[1]Kuldeep Tickoo*

[2]Dr. Pinnika Syam Yadav

[3]Dr. Pothireddy Rajashekarreddy

[4]Dr. Mithilesh Pandey

The Impact of Technology on Customer Engagement: Comparing the Chatbots and the Customer Executives

JES
Journal of Electrical Systems

Abstract: - Customer engagement plays a crucial role in building long-term relationships between businesses and their customers. In recent years, advancements in technology have led to the emergence of chatbots as a popular customer engagement tool. This research paper aims to explore the effectiveness of customer engagement strategies employed by chatbots and human customer executives. With the growing popularity of chatbots in customer service, it is essential to understand their impact on customer engagement and compare them to traditional customer executives. By examining the strengths and weaknesses of each approach, organizations can make informed decisions regarding the implementation of chatbots in their customer service operations. The paper analyzes existing literature to provide insights into the customer experience, satisfaction, and loyalty associated with chatbots and customer executives. This paper summaries the understanding of customer engagement in the context of emerging technologies.

Keywords: emerging, engagement, implementation, traditional

1. Introduction

Customer engagement refers to the interactions and connections between a customer and a business, focusing on building long-term relationships, loyalty, and satisfaction. It encompasses various activities, such as communication, support, problem-solving, and personalized experiences, to enhance the overall customer journey.

Chatbots are computer programs designed to simulate human conversation through text or voice interactions. They use artificial intelligence (AI) algorithms to understand customer inquiries, provide automated responses, and assist with various tasks. Chatbots offer several benefits in customer engagement, including:

a. 24/7 Availability: Chatbots can provide round-the-clock support, addressing customer queries and concerns at any time, leading to enhanced accessibility and convenience.

b. Swift Response Time: Chatbots are capable of responding to customer inquiries instantly, minimizing waiting time and improving customer satisfaction.

c. Scalability: Chatbots can handle multiple customer interactions simultaneously, ensuring efficient engagement even during peak hours or high-demand periods.

d. Consistency: Chatbots provide consistent responses, eliminating the risk of human error or inconsistency in customer interactions.

e. Cost-effectiveness: Implementing chatbots can be cost-effective for businesses, reducing the need for a large customer support team.

Customer executives, also known as customer service representatives or agents, are individuals employed by businesses to interact directly with customers, addressing their queries, resolving issues, and providing

[1] [1]Research Scholar, Mittal School of Business, Lovely Professional University, Phagwara Punjab, India.

[2]Assistant Professor, Mittal School of Business, Lovely Professional University, Phagwara Punjab, India.

[3]Assistant Professor, ICFAI Business School, IFHE Hyderabad, India.

[4]Assistant Professor, ICFAI Business School, IFHE Hyderabad, India.

*email: kuldeep.tickoo@siemens.com

personalized assistance. Customer executives have traditionally played a significant role in customer engagement and continue to be essential in several ways:

a. Human Connection: Customer executives provide a personal touch and human connection, which can enhance customer trust, empathy, and emotional support.

b. Complex Issue Resolution: Customer executives possess critical thinking and problem-solving skills, enabling them to handle complex and unique customer issues effectively.

c. Empathy and Emotional Intelligence: Customer executives can exhibit empathy and emotional intelligence, understanding customer emotions and adapting their responses accordingly.

d. Relationship Building: Customer executives have the potential to build long-term relationships with customers through personalized interactions, fostering loyalty and customer satisfaction.

e. Upselling and Cross-selling: Customer executives can actively engage in upselling and cross-selling activities, promoting additional products or services based on customer needs and preferences.

2. Literature Review

According to Kumar, Dwivedi & Anand, (2021) the healthcare sector has been at the forefront of the adoption of Artificial intelligence (AI) technologies, they conducted a mixed-method study to identify the constituents of responsible AI in the healthcare sector and investigate its role in value formation and market performance. Data acquisition, fairness, assessment, informed and explainable algorithm are key aspects in AI technology.

In the future, artificial intelligence is likely to substantially change both marketing strategies and customer behaviors (Davenport, et al. 2019), based on extensive interactions with practice the authors propose a multidimensional framework for understanding impact of AI involving intelligence levels, task types, and whether AI embedded in robot. In a analysis of more than 400 AI use cases, across 19 industries and 9 business functions, McKinsey & Co. indicates that the greatest potential value of AI pertains to domains related to marketing and sales (Chui et al. 2018). Marketers plan to use AI in areas like segmentation and analytics (related to marketing strategy) and messaging, personalization and predictive behaviors (linked to customer behaviors) (Columbus 2019). Artificial Intelligence (AI) has emerged as a transformative force in various industries, and the marketing sector is no exception. AI offers the potential to increase revenues and reduce costs for businesses.(Hicham et al., 2023). Revenues may increase through improved marketing decisions, such as optimized pricing, promotions, product recommendations, and enhanced customer engagement (Noranee & Othman, 2023). Simultaneously, costs may decline due to the automation of simple marketing tasks, customer services, and structured market transactions.(Noranee & Othman, 2023)(Hicham et al., 2023).

While most AI applications are virtual in nature, research suggests that customers may exhibit greater discomfort when AI is embedded in a physical robotic form (Hicham et al., 2023) Marketers must carefully navigate this dynamic, balancing the benefits of AI with the need to address consumer sentiments and concerns.

