

# Assessing the Viability and Effectiveness of Chatgpt Applications in the Customer Service Industry: A Study on Business Models and User Experience

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**Abstract.** This study assesses the viability and effectiveness of integrating ChatGPT, an AI language model, in the customer service industry. Customer satisfaction and overall experience improvement are critical in defining the extent of business success. The study examines different trends and future research opportunities, showcasing the applicability of ChatGPT in hospitality, information technology, and global retailing industries. It also highlights the potential effectiveness of ChatGPT to revolutionize the sectors mentioned above and boost customer trust for sustainable development. Moreover, the research assesses the extent of ChatGPT usage in the organizational department by uncovering factors influencing its adoption using surveys. The research concludes that ChatGPT's integration in customer service operations offers improved response time, cost-effectiveness, and scalability, allowing the business to reach a global audience. By embracing ChatGPT and its potential, organizations can develop seamless and customer-centric support experiences, gaining a competitive edge over other organizations, especially in the 21<sup>st</sup> dynamic market.

**Keywords:** ChatGPT; Customer Service; User Experience; Effectiveness.

## 1. Introduction

### 1.1. Research Background

Shahsavari and Choudhury argued that the advent of information technology has promoted significant innovations and advancements in various industries such as hospitality, automobile, manufacturing, and energy, revolutionizing the business perception and how customers interact with such businesses. Among the massively innovative artificial intelligent technology released in the past decade, ChatGPT (generative pre-trained transformer) has emerged as an exceptional language model that can process information and generate accurate text that resembles human thinking [1]. With the consistently increased demand for improved customer experience and interactions, organizations are seeking alternative ways of aligning their systems and processes with ChatGPT to remodel customer integrations, offer maximum assistance for customer service, and resolve critical issues in the industry.

The customer service industry tremendously depends on effective communication and proactive solutions to customer challenges and concerns [2]. Customer satisfaction and overall experience are critical factors defining a particular business's growth and success [3]. For this reason, business managers need to explore and evaluate the viability and effectiveness of ChatGPT in the industry aiming to foster positive outcomes and enhance the user experience for sustainable development.

### 1.2. Research Status

Customer satisfaction and overall experience play a role, in determining the success of a business. This study aims to explore how ChatGPT, an AI tool can be utilized by organizations to enhance customer interactions, resolve issues and provide assistance. Additionally, it examines the potential of ChatGPT to improve customer service operations and user experience ultimately driving outcomes for companies.

Yang and other authors investigated how the strengths and weaknesses of ChatGPT can affect user experiences in terms of providing accurate responses. The study emphasizes the importance of transparency, explainability and human oversight in AI systems to ensure an improved user

experience. Furthermore, it offers recommendations for enhancements to AI language models that can further enhance user satisfaction and trust.

Moreover, another article by Gursoy and other authors provides an analysis of the current trends and potential future research opportunities, for implementing ChatGPT, an AI language model within the hospitality and tourism sectors. The research explores the developments and practical uses of ChatGPT, in fields like customer service personalized advice and virtual assistants. It emphasizes the significance of overcoming challenges and harnessing the benefits of ChatGPT, in this sector. The essay also highlights areas for research.

Javaid and other authors explore the increasing use of ChatGPT, a language model in the healthcare sector. It discusses how ChatGPT is being leveraged to enhance aspects of healthcare including assisting with diagnoses providing advice and improving telemedicine interactions. The article emphasizes the potential for ChatGPT to revolutionize healthcare delivery and encourages exploration and advancements in this field.

Choudhury and Shamszare conducted research focusing on understanding the relationship between user trust and the adoption of ChatGPT, an AI language model. By analyzing survey data, the study aims to uncover the factors that influence user trust in this technology such as transparency, reliability and explainability. The findings highlight how user trust impacts the extent to which ChatGPT is embraced and utilized. The article underscores the importance of building trust in AI systems to facilitate their usage.

Additionally, Panda and Kaur explore the feasibility of using ChatGPT, an AI language model as a substitute for chatbot systems, in libraries and information centers. In this study the researchers explore how well ChatGPT performs in terms of effectiveness, user experience and its limitations in this situation. Their findings shed light on whether ChatGPT could be an option, for delivering personalized services, in similar scenarios. Sudirjo and other authors focuses on ChatGPT as an artificial intelligence language model, and how it assists travelers in making better judgments and searching for information. They examined how ChatGPT assists travelers in finding relevant information, receiving personalized recommendations, and making decisions regarding trip locations, housing, and activities. The article highlights ChatGPT's potential to improve the overall travel experience by providing useful and personalized information to meet the needs of unique travelers.

