducing the possibility of model hallucination. Customers benefit from finding detailed information they need faster.

Generative AI can also automate delivery of these responses in the user's preferred language—minimizing the need for translation services and positioning your brand as one that goes the extra mile. Overall, deploying chatbots and virtual assistants powered by generative AI drives customized, engaging CXs that increase customer engagement and improve brand loyalty.

## Strengths of generative AI for chatbots and virtual assistants

### CONVENTIONAL AI CAPABILITIES:

- Creating predictable, predetermined responses
- Accelerating bot design with transcripts
- Delivering accurate answers
- Automating simple transactions
- Classifying issues to intelligently route to the right agent
- Delivering low-latency voice and text applications

### GENERATIVE AI STRENGTHS:

- Understanding nuanced language
- Accelerating bot development
- Enabling RAG-based search functionality of knowledge bases
- Generating summarized answers from multiple sources
- Handling unpredictable dialogue

## Achieve transformative results with self-service conversational AI on AWS

Adding the power of generative AI provides multiple benefits to businesses—it allows organizations to automate customer support workflows to significantly reduce call center wait times, while providing 24/7/365 access to conversational self-service channels like chatbots allows customers to communicate on their terms.

Chat-based virtual assistants and interactive voice response systems (IVRs) can perform tasks such as scheduling appointments, answering common questions, or assisting customers with simple transactions. More complex issues can be solved by routing the requests to human agents.

AWS offers several ways for organizations to take advantage of generative AI and deploy voice and text conversational interfaces. **Amazon Connect** is a fit for organizations seeking a contact center application with built-in generative AI capabilities. If you are looking to build self-service experiences, **Amazon Lex** is a fully managed service powered by advanced natural language models. Enterprises can use Amazon Lex to build a multichannel, multi-language conversational experience that dynamically responds to customers' questions, answers, and feedback. Amazon Lex's RAG approach harnesses both the breadth of knowledge available in repositories as well as the fluency of LLMs.

Additionally, **agents for Amazon Bedrock** allow you to build fully managed virtual agents in just a few clicks. These virtual agents can understand users' requests and take action to fulfill them, break down complex tasks into multiple steps, and carry on conversations to collect additional information.

**Amazon Bedrock** makes FMs from Amazon and leading AI startups available through an API. The solution makes it easy to build and scale generative AI applications. You can privately customize FMs with your own data and seamlessly integrate and deploy them in your applications. Amazon Connect and Amazon Lex leverage Amazon Bedrock to provide all the powerful capabilities of generative AI.



## Bot-building with LLMs

Amazon Lex leverages the power of LLMs available through Amazon Bedrock to redefine both the builder and customer experience using generative AI. Creating a bot is easier and faster than ever—simply use FMs to generate sample intents, slots, and utterances.

Infusing generative AI capabilities throughout the builder and end-user experience avoids the need to design exhaustive conversation flows within a bot. Instead, defining the business logic becomes the central focus. Generative AI also improves containment rates and issue resolution time, eliminating the high costs of missed queries and human representative transfers. In addition, it allows simple tasks like bill payment and balance checks to become automated, creating more intelligent, simplified experiences.

## CUSTOMER STORY

# Booking.com

Booking.com, one of the world's leading digital travel agencies, is a marketplace that connects millions of customers with memorable travel experiences across the globe.

### The challenge

As a technology-focused business, Booking.com was looking to generative AI to improve recommendations, remove friction, and deliver a tailored booking experience for its customers. It sought a generative AI solution that could use data to match people with experiences that were beyond their expectations.

### The solution

By fine-tuning language models using **Amazon Bedrock**, the company can provide comprehensive travel recommendations to customers, connecting them with their dream destinations and making Booking.com the go-to platform for travel inspiration.

### The results

Using generative AI along with the broad capabilities of AWS, Booking.com is increasing customer satisfaction and brand loyalty.

[Read the full story ›](#)



# Booking.com

**“Generative AI is on everyone’s agenda right now and using Amazon Bedrock is very exciting for us. We can pick the right language models and fine-tune them with Booking.com data to deliver destination and accommodation recommendations that are tailored and relevant.”**

Thomas Davey, VP of Big Data & Machine Learning,  
Booking.com



## CUSTOMER STORY

# CSC Generation

As a multi-brand technology platform, CSC Generation helps retailers transform into high-performing, digital-first brands that are passionate about curating their customers' perfect living environment.

### The challenge

CSC Generation's customer service operation offers various levels of support over voice, chat, email, and web ticketing. It needed a contact center solution that was flexible and offered built-in generative AI capabilities to improve agent efficiency and self-service experiences for customers.