Little research has been presented to provide in-depth insight into user experience and user motivation concerning chatbots for customer service (Folstad, A., Skjuve, M. 2019). Forrester (2017) surveyed more than 7000 individual users of customer service and found that a larger proportion were satisfied with manual chat-based customer service (60%) than with customer service from what Forrester referred to as text-based virtual agents (50%). The increasing prevalence of conversational AI agents, such as virtual assistants and chatbots, has significantly transformed the way individuals interact with technology. These agents have the potential to provide efficient and personalized experiences, but their effectiveness is contingent on how users perceive them. Forrester's research has shed light on the key drivers of both positive and negative user experiences with such agents.(Adam et al., 2020).

On the positive side, the agents' efficiency and availability were considered as beneficial factors. However, users expressed concerns about the agents' perceived inability to handle complex requests (47%) and a sense of being forced to interact with a virtual agent when this was not their preferred mode of interaction (40%).(Adam et al., 2020) Nearly half of the respondents reported a desire for more human-like virtual agents, with visual presentations that evoke a personal connection.(Adam et al., 2020).

These findings align with the broader research on user experiences with chatbots. Studies have highlighted the importance of developing chatbots that provide valuable and pleasing experiences to users, in order to increase their acceptance and reliance on this technology.(Følstad & Brandtzæg, 2020) Conversely, attempts to humanize chatbots can backfire if the agent's capabilities do not meet the heightened expectations, leading to negative emotional reactions from customers (Hadi, 2019).

The authors (Huang, Rust, 2020) develop a three-stage framework for strategic marketing planning, incorporating multiple artificial intelligence (AI) benefits: mechanical AI for automating repetitive marketing functions and activities, thinking AI for processing data to arrive at decisions, and feeling AI for analyzing interactions and human emotions. The application of Artificial Intelligence (AI) in marketing has gained significant attention in recent years.(Chintalapati & Pandey, 2021)This framework outlines the various ways AI can be leveraged across different stages of the marketing process, from research and strategy to execution (Campbell et al., 2020).

At the marketing research stage, AI can be employed for data collection, analysis, and customer understanding.(Campbell et al., 2020)(Huang & Rust, 2020)Mechanical AI can automate data gathering, while thinking AI can be used for advanced market analysis.(Huang & Rust, 2020) (Noranee & Othman, 2023). Furthermore, feeling AI can enhance customer engagement and interaction.(Vlačić et al., 2021) (Campbell et al., 2020) (Hicham et al., 2023).

The academic literature on AI in marketing can be broadly categorized into four main areas: (1) technical AI algorithms for solving specific marketing problems,(Vlačić et al., 2021) (Hicham et al., 2023) (2) customers' psychological reactions to AI, (3) the effects of AI on jobs and society, and managerial and strategic issues related to AI (Vlačić et al., 2021),

Recent technological advancements have led to the incorporation of AI in various retail organizations, as it enables efficient data interpretation, learning, and application.(Hicham et al., 2023)AI in marketing channels can assist organizations in customer profiling, preference forecasting, and improving the overall consumer experience.(Hicham et al., 2023). As the role of AI in marketing continues to evolve, it is crucial for both academics and practitioners to explore the opportunities and challenges presented by this transformative technology.

For example, service robots can easily do surface acting (Wirtz et al. 2018), and "one-voice" AI can enhance customer engagement by integrating various interfaces involved in a customer's journey (Singh et al. 2020). Robots equipped with emotional intelligence are increasingly employed to enhance customer engagement and optimize their experiences. For instance, Marriott hotels use Pepper robots to welcome and interact with guests. The hospitality and travel industries, which inherently involve numerous interactions and emotional exchanges, find these emotionally responsive AI technologies particularly well-suited. Nevertheless, marketers need to be cautious, in that anthropomorphized robots are found to increase perceived warmth but decrease liking (Kim et al. 2019); thus, in the case of embodied frontline robots, marketers need to take the appearance of robots into consideration. Traditional methods for understanding customers often rely on focus groups to gather qualitative insights. However, focus groups are time-consuming, labor-intensive, and may not accurately represent the broader customer base. Marketers also study customer behavior, choices, and responses to promotions to discern preferences and underlying motivations. In contrast, data about customers' emotions, moods, and feelings can now be directly collected through interactions with AI, such as conversational bots, and analyzed using feeling analytics. This includes data from social media posts, voice recordings, and chat transcripts. These tools enable the extraction of customer insights on a larger scale and more cost-effectively. Since emotional data is personal and contextual, this approach provides deeper insights into customers' identities and preferences.