Blease and other authors emphasize the significance of maintaining standards and using these technologies appropriately while also discussing the advantages and challenges associated with integrating AI into facial plastic surgery. They thoroughly examine how artificial intelligence (AI) can be utilized in the field of plastic surgery. It delves into applications of AI, such as analysis, surgical planning, prediction of outcomes and virtual simulations. The paper also addresses the concerns that arise with the use of AI including patient privacy protection, reduction of bias and the importance of supervision.

In 2023, Sakai conducted research that focused on exploring ChatGPT, an AI language model as a tool for personalized English language training specifically tailored for Japanese students. The study assesses how effective ChatGPT is as a resource and its ability to cater to the needs of Japanese learners who aim to improve their English proficiency. Additionally, it evaluates the practicality and performance of ChatGPT in delivering language education.

Furthermore, in their study, Kumar and other authors introduce CrunchGPT as a framework that combines ChatGPT, with scientific machine learning methodologies. ChatGPT has the potential to support researchers in their endeavors to comprehend interpret and gain insights, from information. refining machine learning models for scientific purposes. The framework aims to enhance collaboration and knowledge sharing between domain experts and AI models, enabling more effective and efficient scientific machine learning processes.

Cascella and other authors conducted research aiming to explore the feasibility of utilizing ChatGPT, which's an AI based language model within the healthcare domain. The study assesses how ChatGPT performs in healthcare contexts to determine its effectiveness and value in enhancing

healthcare results fostering communication and advancing medical research. The essay delves into both the advantages and disadvantages of implementing ChatGPT, in healthcare environments.

### 1.3. Objectives

The research topic aims to analyze the viability and effectiveness of ChatGPT applications in the customer service industry and as a comprehensive significance for different reasons, including its representation of technological advancements such as AI language models [4]. Such models can transform potential business industries and organizational decision-making to enhance customer interactions [5]. Understanding its viability and effectiveness in customer service operations can open different roots for adopting cutting-edge technologies to promote sustainable customer experience and improve business-customer interactions.

Moreover, the topic is significant in elaborating on ChatGPT's impact on customer interactions. With the AI's ability to offer accurate and elaborate responses, its integration into customer service operations and processes can comprehensively influence user interactions [3]. Evaluating the performance of ChatGPT in resolving customer changes and concerns can result in improved customer loyalty [6,7]. Furthermore, the successful alignment of ChatGPT in customer service operations demands a well-designed business model with elaborate principles [8]. Exploring different business models and their feasibility in ChatGPT integration into the existing customer service frameworks is essential for improved organizational decision-making.

The research will be informed by current studies examining the influence of ChatGPT, an AI language model, on user experience, highlighting the essentiality, transparency, and human oversight required to align current technological models for positive user experiences successfully [7]. To add to this, the study will draw insights from the hospitality and tourism industry, focusing on the practical application of ChatGPT in virtual assistance and customer service.

By including insights from existing research, the study aims to delve deeper into the particular framework and context of the customer service industry [4]. It seeks to analyze how ChatGPT's strengths and weaknesses influence user interactions and elaborate on transparency and reliability in developing user loyalty in AI drive customer service systems.

In general, this research background sets the stage for assessing the potential of ChatGPT in the customer service industry. By elaborating on its viability and effectiveness in fostering user experiences and assessing various business models, the study aims to offer valuable insights to business and academic communities [9]. This will inform the future optimization and adoption of ChatGPT in customer service sectors.

The research aims to examine the feasibility and effectiveness of ChatGPT in enhancing information retrieval in libraries and information centers. Additionally, the research will assess how ChatGPT's strengths and weaknesses influence user interactions and the overall user experience, offer accurate responses, and resolve customer issues. Finally, the research also aims to investigate the efficacy of ChatGPT for personalized English language learning.

## 2. ChatGPT features overview

As an advanced language model developed by OpenAI, ChatGPT has taken center stage to become one of the cutting-edge AI systems with significant attention for its capability to analyze and generate texts with a human touch. ChatGPT is powered by the Transformer architecture and built using a vast amount of pre-trained data, allowing it to comprehend and generate natural language in different contexts [8]. With its impressive capabilities, ChatGPT offers different key features, making it a powerful and versatile tool in various applications.

