

Artificial Intelligence

Chatbot Frustration is Real: Hidden Costs and Best Practices

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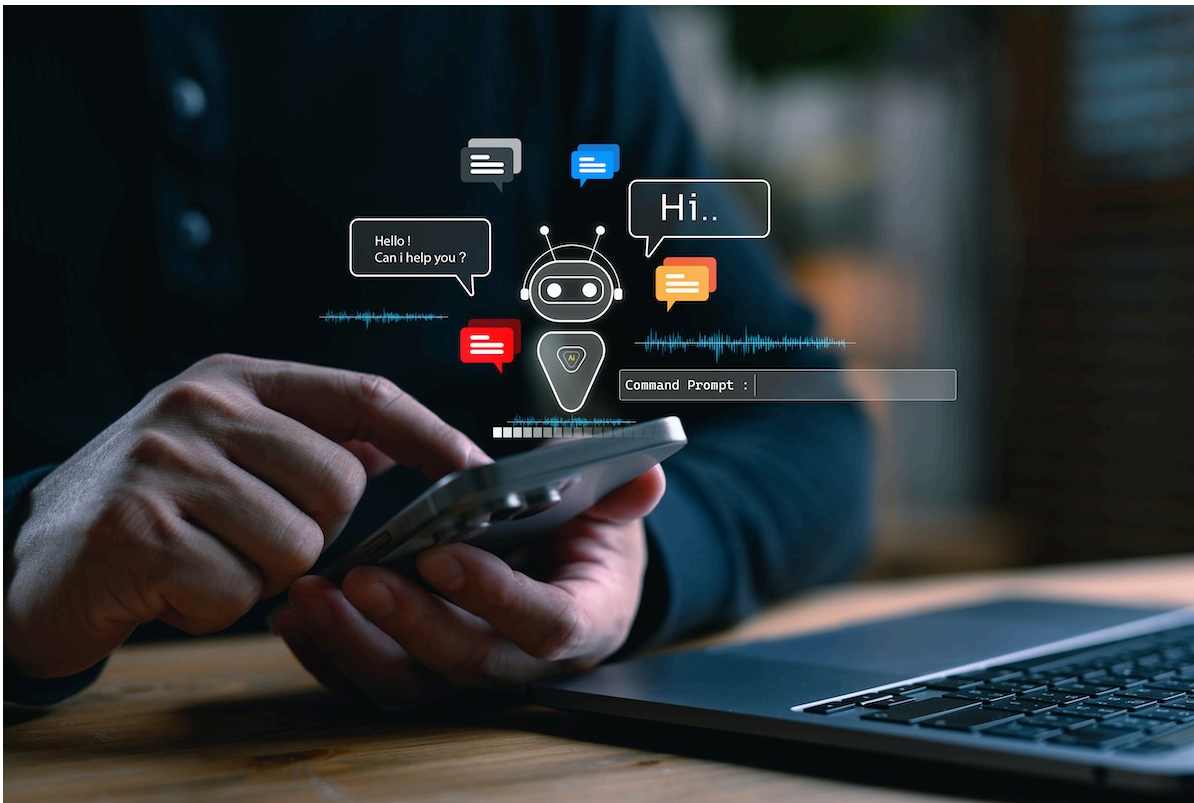


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Navigate and balance the trade-offs between cost reduction and customer satisfaction using customer-friendly chatbots.

When customers reach out to a business today, their first encounter is often not a human, but a chatbot. Compared to customer services by human agents, chatbot customer service leads to about \$0.70 saving for each customer interaction.¹ With personnel costs representing the largest expense of customer service, it seems a no-brainer for businesses to replace their human employees with chatbots. According to Juniper Research, chatbots are estimated to save businesses over \$10 billion annually by 2026.