The authors (Feng, et al. 2020) provide a good insight to evolution of AI topic with corresponding research papers.
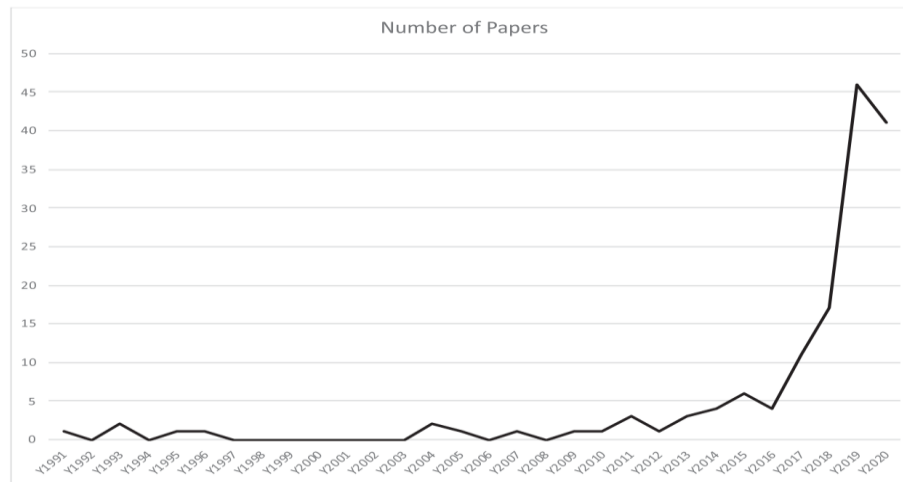
Fig. 1. Number of papers on AI in marketing (1991–2020).

Sheehan & et al. (2020) investigated the relationship between miscommunication and adoption for customer service chatbots. Anthropomorphism is examined as a factor influencing the relationship between chatbot performance and user adoption. Two experiments compare how perceived human-likeness and adoption intentions differ for three types of chatbots: (a) a chatbot that makes no errors, (b) a chatbot that asks for clarification on consumer input, (c) a chatbot that fails to understand the context.

The findings indicate that unresolved errors significantly diminish both anthropomorphism and the intent to adopt. However, there is no noticeable difference in perception between a flawless chatbot and one that seeks clarification. The ability to resolve misunderstandings by asking for clarification is as effective as preventing errors entirely. Additionally, the more a consumer desires human interaction, the stronger the link between anthropomorphism and adoption. Thus, chatbots that exhibit human-like qualities may better fulfill the social needs of consumers who crave interaction.

Vishnoi & et al. (2018) stated customer are becoming more demanding in terms of convenience, quality, product features and value for money as defining variables of their loyalty quotients. In today's digital age, loyalty extends beyond merely embedding your products in customers' minds; it involves resonating deeply with their hearts and souls. Within a product ecosystem brimming with countless brand options, consumers can easily be captivated by alternative brands, evolving lifestyles, and shifting trends. Marketers now have numerous critical touchpoints to influence customer purchasing behaviors, thanks to technological advancements and an abundance of data on consumer behavior, purchasing cycles, target attributes, technology and product preferences, payment methods, consumption habits, preferred digital platforms, and delivery preferences. These extensive data sets can be transformed into valuable insights for decision-making through analysis with AI-powered tools.

Klaus & Zaichknowskly, (2021) describes how AI has changed the way consumers make decisions and propose how that change impacts services marketing, service research and service management. Three primary reasons explain why consumers prefer using bots for their shopping: the convenience and ease provided by voice interaction, the sense of control they feel when using voice commands, and the positive emotional experience associated with voice-based shopping.

Not only do consumers value convenience but also spending money on time-saving services increases their happiness (Whillans et al., 2017). Researchers have established that people benefit from buying their way into a pleasant experience (Carbone and Haeckel, 1994). Consumers also prefer to use services that allow them to avoid bad experiences (Klaus and Edvardsson, 2017). This mirrors customer experience research that highlights the importance of designing and inventing mechanisms for avoiding bad customer experiences rather than to delight customers (Ponsignon et al., 2015). In a recent field test of consumer acceptance of smart speakers, it was found enjoyment leads to use of the speaker and the ease of processing information (Kowalczok, 2018). From a marketing standpoint, firms are advised to prioritize enhancing the enjoyable aspects of their offerings while minimizing concerns about security and privacy risks.

Feine & et al. (2019) investigated whether sentiment scores from textual input can be used as a proxy to measure chatbot service encounter satisfaction (CSES) in a customer-chatbot interaction. They employed a three-step research methodology: initially, they evaluated five sentiment analysis techniques by examining the relationship between sentiment scores across two dialog corpora. Next, they assessed the correlation between these sentiment scores and Customer Service Experience Scores (CSES). Finally, they conducted a detailed analysis of this correlation at the utterance level. The findings from the first step indicated a significant positive correlation among sentiment scores across all selected sentiment analysis methods. In the second step, they found that the sentiment scores of entire dialogs significantly correlated with the subjectively measured CSES values. The third step revealed that this correlation held true not only for the analysis of the whole dialog but also for sequences of at least three consecutive utterances within the dialog. Consequently, they concluded that sentiment scores could serve as an automatic and objective measure for evaluating CSES in online service interactions.

Kim et al. (2012) conducted an empirical study to explore whether users consciously (mindfully) or subconsciously (mindlessly) perceive computers as human-like entities. They manipulated two variables— the presence or absence of a human-like agent and low or high interactivity—on a health-related website. The aim was to investigate whether these elements functioned as anthropomorphic cues that led to either mindful attributions of human characteristics to the website or mindless evaluations of the site in human terms. The study provided evidence supporting the concept of mindless anthropomorphism, highlighting its implications for users' perceptions of the credibility of the information presented on the site.