### 2.1. Natural language generation

ChatGPT can generate natural language allowing it to produce a human-like text that is appropriate and fluent [10]. With elaborate and enough data, the model can create text in various tones and styles,

making it versatile for its applicability in different applications and industries [7]. Whether writing emails, composing articles, or offering customer support, the cutting-edge model can adapt its language output to a desirable level according to the user's requirements and the perceived audience.

## **2.2. Language understanding and contextual generation**

Another primary feature of the advanced AI tool is its advanced language understanding and contextual composition [4]. Through pre-training on various large-scale datasets, ChatGPT has learned the alterations in language, enabling it to grasp different meanings of the included texts and generate elaborate and contextual responses relevant to the users and their audiences [3]. This critical feature allows ChatGPT to engage in meaningful conversations with users, disseminating accurate information and addressing the challenges at sophisticated levels that differentiate it from traditional chatbot systems [11].

## **2.3. Context retention**

Unlike traditional chatbots that lack context retention capability among user queries, ChatGPT excels in maintaining the context input by users over extended conversations, generating accurate information [12]. Its contextual memory feature allows ChatGPT to understand follow-up queries and references in an earlier conversation, resulting in more coherent and meaningful interactions [8]. This feature also significantly enhances the user experience leading to more natural and engaging conversations with the AI language model.

## **2.4. Multilingual support**

Different from other AI models, ChatGPT boasts its support for different languages and generates text in various languages according to user preferences. This feature allows individuals in countries such as China, Japan, the US, the UK, and Australia to interact with the systems and get appropriate results for their liking [7]. Despite English being the most used and conversant language globally, a wide range of customers speak Chinese, Mandarin, Cantonese, Japanese, and Arabic, to mention a few. They need pre-generated text services, the same as English speakers [12]. For this reason, ChatGPT offers them a multilingual option to enhance usability in a global context and allow effective communication with users from various linguistic backgrounds [3]. Even the minority languages such as Swahili have been integrated into the system, opening different opportunities for cross-border communication and collaboration.

## **2.5. Responsible AI and human oversight**

OpenAI has emphasized the essentiality of responsible AI development and human oversight in the models integrated into ChatGPT. Users and developers can mitigate potential errors, biases, and harmful content generation from this approach. By allowing users to develop and elaborate their feedback on problematic concepts, or topics, ChatGPT consistently tries to remove its safety and accuracy. This feature elaborates OpenAI's commitment to building an AI system that aligns with ethical principles and user safety.

## **2.6. Assistance in learning education**

ChatGPT proficiency in different language proficiency extends to various educational applications, where it is applied to assist in understanding and learning various subjects. Through large data integration and continuous training, the system is capable of offering reasonable explanations, answering user questions, and offering personalized tutoring to a wide range of individuals. Because of this, educators and learners consider ChatGPT a potentially powerful tool for consistent learning, especially for challenging topics and syllabuses.

## **2.7. Creative and informative responses**

Beyond just offering factual and innovative information, ChatGPT has demonstrated the ability to generate creative and informative responses supported by various data [2]. This feature has resulted in its use in creative writing, idea generation, and brainstorming sessions. Users can ask open-ended questions through the multilingual prompt, and the system will produce imaginative and original content [8]. For this reason, ChatGPT is considered an invaluable resource for writers and content creators.

In summary, ChatGPT features offer a glimpse into the vast potential of artificial intelligence language and software in transforming how individuals interact with technology, businesses, and each other [7]. Its natural language understanding and generation capabilities, supported by adaptability, flexibility, and customizability, boost its versatility and application in diverse scenarios [13]. From creative writing and education to customer service, ChatGPT showcases the power of AI in enhancing user experiences and improving various aspects of human welfare.

## **3. Changes that will occur in the landing scene**

In the context of the research topic, it is essential to clarify that the landing scene is used metaphorically rather than the physical event of the landing [10]. In this context, the landing scene refers to the application and implementation of ChatGPT in the customer service industry. The following changes will occur [3].

### **3.1. Integration of ChatGPT in customer service operations**

Organizations will integrate ChatGPT into their customer service operations to enhance their interaction with customers and other stakeholders [14]. Such businesses will align their operations with ChatGPT into mobile applications, websites, and other internal or external communication channels to offer instant support and assistance [7]. The integration process will enable generations of responses faster, allowing organizations to offer round-the-clock customer support [15]. Customers can then access assistance anytime, discarding waiting time and improving customer service. However, ChatGPT can handle multiple customer interactions simultaneously, enabling organizations to scale their operations and record increased customer loyalty [12]. The multilingual option enables organizations to provide customer support in various languages, even those with limited numbers or recognition. This operation caters to a diverse range of customer base, boosting business scalability.