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On the other hand, the hefty cost savings for businesses may lead to significant hidden costs for customers and consequently businesses as well. As chatbots proliferate, so does customer frustration. Multiple surveys show that 53-77% of survey respondents have had a bad or frustrating experience of interacting with chatbots.^{2, 3} Chatbot frustration has been shown to cause not only emotional stress to the customers but also anger and aggression toward the businesses behind the chatbots.^{4, 5, 6} After a poor chatbot

interaction, customers may behave in a more irritable manner with subsequent human agents, taking out frustration on them, which makes it more difficult and time-consuming for human agents to resolve the issue. Chatbot frustration has also been shown to reduce customer loyalty and trust toward the business, as well as future likelihood of transacting with the business.⁷ A recent Gartner survey of 5,728 customers found that 64% of customers preferred that companies didn't use AI and 53% would consider switching to a competitor if their companies were using AI for customer service.⁸

There are social costs as well. While businesses use chatbots to save labor costs, customers, who often get trapped in the "chatbot loop," can waste a great deal of time repeating their information or questions, processing long and repetitive responses from the chatbot, or simply waiting to be transferred to a human agent.^{9, 10, 11} Hence, productivity gains that businesses harvest from deploying chatbots can lead to productivity losses for the customers and their employers. Furthermore, customers who are frustrated or angry need to vent their feelings somehow, to family, friends, or even innocent bystanders. As a result, negative emotions from interacting with chatbots can spill over to negatively affect human-human interactions.¹²

At the collective level, a frustrating experience of interacting with a chatbot can compromise users' perceptions of all chatbots and reduce their trust as well as their likelihood of wanting to interact with other chatbots.¹³ In that sense, public trust in chatbots is public good.

In this article, we reviewed the latest academic and practitioner research on chatbot frustration to identify five sources and recommend best practices to mitigate the risks. The five sources of chatbot frustrations are: *failure to understand user requests, inability to solve complex problems, poor integration with human agents, lack of humanization, and lack of personalization.*

Sources of Chatbot Frustration	Recommended Best Practices
- Failure to understand user requests	* Design chatbots with active listening
- Inability to solve complex problems	* Set customer expectations of chatbot abilities
- Poor integration with human agents	* A seamless handover protocol to human agents

Sources of Chatbot Frustration	Recommended Best Practices
- Lack of humanization	* Be like human but not pretend to be human
- Lack of personalization	* Streamlined personalization

Source #1: Failure to Understand User Requests

A primary source of chatbot frustration is the chatbot’s limited ability to comprehend the customer’s requests. Customers approach chatbots with expectations that chatbots, like human agents, can understand and help them with their issues. Chatbots often misinterpret user intentions and respond with long, generic, and repetitive answers that customers don’t find helpful or relevant.^{14, 15} What is even more frustrating is chatbot “interrogation,” in which chatbots ask customers many questions that are not directly related to customers’ requests, without providing much useful information in return. Customers can easily feel ignored, misunderstood, and frustrated, especially if the issue is urgent or emotional.

Source #2: Inability to Solve Complex Problems

A second source of chatbot frustration is chatbots’ inability to resolve complex problems. It is related to but different from the chatbots’ limited ability to understand. Even if a chatbot can grasp the customer’s intent, it may lack the agency, authority, or contextual knowledge to solve the customer’s problem, e.g., issuing a refund or solving a technical challenge. The same Gartner survey showed that only 14% of customer service issues are fully resolved in self-service.¹⁶ Instead of handing over the customer to a human agent, many of today’s chatbots are designed to keep responding to customers with more questions, repetitive and irrelevant information, or useless apologies (e.g., “Sorry, I don’t understand it. Can you repeat?). It is known as the “chatbot loop,” i.e., a loop of endless conversations with a chatbot that goes nowhere.¹⁷

Source #3: Poor Integration with Human Agents

Despite the prevalence of AI and chatbot, human touch is still important in customer service, with 70-80% of customers preferring interactions with a human agent. Customers, who are trapped in the “chatbot loop” without being able to reach a human agent, get not only frustrated but angry. This failure of escalating to human agents can quickly turn a small annoyance into a full-blown breakdown of trust in the business. Even when customers explicitly request for a human agent, the chatbot often responds by saying, *“Okay, I understand you want to speak to a human agent. To better assist you, I need to know more about the problems you are calling about ...”* Some sources have identified this “no easy path to a human” as the single biggest irritant in customer service automation. The issue was so prevalent that some customers have found ways to break the chatbot loop by repeating e.g., *“speak to a human”* or even *“chicken nuggets”* many times until they get to a human, and shared the tips on platforms like Reddit.