The success of integrating AI into business and customers critically depends on workers trust in AI technology (Glikson et al., 2020). The transparency, reliability and anthropomorphism plays a role in trusty (both cognitive and emotional). Trust is a dynamic concept that is prone to changes based on the behavior of the trusted agent (Crisp & Jarvenpaa, 2013; Schoorman, Mayer, & Davis, 2007). Hoff and Bashir (2015) posited that the way trust in technology unfolds differs from the way it develops in humans, due to the common positivity bias toward new technologies (Parasuraman & Manzey, 2010). In contrast to the low trust that exists initially between unfamiliar humans, new technologies may produce unrealistically optimistic beliefs regarding their abilities and functionality (Dzindolet et al., 2003). Thus, while trust in humans generally increases with time through frequent interactions, the trust in technology decreases with time, based on encounters with errors and malfunctions (Madhavan & Wiegmann, 2007).

Swaminathan & et al. (2019) studied that business factors, such as credibility, e-satisfaction and site knowledge, and customer factors, such as inertia, innovativeness, and aggressiveness, influence e-loyalty. Our analysis indicates that the credibility of a business is influenced by the reputation of the e-commerce platform and its alignment with the customer's self-image. Customer satisfaction in the online context is determined by their perception of value, the care they receive, and the variety of choices available. Knowledge of the website is influenced by the customer's prior experience, level of involvement, and expertise. Business-related factors explain about 75% of the variance in e-loyalty, while customer-related factors account for the remaining 25%. Understanding both the controllable business factors and the uncontrollable customer factors that drive customer loyalty allows e-commerce retailers to regularly evaluate these elements and adjust their marketing strategies accordingly. In this study, e-satisfaction is defined as the customer's contentment with their past purchasing experience with an e-commerce firm. A dissatisfied customer is more likely to seek out information on alternative options and is more susceptible to competitors' offers compared to a satisfied customer. Also, a dissatisfied customer is more likely to resist attempts by his or her current retailer to develop a closer relationship and more prone to take steps to reduce dependence on that vendor (Anderson & Srinivasan, 2003). Often, a dissatisfied customer may seek to redefine their relationship with a business. The level of satisfaction is crucial in determining loyalty. Customer outcomes are influenced by both 'business factors' and 'customer factors.' Shopping behavior can be partly attributed to the consistent behavioral patterns consumers follow in the marketplace. One significant customer factor affecting loyalty is inertia. According to Campbell (1997, p. 2), inertia is 'a condition where repeat purchases occur due to situational cues rather than a strong commitment to the partner.' Many customers continue to buy from the same store out of habit. Likewise, numerous online shoppers frequently return to the e-commerce websites they have bookmarked previously.

Dabholkar & et al. (2012) studied that greater consumer participation in using an recommendation agents (RAs) leads to more satisfaction, greater trust, and higher purchase intentions, related to the RA and its recommendations.

Conversely, the financial risk linked to the product diminishes satisfaction, trust, and purchase intentions, while also influencing the impact of consumer engagement on these factors. These findings contribute to existing literature and propose practical implications for marketing strategies.

Brandtzaeg & et al. (2017) through an online questionnaire asked chatbot users (N = 146, aged 16–55 years) from the US to report their reasons for using chatbots. The research identifies primary motivational factors that encourage the use of chatbots. The most commonly cited motivation is 'productivity,' as chatbots assist users in efficiently obtaining timely information or assistance. Other motivations reported by chatbot users include entertainment, social interaction, relationship-building, and curiosity about this emerging technology. These findings are discussed within the framework of the uses and gratifications theory, offering insights into the reasons individuals opt to engage with automated agents online.

Rese et al. (2020) compared the widely recognized Technology Acceptance Model (TAM) with the less familiar Uses and Gratifications (U&G) theory, employing both frameworks to assess the acceptance of the text-based chatbot named "Emma" among its target audience. Developed for the pre-purchase phase of online fashion retailing, "Emma" was integrated into Facebook Messenger by the major German online retailer Zalando. Data from a usability study involving 205 German Millennials were analyzed. The findings indicate that utilitarian factors such as 'authenticity of conversation' and 'perceived usefulness,' along with hedonic factors like 'perceived enjoyment,' positively influence the acceptance of "Emma." However, concerns regarding privacy and the technology's immaturity negatively impacted usage intentions and frequency. Both models demonstrated similar predictive power with minimal deviation, yet the U&G theory provided alternative insights into customers' motivations for using "Emma" compared to the TAM.