### The solution

Creating one contact center solution with Amazon Connect and generative AI for the various CSC Generation brand and subsidiary workflows allows for more efficient handling of customer interactions, configurations, and business rules. Most common workflows are serviced entirely by voice without number prompts in IVR, leveraging generative AI. Amazon Lex integrates self-service capabilities into operations with pre-generated lists of utterances, answering the most common customer questions in complete sentences.

### The results

The average call time for questions like "Where's my order?" is now under a minute. Overall, CSC Generation is improving customer service, reducing costs, and driving growth. The organization maintains customer trust by leveraging the best generative AI models without sharing sensitive information, as only sentence structure is utilized by generative AI, not customer names or order numbers. Human agents can answer questions in a more personalized way, providing visibility on what the customer reached out about, responses, and previous customer contact history.

[Read the full story ›](#)



## CSC | GENERATION

**"We're excited about the potential of generative AI and plan to expand our use of the technology with Amazon Connect. Our vision extends beyond using generative AI to suggest responses for agents in chat and voice channels; we aim to also use it to authenticate users by transitioning from traditional security questions..."**

Andrew Templeton, Chief Technologist,  
CSC Generation





## USE CASE #2

# Agent assist and conversational analytics

The stakes for customer service have never been higher, and the ability to consistently meet customer service expectations is a powerful differentiator. These factors are driving organizations across the public and private sectors to reimagine contact centers as the central hub of customer service operations—and the engine that powers great CX.

However, agents fatigued by information overload create higher turnover, causing concern for supervisors. Agent-assist capabilities can improve agent performance and provide support in real time during calls.

In addition, conversational analytics can help derive actionable insights and identify coaching opportunities from customer conversations. The methodology involves leveraging generative AI to extract key insights from real-time and recorded customer interactions across a variety of touchpoints such as calls, chats, and more. This data is transcribed, analyzed, and summarized to gain intelligence regarding customer needs, call drivers, and emerging trends—all helping to improve the agent's ability to deliver exceptional customer support.

Advanced analytics can help businesses accelerate their quality management and compliance workloads by analyzing 100 percent of their calls versus random sampling 2 percent of their calls manually. Generative AI enables more sophisticated analysis techniques like topic modeling, sentiment analysis, intent recognition, summarization, and automated scorecards, unleashing the ability to truly understand the voice of the customer.

Along with conversational analytics and generative AI, increasing investments being made in the contact center clearly demonstrate it is undergoing a massive transformation. In fact, the global contact center software market is projected to expand at a compound annual growth rate (CAGR) of nearly 20 percent from 2024 to 2032.<sup>3</sup>

Much of these investments have focused on bringing generative AI into the contact center to improve self-service, agent assistance, manager assistance, and analytics. Generative AI has the power to go beyond assisting agents and can help drive new levels of contact center efficiency, leveraging automation and intelligence.

## Transform the contact center—enhance outcomes for customers and agents

AWS offers flexible options to take advantage of AI in your contact center. **Amazon Connect** helps companies of any size deliver superior customer service at a lower cost. As a single unified contact center application, Amazon Connect helps elevate the customer, agent, manager, and administrator experience. Contact centers can be set up and scaled to support millions of customers in minutes with pay-as-you-go pricing.

Amazon Connect leverages generative AI to strengthen the agent and manager assistance capabilities mentioned above. **Amazon Q in Connect**, a generative AI-powered assistant for contact center agents, automatically delivers agents suggested responses and actions to address customer questions in real time. Amazon Connect also delivers managers generative AI-powered post-contact summaries that provide essential information from customer conversations in a structured, easy-to-read format.



<sup>3</sup> "Contact Center Software Market Size & Global Report (2024–2032)," Fortune Business Insights, April 2024



Customers can augment their existing on-premises or cloud contact center with generative AI capabilities for agent assist and conversational analytics solutions from AWS Partners and AWS open source solutions such as Post Call Analytics and Live Call Analytics and Agent Assist solutions. These solutions combine multiple AWS services such as **Amazon Transcribe Call Analytics** and Amazon Bedrock to provide powerful, AI-powered capabilities such as call categorization, summarization, automated agent scorecards, and more. These tools enhance CX and boost agent productivity while reducing operational costs.

By summarizing and analyzing conversations, customer journeys, agent performance, and more, generative AI holds the power to convert a costly contact center into a revenue generator by recommending the next best actions, new business opportunities, and performance improvements.