### **3.2. Improve response time and availability.**

Businesses integrating ChatGPT in systems and processes will significantly improve customer responses due to its ability to process and generate content faster [13]. Customers will receive immediate assistance and answer their critical issues without waiting for human agents or visiting the physical stores. Due to this, customer satisfaction will improve. Unlike human agents who have limited time in the office and require regular breaks for improved productivity, ChatGPT operates round-the-clock [8]. The model does not require time out or washroom breaks. For this reason, businesses will have 24/7 customer support. Additionally, consistent training improves ChatGPT's characteristic of handling routine and frequent inquiries [16]. It will offer unique answers to frequently asked questions, reducing the workload on human agents and allowing timely compulsion of complex tasks.

### **3.3. Personalized customer interactions**

ChatGPT comes with a customizable language model allowing organizations to train it on certain data and domains, boosting its personalized integrations extent and customer satisfaction. Leveraging the customizability option and understanding user input offers numerous tailored responses and recommendations to individual customers [3]. The personalized approach enhances the overall

customer experience and fosters stronger connections between the organization and customers [10]. Moreover, ChatGPT boasts of retaining context during extended conversations with users. The feature allows the system to recall previous conversations with users and understand follow-up questions with references made in previous conversations [7]. Moreover, ChatGPT can provide personalized recommendations for services, products, or solutions that align with individual preferences and needs. This enhances upselling and cross-selling opportunities, fostering customer loyalty and satisfaction.

### **3.4. Expanded language support**

The expanded language support allows for easier understanding and generation of text in multiple languages, not just English or Cantonese [13]. This capability enables ChatGPT to interact closely with a global audience, cater to top customers from diverse locations and linguistic backgrounds, and facilitate communication in different languages. An expanded language support also enables ChatGPT in organizations to assist international customers without needing to include a detailed language-specific team and increase the percentage of the labor force. For instance, online retailing giant Alibaba uses ChatGPT to offer personalized product recommendations to customers [16]. The company understands customer preferences through the AI model by analyzing their past purchases and browsing history [7]. This enables the organizations to offer tailored suggestions and improve the shopping experience with enjoyable and relevant experiences.

To add to this, travel companies such as American Express employ ChatGPT to assist customers in planning their trips and selecting their desired destinations. The system analyses customer inputs like budget, travel dates, and interests, which help generate personalized travel itineraries accompanied by numerous suggestions and recommendations for species activities according to their demographics [8].

Virtual shopping companies and fashion retailers, including ZARA, has integrated ChatGPT into their processes and procedure to become virtual assistants [17]. Customers interact with the model to get styling advice, receive personalized fashion recommendations and find matching outfits [13]. These examples demonstrate the customizability and understanding of how ChatGPT enables businesses to deliver personalized customer interactions.

### **3.5. Handling routine inquiries**

ChatGPT's capability to handle repetitive and routine inquiries allows human agents to prioritize more specialized and complex tasks. The division of labor can result in more efficient recourse allocations and improved overall performance. For instance, Unilever uses customer support Chatbots integrated with ChatGPT in their mobile applications and websites. These chatbots offer accurate and quick responses to common customer queries, shipping information, product details, and return policies [10]. ChatGPT is also used to automate frequently asked questions through FAQ automation. Coca-Cola, a multinational company, trains ChatGPT on its company FAQ database, enabling the model to generate and offer valid answers instantly to customers visiting the website, saving time and effort from the human agents [19]. Furthermore, other companies like the Elite IT Consulting Group utilize ChatGPT to offer tech support assistance [7]. ChatGPT enables the human resource team to troubleshoot common technical issues, guide customers through basic steps and processes and offer appropriate solutions for common software and hardware challenges.

## **4. Business model perspective- discussion and analysis**

### **4.1. Value proposition**

The value proposition of ChatGPT in the customer service industry is to offer a more effective, personalized, and efficient customer service experience [13]. Chatbots can automate numerous tasks that are currently performed by human customer service representatives, including resolving routine issues and answering simple questions. This results in comprehensive cost savings for businesses and

improved customer satisfaction levels [16]. Moreover, the chatbots also collect data about customers and their preferences, which is applied to personalizing customer experiences. ChatGPT has the potential to offer numerous benefits to businesses in the customer service industry, including:

#### **4.1.1 Reduced costs**

Chatbots can automate numerous tasks that human customer service representatives currently offer. Aligning ChatGPT with such systems or operations encourages organizations to limit the number of staff recruitment in different departments, reducing overall expenditure that would have been used for salaries and wages [10]. Because of this, the businesses record significant cost savings annually.