Hill et al. (2015) examined how communication patterns differ between interactions with intelligent agents versus human counterparts. They conducted a comparative analysis of 100 instant messaging exchanges between individuals and 100 interactions with the popular chatbot Cleverbot across seven dimensions: words per message, words per conversation, messages per conversation, word diversity, and the use of profanity, shorthand, and emoticons. A MANOVA revealed that interactions with the chatbot tended to last longer but involved shorter messages compared to human-to-human conversations. Moreover, conversations with the chatbot exhibited less linguistic richness typically found in human-to-human interactions and showed a higher incidence of profanity. These findings indicate that while human language skills are adaptable to interactions with chatbots, significant differences exist in the content and quality of such interactions.
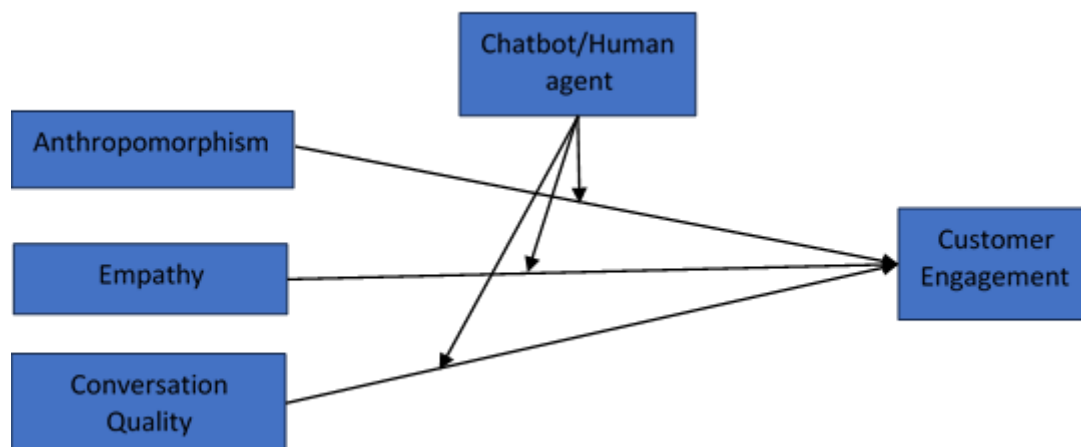

Fig 1: Conceptual Model

Based on the previous literature review, the conceptual model (Fig 1) proposes that several key factors influence customer engagement in interactions with both chatbots and human agents.

Firstly, anthropomorphism—the extent to which the chatbot or human agent is perceived as human-like—plays a significant role. Customers may engage more deeply when they perceive a chatbot or human agent as having human characteristics, impacting their overall interaction satisfaction.

Secondly, empathy exhibited by both chatbots and human agents is crucial. Empathetic responses, whether from a chatbot displaying programmed empathy or a human agent naturally expressing empathy, contribute positively to customer engagement. This factor influences how customers perceive the interaction and their satisfaction with the service received.

Lastly, conversation quality, encompassing factors such as clarity, relevance, and effectiveness of communication, strongly affects customer engagement. Both chatbots and human agents contribute to conversation quality through their ability to maintain coherent and meaningful interactions. High conversation quality enhances customer satisfaction and promotes continued engagement.

Overall, this conceptual model highlights the importance of anthropomorphism, empathy, and conversation quality in shaping customer engagement with both chatbots and human agents. Understanding and optimizing these factors can lead to improved customer experiences and better outcomes for businesses employing these interaction technologies.

3. **Summary and Conclusions:**

Multiple studies have compared customer engagement through chatbots and customer executives, examining various dimensions of effectiveness and customer satisfaction. These studies have found the following insights:

a. Response Time: Chatbots generally provide quicker responses compared to customer executives, reducing customer waiting time and improving overall engagement efficiency.

b. Accuracy: While chatbots can provide accurate and consistent responses for routine queries, customer executives tend to outperform chatbots in handling complex or unique customer issues that require human judgment and expertise.

c. Personalization: Customer executives excel in providing personalized experiences, tailoring interactions based on individual customer preferences, emotions, and historical data. Chatbots, although capable of limited personalization, may lack the human touch in understanding nuanced customer needs.

d. Emotional Intelligence: Customer executives have an advantage in demonstrating emotional intelligence, understanding customer emotions, and providing empathetic support during challenging situations. Chatbots are limited in their ability to perceive and respond to complex emotions effectively.

e. Overall Customer Satisfaction: Studies have shown mixed results regarding overall customer satisfaction. While some customers prefer the convenience and efficiency of chatbots, others value the human interaction and personalization offered by customer executives.

In conclusion, both chatbots and customer executives play important roles in customer engagement. Chatbots excel in providing swift responses, scalability, and cost-effectiveness, while customer executives offer personalized experiences.

However, from the literature review it is observed that the existing studies provides the insight to chatbot usage in services and also in limited approach the perceived benefits of users in small settings.

Further, a very few comparative studies done for chatbots in controlled small group as pilots like in colleges and in test environments. Limited studies with less than few hundred samples are conducted that too with limited outcome in specific area and not extended to customer engagement.

Further it was also observed that study on chatbot in Indian context have not been extensively researched in different domains, there are few references of chatbots in banking and aviation sector but limited to very few customer groups. With increasing digitalization, and growth of e-commerce in India, the comparative study on chatbot and customer executive can be a potential topic for researchers.

4. Implications for Industry

The rising impact of technology in the form of chatbots for customer engagement and the existing knowledge and expertise of the human agents have a combined effect on the industry for engaging the customers in a highly efficient manner.

1. **Enhanced Efficiency Through Chatbots**: Industries can leverage chatbots to improve response times significantly, thereby reducing customer waiting periods and enhancing overall engagement efficiency. This efficiency is particularly beneficial in sectors where quick customer service is critical, such as retail, telecommunications, and online services.