Source #4: Lack of Humanization

Another source of chatbot frustration is the lack of humanization or fake humanization. Humanization is the practice of designing chatbots to imitate “human abilities and traits, such as humor, empathy, and politeness”.¹⁸ Human customers approach chatbots with human expectations — they expect to feel welcomed and understood by the chatbot. There is ample evidence showing the importance of humanizing chatbots with, e.g., pronouns, emoticons, humor, and empathetic languages. Yet it is also a fine line to walk for chatbot designs because chatbots are essentially not humans. While customers want chatbots to be humanlike, they don’t want chatbots to pretend to be humans. Fake humanity annoys customers when they feel that chatbots have gone too far in mimicking human behaviors in an exaggerated or pretentious way, without demonstrating genuine empathy or understanding. Such superficial attempts at human-likeness can backfire, creating discomfort or distrust among users.^{19, 20}

Sources #5: Lack of Personalization

The final source of chatbot frustration is the lack of personalization or customization. Personalization is the “action of designing and producing in ways that resonate with customer preferences”.²¹ Many chatbots only provide generic, pre-scripted, or FAQ-based

responses, instead of tailored solutions to the customer's unique situation. Consumers today expect individualized experiences and context-specific assistance rather than repetitive, one-size-fits-all replies.^{22, 23} For instance, many customers expect the chatbot to know their names, gender, and other information specific to their cases. When chatbots are unable to recognize unique user needs or adapt their responses accordingly, users often feel undervalued and perceive the interaction as impersonal.

Based on our review of the latest research, we propose five best practices that can help businesses mitigate the risks of chatbot frustration.

Best Practice #1: Design Chatbots for “Active Listening”

Like human-human interactions, active listening is important in human-chatbot interactions too. Humans want to feel heard and understood regardless of whether the interaction partner is another human or a chatbot. Today's chatbot design pays little attention to the “listening” part and often provides a lot of generic, repetitive information unrelated to user inquiries.²⁴ Instead, large language models have the potential to complement rule-based systems to improve the “listening” abilities of chatbots.²⁵ Another tip that chatbots can learn from human-human interactions is to repeat back what it interprets as the user request for confirmation or clarification, before responding to the request.

Best Practice #2: Set Customers' Expectations of Chatbot Abilities

Chatbots' abilities can vary greatly depending on the technologies used to power a chatbot, from simple rule-based systems to the latest Large Language Models. Features that humanize chatbots tend to increase human expectations of chatbots' capabilities. In other words, if you look like a human, then you should behave like a human. Setting clear expectations are crucial in all social interactions, particularly in customer interactions with chatbots. Several sources of chatbot frustration are related to discrepancies between human expectations of chatbots' abilities and chatbots' actual abilities, e.g., inability to solve complex problems. A simple way of setting up clear expectations is for the chatbot to

have a proper self-introduction about not only the type of issues it is capable to help with, e.g., retrieving information without judgments as well as the types of issues that it isn't designed to help with.

Best Practice #3: A Seamless Handover Protocol to Human Agents

Chatbot designs should balance efficiency and cost savings with customer experience. Chatbots should function as a front-line partner with human agents, instead of a barrier that keeps customers from reaching a human agent. When it becomes evident that the chatbot can't help a customer with a request, it should gracefully withdraw and hand over the customer to a human agent, e.g., *"Sorry, I can't help with this issue. Let me connect you to someone who can help."* A seamless handover protocol requires identifying situations that warrant human handover,^{26, 27} e.g., complex problems beyond the chatbots' functionalities or authorities, emotionally charged interactions like customer complaints, or ambiguous issues that require contextual knowledge and human judgments. A seamless handover to human agents, or similar offerings earlier in the process, can help reduce the likelihood of customer aggression toward the business.