## How generative AI can augment existing agent assist and conversational analytics features

The addition of generative AI brings multiple benefits to contact centers and other contact channels, transforming the capabilities of agent assist and conversational analytics. Organizations can revolutionize customer service with actionable insights, boost agent productivity, and reduce handling time.

## Strengths of generative AI for agent assist and conversational analytics

### CONVENTIONAL AI CAPABILITIES:

- Unlocking real-time insights, such as customer and agent sentiment, call drivers, non-talk time, interruptions, and talk speed
- Protecting sensitive customer data with personally identifiable information (PII) redaction
- Delivering accurate call transcripts using NLP
- Bridging communication gaps by translating content on the fly

### GENERATIVE AI STRENGTHS:

- Uncovering valuable insights such as a topic classifications, automated agent scorecards, and more
- Producing dynamic answers from trusted data sources
- Automating and standardizing manual tasks such as call summarization
- Improving monitoring and compliance with automated call categorization

## CUSTOMER STORIES



Orbit Irrigation is a manufacturer and supplier of home and commercial irrigation systems.

**“To resolve customers’ questions, our agents spend two to three minutes per interaction searching through several different sources of knowledge, including Orbit product pages, customer account pages, and internal knowledge forums. This multistep process adds time to the interactions for agents and customers. The new responses automatically generated at each turn of the customer conversation by Amazon Q in Connect are tailored based on our own knowledge base articles. Amazon Q in Connect will create 10%-15% time savings on every contact, and the increased number of calls handled every hour is expected to translate directly into costs savings for Orbit—all done with improved customer sentiment.”**

Brian Dick, Senior Manager of Customer Care, Orbit Irrigation



Principal Financial Group® is dedicated to improving the wealth and well-being of people and businesses around the world.

**“With AWS Post Call analytics solution, Principal can currently conduct large-scale historical analytics to understand where customer experiences can be improved, generate actionable insights, and prioritize where to act. Now, we are adding generative AI using Amazon Bedrock to help our business users make data-driven decisions with higher speed and accuracy, while reducing costs. We look forward to exploring the post call summarization feature in Amazon Transcribe Call Analytics in order to enable our agents to focus their time and resources engaging with customers, rather than manual after contact work.”**

Miguel Sanchez Urresty, Director of Data & Analytics, Principal Financial Group



The Kentucky Transportation Cabinet (KYTC) provides customer service for vehicle licensing and taxes to more than 4.1 million drivers in Kentucky through voice calls.

Using Amazon Connect, KYTC now has more insight into the analytics of its customer calls and chats, offering near real-time conversational analytics and quality management powered by AI technologies.

**“We can run near-real-time reports without the fear of crashing the contact center like we had under the old solution. Managers are very appreciative of having near-real-time access to metrics instead of needing to wait a day.”**

Mike Miller, Director of the Division of Customer Service, KYTC

[Read the full story ›](#)



### USE CASE #3

## Personalization

With organizations focusing on customer-centric strategies, delivering personalized content and recommendations to users has become increasingly critical for business success.

Organizations can better leverage data across their business to create a unified view of a customer for the purpose of hyper-personalizing experiences and offers. Generative AI makes this easier because it can analyze exabytes of data, identifying patterns and trends that can inform a personalization strategy. Instead of spending time researching and creating audience segments, an organization can leverage generative AI to identify segments with unique traits that may have been overlooked in existing customer data.

AWS offers several ways to personalize CX. **Amazon Personalize** is a service that personalizes communications and offerings, leveraging user events, interactions, and metadata. Augmenting this service with generative AI empowers organizations to create individualized marketing content and remarkably sophisticated search experiences. Brands can harness these resources to understand their target audience more deeply and personalize every touch point. The solution has multiple benefits—it can be used to enhance the entire customer journey; detect specific market trends; understand, measure, and improve user experiences; and help customers find what they want quickly.

**Amazon Connect** delivers contact center agents and managers real-time access to up-to-date customer info to personalize each customer service interaction. Generative AI automatically maps data from disparate sources to quickly combine customer information and interaction data from across your organization into a unified customer profile.

**76%** of consumers are more likely to consider purchasing from brands that personalize communications<sup>4</sup>

<sup>4</sup> "The value of getting personalization right—or wrong—is multiplying," McKinsey & Company, November 2021

## Elevate personalization with AWS

To entice and delight customers, organizations can provide real-time recommendations across the entire user journey with Amazon Personalize. While generative AI makes it possible to interact with users in compelling ways, Amazon Personalize elevates the experience to fit users' preferences. Informed by user behavior, segmentation, and contextual elements, these dynamically adapted recommendations can be optimized toward specific business outcomes and metrics.