2. **Optimal Use of Human Expertise**: While chatbots excel in routine queries, industries should recognize that human customer executives remain essential for handling complex or unique customer issues that require empathy, judgment, and specialized knowledge. This suggests that a hybrid approach, integrating both chatbots and human agents effectively, could optimize customer service outcomes.

3. **Personalization and Emotional Engagement**: Industries should balance the benefits of chatbot efficiency with the value of human-driven personalization and emotional intelligence. Human customer executives are adept at providing personalized experiences tailored to individual customer preferences and emotions, which can significantly impact customer satisfaction and loyalty.

4. **Mixed Customer Satisfaction Insights**: Recognizing that customer preferences vary, industries should consider offering options that cater to diverse customer needs. Some customers value the convenience and speed of chatbots, while others prefer the empathy and personalized service provided by human agents. This diversity highlights the importance of providing a choice or seamlessly integrating both service modes to enhance overall customer satisfaction.

5. **Research and Development Opportunities**: The literature review suggests a gap in extensive research on chatbots in specific contexts, such as the Indian market and various industry domains beyond banking and aviation. There is potential for researchers and industry practitioners to conduct more comparative studies to understand how chatbots can be effectively implemented and optimized across different sectors in India, especially with the increasing digitalization and growth of e-commerce.

6. **Pilot Studies and Controlled Environments**: Industry stakeholders can benefit from conducting pilot studies and experiments in controlled environments (such as colleges or specific test settings) to gather insights into the performance and acceptance of chatbots. These studies could provide valuable data on how chatbots can be tailored to meet specific industry needs and customer expectations.

7. **Future Directions in Research**: There is a clear opportunity for researchers to explore the comparative advantages of chatbots versus human agents in more depth, particularly in nuanced customer engagement scenarios and across diverse industry verticals in India. This could lead to innovative strategies for improving customer service quality, operational efficiency, and overall business performance.

In summary, industries can capitalize on the efficiency gains offered by chatbots while recognizing the irreplaceable value of human agents in delivering personalized and emotionally intelligent customer experiences. The insights from existing studies underscore the importance of informed decision-making and strategic integration of technology and human resources to optimize customer engagement strategies

References

[1] Adam, M., Wessel, M., Benlian, A., (2020). AI-based chatbots in customer service and their effects on user compliance. *Electronic Markets*, 31, 427–445. https://doi.org/10.1007/s12525-020-00414-7

[2] Agrawal, A., Gans, J.S., Goldfarb. (2017). What to expect from Artificial Intelligence. *MIT Sloan Management Review*. http://mitsmr.com/2jZdf1Y

[3] Agrawal, A., Gans, J., Goldfarb, A. (2017). What How AI will change the way we make decisions. *Harvard Business Review*, July 26.

[4] Akhtar, M.I. (2016). Research Design. https://dx.doi.org/10.2139/ssrn.2862445 or https://ssrn.com/abstract=2862445

[5] Ameen, N., Tarhini, Ali., Reppel, A., Anand, A. (2021). Customer experiences in the age of artificial intelligence. *Computers in Human Behavior*, Vol. 114, 106548. https://dx.doi.org/10.1016/j.chb.2020.106548

[6] Antonio, V. (2018). How AI is changing Sales. *Harvard Business Review*, July 30.

[7] Araujo, T. (2018). Living up to the chatbot hype: The influence of anthropomorphic design cues and communicative agency framing on conversational agent and company perceptions. *Computers in Human Behavior*, 85, 183–189.

[8] Balakrishnan, J., & Dwivedi, Y. K. (2021). Conversational commerce: Entering the next stage of AI-powered digital assistants. *Annals of Operations Research*, 1–35.

[9] https://doi.org/10.1007/s10479-021-04049-5.

[10] Balakrishnan, J., Dwivedi, Y. K., Hughes, L., Boy, F. (2021). Enablers and Inhibitors of AI-Powered Voice Assistants: A Dual-Factor Approach by Integrating the Status Quo Bias and Technology Acceptance Model. *Information Systems Frontiers*. https://doi.org/10.1007/s10796-021-10203-y

[11] Bartneck, C., Kuli´c, D., Croft, E., Zoghbi, S. (2009). Measurement instruments for the

[12] anthropomorphism, animacy, likeability, perceived intelligence, and perceived

[13] safety of robots. *International Journal of Social Robotics*, 1(1), 71–81. https://doi.org/10.1007/s12369-008-0001-3

[14] Belanche, D., Casalo, L. V., Flavi´an, C., Schepers, J. (2020). Service robot

[15] implementation: A theoretical framework and research agenda. *The Service Industries*

[16] *Journal*, 40(3–4), 203–225. DOI: 10.1080/02642069.2019.1672666

[17] Bock, D.E., Wolter, J.S., Ferrell, O.C. (2020). Artificial intelligence: disrupting what we know about services. *Journal of Services Marketing*, 34/3, pages 317-334.

[18] Borau, S., Otterbring, T., Laporte, S. (2021). The most human bot: Female gendering increases humanness perceptions of bots and acceptance of AI. *Psychology and Marketing*. DOI: 10.1002/mar.21480

[19] Borsci, S., Malizia, A., Schmettow, M. *et al.* (2022). The Chatbot Usability Scale: the Design and Pilot of a Usability Scale for Interaction with AI-Based Conversational Agents. *Personal and Ubiquitous Comput,* 26, 95–119.