#### **4.1.2 Increased customer satisfaction**

Furthermore, Chatbots integrated with ChatGPT can offer a more efficient and personalized customer service experience, increasing customer satisfaction [13]. The system records previous user data, such as frequently asked questions, their interaction with website tools, and their preferences to offer personalized communication [20].

#### **4.1.3 Improved efficiency**

Moreover, the integrated AI model can offer 24/7 customer service and all-around support to help businesses improve customer satisfaction [8]. Chatbots with enough data can also route customers to the right department representatives for further assistance, helping improve efficiency in customer interactions.

### **4.2. Customer segments**

The customer segments for ChatGPT in the customer service industry include businesses that aim to improve their customer service operations. The hospitality and real estate industries include a significant segment of such businesses [7]. For instance, The Melbourne hotel has increased its investment in information technology, especially Chatbots, by aligning them with an updated ChatGPT program to communicate with customers and offer valid responses where required [21]. This came after the 2020 covid-19 pandemic that forced an immediate shutdown of the hotel for a significant period [16]. Through ChatGPT and chatbot, The Melbourne Hotel offers efficient customer care services, increasing stakeholder loyalty.

### **4.3. Channels**

The channels for ChatGPT in the customer service industry are mobile applications and online. Chatbots are included in websites, applications, and messaging platforms for easier communication.

### **4.4. Key activities**

The primary activities for ChatGPT include collecting and analyzing customer data, enabling the system to offer personalized responses [13]. Furthermore, the system is used to develop and maintain chatbot software. ChatGPT plugins are modern and consistently updated, improving chatbots' user experience and reliability [8]. Moreover, ChatGPT routes customers to the appropriate departments and representatives for additional support [22]. This is supplemented by personalizing customer experience through consistent conversation and faster data analysis.

### **4.5. Key resources**

The key resources for ChatGPT in the customer service industry include the following:

Marketing and sales personnel are responsible for marketing the primary activities and operations. Data scientists collect and analyze consumer data which is used to train GPT into generating accurate responses for customers. Customer service representatives support ChatGPT efforts towards answering complex customer queries and increasing loyalty. Finally, software engineers are responsible for determining vulnerabilities and developing codes or strategies for risk mitigation and sustainable development.

#### 4.6. Key partnerships

The major partnerships for ChatGPT include software vendors who integrate the technological model with their developments [16]. Additionally, data providers partner with companies to offer vast customer data used to train ChatGPT in different businesses and organizations [7]. Telecommunication companies and customer service outsourcing firms also prioritize their partnerships with ChatGPT and record increased services, loyalty, and effectiveness in goods and service provision.

#### 4.7. Revenue streams

The revenue streams for ChatGPT in the customer service industry include increased commissions on sales, subscription fees from loyal and new customers, and advertising revenue.

The business model for ChatGPT, especially in the customer service industry, is still in the early stages, but it has proved to be of immense success and assistance in the past decade [13,23]. The technology is swiftly evolving but has already proven promise in improving customer satisfaction and efficiency [8]. ChatGPT will likely become essential to the customer service landscape as technology advances.

### 5. Conclusion

In summary, ChatGPT is an AI language model offering comprehensive customer service industry benefits. Its instance responses, personalized content, 24/7 availability, and interactions foster customer efficiency and satisfaction. Expanded language support offers engagement with a diverse global audience. The model can also engage with numerous global audiences in different languages. Its essentiality in handling massive inquiries and routine queries enables scalability of support and enhances human-business collaboration and limits operational costs. Nonetheless, the business must prioritize ethical considerations and develop solid user trust to maximumly realize the potential of artificial intelligence models, especially ChatGPT. Embracing the transformative technology results in improved customer experiences, stronger relationships, and a boosted competitive edge in the dynamic world characterized by consistent changes that demand increased customer service. In the ever-evolving landscape of customer services, ChatGPT holds its position as a powerful tool that promises to improve customer interactions and develop positive outcomes for local and international businesses or organizations. For this reason, organizations need to be thoughtful in implementing continuous amounts in customer services models, which will be cornerstones to realizing the optimum potential of ChatGPT.

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