Amazon Personalize analyzes data from past interactions to create detailed customer profiles, anticipate customer needs, and provide tailored recommendations. The service can also be used to predict future outcomes, helping to create transformative CX. Delivering these dynamic and highly personalized user experiences drives improvements in customer engagement, brand loyalty, and conversion rates. In addition, Amazon Personalize Content Generator, a new generative AI-powered capability, helps companies make recommendations more compelling by identifying thematic connections between the recommended items.

Search, another crucial component in engaging website and app users, brings high-intent traffic from individuals seeking specific products or categories. Studies have shown that around 40 percent of website visitors will use on-site search when they land on an ecommerce site, convert nearly twice as much as non-site search visitors, and account for 13 percent more revenue.<sup>5</sup> Past interactions and users' interests can be used to boost relevant items in their search results in real time. For example, with generic queries, a user's preference for a specific brand and price range can help surface relevant items.



<sup>5</sup> "15 best practices for ecommerce on-site search," Algolia, July 2023



**"Amazon Personalize has helped us achieve high levels of automation in content customization. For instance, FOX Sports experienced a 400% increase in viewership content starts post-event when applied. Now, we are augmenting generative AI with Amazon Bedrock to our pipeline in order to help our content editors generate themed collections."**

Daryl Bowden, EVP of Technology Platforms,  
FOX Corporation

## Take customer experience to the next level with personalization

By leveraging FMs, organizations can execute a truly comprehensive and impactful personalization strategy that enhances the customer journey at every touch point.

There are several approaches to extracting the benefits of Amazon Personalize. Product recommendations generated by Amazon Personalize can be fed into an FM. The FM is then used to power a generative AI application that can create personalized emails, taglines, images, and digital experiences. Emails can be further personalized at scale by creating endless variations of outbound messages tailored to each user—improving open rates, increasing engagement, and driving continued use of the particular service offered for a longer period of time.

In addition, generative AI-powered customer service with **Amazon Connect** provides a concierge level of support. It can help convert prospects into engaged customers, improve retention, and easily identify cross-sell opportunities, product substitutions, and promotional offers.

### Leverage generative AI capabilities to:

- Extract more impactful information from item descriptions and reviews
- Generate embeddings from text, audio, and images as inputs
- Derive better semantic understanding of the relationship between items
- Present recommendations in the style or brand of a particular company
- Create a summary of recommended news stories for each user based on preferences
- Develop marketing emails with hyper-personalized content
- Create a unified customer profile to deliver more personalized customer service



## Strengths of generative AI for personalization

### CONVENTIONAL AI CAPABILITIES:

- Product recommendations
- User segmentation
- Content recommendations
- Related items recommendations

### GENERATIVE AI STRENGTHS:

- Email, images, and marketing communications based on natural language prompting
- Personalized digests
- Improved recommendation relevance
- Concierge chatbots

## Use generative AI to personalize experiences

From marketing emails and conversational search to chatbots and customer service agents providing pertinent information, generative AI is the scalable solution to provide personalized, relevant user experiences to unique audiences.



**“Using the Amazon Connect generative AI data mapping feature will reduce the onboarding time and provide guidance on which data columns to use for the unique identification of a profile. With it, we will onboard future specialized data sources much quicker and enrich our Guest 360 profiles with the data to power our real-time personalization initiatives.”**

Michael Bennett, Distinguished Engineer, Choice Hotels

## CONCLUSION

# Next steps

In the era of generative AI, your organization can consistently deliver the quality CX today's customers demand—and differentiate your brand from competitors with personalized, engaging experiences that support your customers.

Now is the time to start deploying generative AI—and the best way to begin your journey is to select the right use case for your organization. Whether you're evaluating the three CX use cases outlined in this eBook or others, you should consider four factors to determine your ideal starting point:

1. Evaluate whether your business problem requires generative AI and whether using generative AI will result in better outcomes.
2. Demonstrate the value of the technology in ways that go beyond isolated proofs of concept. Identify a use case that can be achieved within 6–8 months to maintain momentum.
3. Select a use case where you have a lot of data to support. Remember, data is your differentiator and makes your offering unique. Generative AI models rely on substantial training data or fine-tuned language models, so this is essential.
4. Have proper guardrails in place to achieve compliance and trust. Embed human oversight to continuously monitor and refine model parameters and training processes, and build systems that cite the origin of information.

[Access the generative AI Use Case Explorer ›](#)



Wherever your journey takes you, AWS can provide you with the right tools to maximize the value of generative AI and deliver a CX that moves your organization into a new era of innovation, intelligence, and business growth.

[Learn how you can improve CX with generative AI on AWS ›](#)