[20] https://doi.org/10.1007/s00779-021-01582-9

[21] Brandtzaeg, P, B., Folstad, A. (2017). Why People Use Chatbots. In: Kompatsiaris I. et al. (eds) Internet Science. INSCI 2017. Lecture Notes in Computer Science, vol 10673. Springer, Cham. https://doi.org/10.1007/978-3-319-70284-1_30

[22] Bruyn, A.D., Viswanathan, V., Beh, Y.S., Brock, J.K.U., Wangenheim, F. V. (2020). Artificial Intelligence and Marketing: Pitfalls and Opportunities. *Journal of Interactive Marketing,* 51, pages 91-105. https://doi.org/10.1016/j.intmar.2020.04.007

[23] Chung, M., Ko, E., Joung, H., Kim, S.J. (2020). Chatbot e-service and customer satisfaction regarding luxury brands. *Journal of Business Research,* 117, pages 587-595.

[24] https://doi.org/10.1016/j.jbusres.2018.10.004

[25] Dabholkar, P, A., Sheng, X. (2012). Consumer participation in using online recommendation agents: effects on satisfaction, trust, and purchase intentions, *The Service Industries Journal*, 32:9, 1433-1449. https://doi.org/10.1080/02642069.2011.624596

[26] Davenport, T., Guha, A., Grewal, D., Bressgott, T. (2020). How Artificial Intelligence will change the future of marketing. *Journal of the Academy of Marketing Science,* 48, pages 24–42. https://doi.org/10.1007/s11747-019-00696-0

[27] Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). Artificial intelligence for decision making in the era of big data—evolution, challenges and research agenda. *International Journal of Information Management*, 48, 63–71.

[28] Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 57, Article 101994.

[29] Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, Article 102168. https://doi.org/10.1016/j.ijinfomgt.2020.102168.

[30] European Commission. White Paper On Artificial Intelligence – A European approach to excellence and trust, 2020. https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf.

[31] Fan, H., Han, B., Gao, W. (2022). (Im)Balanced customer-oriented behaviors and AI chatbots'

[32] Efficiency–Flexibility performance: The moderating role of customers' rational choices. *Journal of Retailing and Consumer Services*, 66, 102937.

[33] https://doi.org/10.1016/j.jretconser.2022.102937

[34] Feine, J., Morana, S., Gnewuch, U. (2019). Measuring Service Encounter Satisfaction with

[35] Customer Service Chatbots using Sentiment Analysis. *14th International Conference on Wirtschaftsinformatik (WI2019), Siegen, Germany, February 24–27.*

[36] Fernandes, T., Oliveira, E. 2021.Understanding consumers' acceptance of automated technologies in service encounters: Drivers of digital voice assistants adoption. *Journal of Business Research*, Volume 122, Pages 180-191, ISSN 0148-2963.

[37] https://doi.org/10.1016/j.jbusres.2020.08.058.

[38] Folstad, A., Skjuve, M. (2019). Chatbots for Customer Service: User Experience and

[39] Motivation. *Association for Computing Machinery*. https://doi.org/10.1145/3342775.3342784

[40] Forrester. 2017. Human vs. Machines: How to Stop Your Virtual Agent from

[41] Lagging Behind. Technical report, Forrester, https://www.amdocs.com/blog/place-digital-talks-intelligent-minds/aia-humans-vs-machines-how-to-stop-your-chatbot-from-lagging-behind

[42] Glikson, E., Woolley, A.W. (2020). Human Trust in Artificial Intelligence: Review of Empirical Research. *Academy of Management Annals*, 0057.

[43] Haugeland, I.K.F., Følstad, A., Taylor, C., Bjørkli, C.A. 2022.Understanding the user experience of customer service chatbots: An experimental study of chatbot interaction design. *International Journal of Human-Computer Studies*, Volume 161, 102788, ISSN 1071-5819,

[44] https://doi.org/10.1016/j.ijhcs.2022.102788.

[45] Hill, J., Ford, W, R., Farreras, I, G. (2015). Real conversations with artificial intelligence: A comparison between human–human online conversations and human–chatbot conversations. *Computers in Human Behavior*, 49, 245-250. http://dx.doi.org/10.1016/j.chb.2015.02.026

[46] Huang, M-H., Rust, R.T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science,* 49, pages 30-50. https://doi.org/10.1007/s11747-020-00749-9

[47] Karimova, G.Z., Goby, V.P. (2020). The adaptation of anthropomorphism and archetypes for marketing artificial intelligence. *Journal of Consumer Marketing*. http://dx.doi.org/10.1108/JCM-04-2020-3785

[48] Kim, H., So, K, K, F., Wirtz, J. (2022). Service robots: Applying social exchange theory to better understand human–robot interactions. *Tourism Management*, Vol. 92, 104537. https://doi.org/10.1016/j.tourman.2022.104537

[49] Kim, Y., Sundar, S, S. (2012). Anthropomorphism of computers: Is it mindful or mindless?. *Computers in Human Behavior*, 28, 241-250. https://doi.org/10.1016/j.chb.2011.09.006