Best Practice #4: Be Like Human But Not Pretend to Be Human

Customers want chatbots to be human-like such as natural conversation flows, politeness, empathy, respect, or even humor. But customers get annoyed or offended when the chatbot tries to pretend to be human or become too human-like.^{28,29} So chatbot should always clearly identify themselves as AI agents. The effectiveness of human-like design may depend on the context of the interaction. In certain time-sensitive situations, customers may prefer a straightforward "AI-like" answer without much humanization.³⁰ In situations that require lengthy exchanges and problem-solving, a human-like interaction style may be more appreciated. The risk of chatbot being too human-like is that the human-like attributes can set up wrong expectations about the chatbot's abilities, and when the chatbot violates the expectations, customers get very frustrated.³¹

Best practice #5: Streamlined Personalization

For both chatbot and human agents, it is crucial for them to know customers' background and history to be able to efficiently and effectively help the customers. Customers get frustrated when they are asked to repeat the same information multiple times to different agents, whether the agent was a human or a chatbot. This is particularly important in a handover from a chatbot to a human. A recap of the exchanges between the chatbot and the customer, e.g., transcripts, verified identity, or customer request, should be shared with the human agent, who can then continue the problem-solving process instead of starting all over again.

There are notable age and gender differences in both attitudes toward chatbots and user preferences of chatbot attributes. For example, Gen Z and millennial are generally more open to interacting with chatbots.³² Younger generations tend to prioritize efficiency and problem solving whereas older generations prefer emotionally supportive and empathic conversational style. These differences can be considered to personalize chatbot designs.

The Promise of “LLMs + RAG”

We would like to conclude with some recommendations about the AI technologies that power chatbots. Many current chatbots still rely on rule-based or retrieval-based designs, which follow predetermined conversation flows and depend on rigid, scripted responses. Their “understanding” of user requests depends primarily upon keyword matching and pre-defined logic rules, not true understanding of human languages. Such systems are effective at handling simple, routine inquiries yet lack flexibility and contextual awareness to handle complex requests.

In contrast, generative chatbots (e.g., large language model-based systems) and retrieval-augmented generation (RAG) models exhibit more natural, adaptive, and semantically rich understanding. Powered by advanced natural language processing (NLP), these models demonstrate improved semantic understanding and information extraction, enabling more flexible and contextually appropriate responses, particularly for open-ended or variably phrased questions from the consumer side.

Large Language Models (LLMs) are a type of GAI algorithms trained on massive datasets to generate human-like text. Retrieval-Augmented Generation (RAG) is a method to enhance LLMs by adding a retrieval step, i.e., fetching relevant information from external databases, and combining the information with the original user prompt to create an “augmented prompt” for generation. Doing so helps reduce hallucinations from LLMs and increase the chance of providing contextually relevant responses.

The LLMs + RAG approach has several benefits and the potential to address several of the sources of chatbot frustration. The external databases can include transaction histories, product catalogs, support documents, company policies, and other external sources. Searching these databases provides up-to-date, contextual, and user-specific information to help AI agents better “understand” customer requests, personalize the experience, improve the relevance of answers, and possibly solve the problem. Consequently, RAG has become a popular way to create LLM-powered chatbots in enterprise settings. Many companies such as Amazon, DoorDash, LinkedIn, and Thomson Reuters have shared their RAG-based solutions for internal employee-facing and external customer-facing support.³³

To summarize, chatbot frustration is a real challenge that affects individual consumers, businesses, and society. By identifying the common sources and best practices, we hope to help alleviate the negative effects so that businesses can truly harvest the benefits of using AI to augment customer support. We are cautiously optimistic about the capabilities of chatbots powered by LLMs and RAG.

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