Infographic: Artificial Intelligence Use-Case Prism for Customer Service

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AI can greatly enhance customer service operations in a multitude of ways. This infographic identifies 18 use cases for leveraging AI within customer service operations. Application leaders can use it as a starting point to prioritize opportunities.

Additional Perspectives

- Summary Translation: Infographic: Artificial Intelligence Use-Case Prism for Customer Service
  (10 March 2021)

More on This Topic

This is part of an in-depth collection of research. See the collection:

- Applying AI in Business Domains

Figure 1: AI Use-Case Prism for Customer Services

This infographic gives an overview of AI use cases in customer service and support. It includes a prism graphic ranking each use case against its business value and feasibility and a flowchart indicating the origin of the use cases.

Use-Case Descriptions

- **Agent workforce scheduling:** Combines agent information, such as preferences and skills, with historical volumes of contact across different channels. It incorporates these into planning and real-time tracking and forecasting of demand. The result is better utilization of resources.
- **Conversational customer assistants for self-service:** Uses natural language processing and natural language understanding as well as other methods to interact with customers via text or speach. Conversations identify and address customer intents. For example, customers seeking to obtain account information can do this via text or spoken requests. Sometimes called chatbots.
- **Customer emotion detection:** Uses emotion AI technologies (also known as affective computing) to analyze the emotional state of a customer, via computer vision, audio/voice input, sensors and/or logic. For instance, a retailer might use a camera to analyze facial expressions to identify which products are most attractive to customers.
- **Customer journey analytics for next best action mapping:** Tracks and analyzes how customers and prospects use live and assisted channels in order to model and anticipate where a customer journey may get stalled. It would then suggest the best way to move the interaction forward, for instance with a coupon or other incentive.
- **Customer segmentation:** Uses customer analytics and personalization engines to segment by demographic, geographic, psychographic and other groups. These operate in real time or offline. For instance, segmentation may allow different services based on the amount of time someone has been a client.
- **Human-in-the-loop (HITL) intent training:** Uses integrations between the NLU intent model and humans to classify intents not identified by the model,, improving the accuracy of chatbot interactions.
- **Hyperautomation to improve fulfillment:** Incorporates AI methods into spectrum of task- and business-oriented technologies, including robotic process automation, workflow automation, platform integrations, and intelligent business process management suites. For instance, a customer engagement hub might redesign and optimize order to shipping to support processes.

- **Intelligent contact routing:** Uses predictive methods to determine the best matched resource for a customer request. Routing approaches include using agent-personality classification and using behavioral pairing based on historical data. For example, an agent is selected based on the customer's historical purchasing information.
- **Knowledge graphs to optimize chatbot conversations:** Uses graph methods to store information about the chatbot's domain, for instance information about entities (people, products, prices and places). This can improve the accuracy and speed of responses. For instance, the chatbot can use the knowledge graph to answer complex questions related to the domain.
- **Offer personalization:** Uses factors such as customer behavior, history and stage of customer journey to present real-time offers. This improves conversion and order value. The technology is often embedded in promotions or personalization engines, especially for product-based offers.
- **Postcall wrap up with text analytics:** Uses text analytics, text summarization, speech-to-text, domain model, and rule-based methods to assist agents in post-call wrap-up. Actions can include summarization and coding. For instance, the assistant monitors the call, transcribing it to text. At the end of a call, the conversation is summarized.
- **Predicting customer lifetime value:** Uses historical data of spend, churn, and cost of sales and support, to develop predictive models to forecast future revenue or profit for each prospect and customer. This allows targeting sales and retention efforts towards the highest-valued prospects or customs.
- **Real-time agent coaching:** Uses text analytics, speech-to-text, and rule-based methods to assist agents in improving their performance. For example, the agent coach listens to a call in real time, and if the agent demonstrates inability to find an answer, the coach can silently provide real-time support or recommendations to help the agent.
- **Redacting personally identifiable information (PII):** Uses a mix of methods, including natural language processing, named entity recognition, part-of-speech tagging, and rules to identify and redact text information that an agent should not see in the log. For instance, redacting personally identifiable information from recordings of customer interactions or from text sessions with agents.

- **Speech analytics of sentiment or topics:** Uses a mix of AI methods, including speech-to-text, and then text analytics to extract contextual insights from recorded or real-time voice streams and conversations. Insights include topics, categories, emotional engagement, product feedback, competitive information, customer sentiment and compliance.
- **Trusted agent passive voice biometrics:** Extracts features and characteristics of each agent's voice. This can be used regularly throughout the day to ensure that the agent is indeed the speaker. For instance, this solution can be applied to work-at-home customer agents, ensuring that the person speaking throughout the day is indeed the actual agent, and not someone who stepped in and is *acting* as the agent.
- **Virtual assistant for new agent onboarding:** Uses chatbots to guide new agents through their first month. May integrate with back-end employee systems. For instance, new employees often have similar questions and specific sets of training and shadowing routines to follow. The assistant would guide them through this routine.
- **Visual search for customer sales:** Uses neural-network-trained models to identify context and content of images, finding products that share similar visual attributes. These enable image search or navigation filters by visual attributes, For instance, customers can locate items similar to a picture they have.

About This Research

Please note: These use cases have been selected and positioned based on an assessment by Gartner analysts and customer feedback. Their applicability may vary across organizations and industries. For detailed customization, clients can use Gartner's use-case prism toolkit (see Toolkit: How to Rank and Prioritize Your Use Cases With a Gartner Prism).

Recommended by the Authors

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Critical Capabilities for the CRM Customer Engagement Center

How to Use AI to Improve the Customer Experience

Uncovering Artificial Intelligence Business Opportunities in Over 20 Industries and Business Domains

Toolkit: How to Rank and Prioritize Your Use Cases With a Gartner Prism

5 Steps to Build the Right AI Infrastructure in Your Organization

Artificial Intelligence Maturity Model