[50] Klaus, P., Zaichkowsky, F. (2020). AI voice bots: a services marketing research agenda. *Journal of Services Marketing*. http://dx.doi.org/10.1108/JSM-01-2019-0043

[51] Kuhl, N., Muhlthaler, M., Goutier, M. (2020). Supporting customer-oriented marketing with artificial intelligence: automatically quantifying customer needs from social media. *Electron Markets* 30**,** pages 351–367. https://doi.org/10.1007/s12525-019-00351-0

[52] Kumar, P., Dwivedi, Y.K., Anand, A. (2021). Responsible Artificial Intelligence (AI) for Value Formation and Market performance in Healthcare: the Mediating Role of Patient's Cognitive Engagement. *Information System Frontiers*. https://doi.org/10.1007/s10796-021-10136-6

[53] Lee, K.W., Hwang, J.H. (2008). Human–Robot Interaction as a Cooperative Game. DOI: 10.1007/978-0-387-74935-8_6. https://www.researchgate.net/publication/226845750

[54] Lee, S,Y., Choi, J. (2017). Enhancing user experience with conversational agent for movie recommendation: Effects of self-disclosure and reciprocity. *Journal of Human Computer Studies*. DOI: http://dx.doi.org/10.1016/j.ijhcs.2017.02.005

[55] Mahadevan, S., Connell, J. (1992). Automatic programming of behaviour-based robots using reinforcement learning. *Artificial Intelligence*, 55, 311–365.

[56] Mariana, M.M., Vega, R.P., Wirtz, J. (2021). AI in marketing, consumer research and psychology: A systematic literature review and research agenda. *Psychology & Marketing,* 1-22. https://doi.org/10.1002/mar.21619

[57] Matsuura, S., Ishimura, R. (2017). Chatbot and Dialogue Demonstration with a Humanoid Robot in the Lecture Class. *Human and Technological Environments, 233-246. https://doi.org/10.1007/978-3-319-58700-4_20*

[58] Mero, J. (2018). The effects of two-way communication and chat service usage on consumer attitudes in the e-commerce retailing sector. *Electronic Markets*, 28(2), 205–217.

[59] Puntoni, S., Reczek, R.W., Giesler, M., Botti, S. (2020). Consumers and Artificial Intelligence: An Experiential Perspective. *Journal of Marketing*. https://doi.org/10.1177/0022242920953847

[60] Qiu, L., & Benbasat, I. (2009). Evaluating anthropomorphic product recommendation agents: A social relationship perspective to designing information systems. *Journal of Management Information Systems*, 25(4), 145–182.

[61] Reddy, T. (2017). Chatbots for customer service will help businesses save $8 billion per year. Retrieved from https://www.ibm.com/blogs/watson/2017/05/chatbots-customer-service-will-help-businesses-save-8-billion-per-year/

[62] Reddy, T. (2017). How chatbots can help reduce customer service costs by 30%. Retrieved from https://www.ibm.com/blogs/watson/2017/10/how-chatbots-reduce-customer-service-costs-by-30-percent/

[63] Rese, A., Ganster, L., Baier, D. (2020). Chatbots in retailers' customer communication: How to measure their acceptance?. *Journal of Retailing and Consumer Services*, Volume 56, 102176. https://doi.org/10.1016/j.jretconser.2020.102176

[64] Rossmann, A., Zimmermann, A., Hetweck, D. (2020). The Impact of Chatbots on Customer Service Performance. 10.1007/978-3-030-51057-2_33.

[65] https://www.researchgate.net/publication/342842655_The_Impact_of_Chatbots_on_Customer_Service_Performance

[66] Sheehan, B., Jin, H, S., Gottlieb, U. (2020). Customer service chatbots: Anthropomorphism and adoption. *Journal of Business Research,* Volume 115, 14-24. https://doi.org/10.1016/j.jbusres.2020.04.030

[67] Skjuve, M., Folstad, A., Fostervold, K.I., Brandtzaeg, P.B. (2021). My Chatbot Companion - a Study of Human-Chatbot Relationships. *International Journal of Human - Computer Studies*. https://doi.org/10.1016/j.ijhcs.2021.102601

[68] Swaminathan, S., Anderson, R., Song, L. (2019). Building loyalty in e-commerce: Impact of business and customer characteristics. *Journal of Marketing Channels*. https://doi.org/10.1080/1046669X.2019.1646184

[69] Techlabs, M. (2017). Can chatbots help reduce customer service costs by 30%? Retrieved from https://chatbotsmagazine.com/how-with-the-help-of-chatbots-customer-service-costs-could-be-reduced-up-to-30-b9266a369945

[70] Verma, S., Sharma, R., Deb, S., Maitra, D. 2020. Artificial intelligence in marketing: Systematic review and future research direction. *International Journal of Information Management Data Insights*. https://doi.org/10.1016/j.jjimei.2020.100002

[71] Vishnoi, S.K., Bagga, T., Sharma, A., Wani, S.N. (2018). Artificial Intelligence enabled marketing solutions: A review. *Indian Journal of Economics and Business,* Vol. 17, No. 4, pages 167-177