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# **The Rise of Chatbots in Customer Service: An in-depth Examination and Consequences**

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## **Abstract:**

In recent years, the landscape of digital marketing has undergone significant transformations propelled by technological advancements and shifts in consumer behavior. Navigating this dynamic environment poses challenges for businesses aiming to meet the expectations of tech-savvy customers, wherein customer service emerges as a pivotal element for success. In addition, chatbots, driven by artificial intelligence, have garnered considerable attention and adoption as a viable solution to elevate customer service experiences. These AI-powered virtual assistants excel in conducting interactive conversations with customers, addressing inquiries, providing information, and delivering personalized recommendations. Harnessing artificial intelligence technologies such as natural language processing, machine learning, and deep learning, contributions to chatbots hold the potential to revolutionize the customer service industry. This study explores the role of chatbots in communication within customer service, specifically examining their impact on consumer behavior. This primary research study underscores the significance of incorporating chatbots into customer service communications to successfully execute company strategies, engage with customers, and offer appropriate services to address their queries and resolve issues. The paper recommends companies to adopt chatbots in the customer service sector to accomplish consumer fulfillment objectives, enhance brand loyalty, and increase satisfaction.

**Keywords:** *chatbots, artificial intelligence, customer service communications, post-purchasing, customer behavior*

## **1. Introduction**

With the help of mass information thanks to the Internet and the technological leap, more and more people are buying only when they have enough knowledge about a product. The availability and clarity of the information give trust and customer satisfaction to proceed with the purchase of a certain product. In the beginning, when people are starting their journey, they are afraid to shop online. E-commerce is lacking the fundamental confidence compared to traditional trade, and products ordered online are not always as expected. There are many "fishing patterns" and counterfeit products and there is also some

risk in terms of the security of sensitive information. These factors, coupled with a lack of organized information, could constitute an obstacle to the purchase of a product. Today, if a company wants to be the "best selling company," it must do so and provide complementary information on the products to be sold. According to IBM, chatbot solutions can reduce customer service costs by up to 30% and increase profit and customer satisfaction by 25% (Jones, 2020). The optimization process involves refining the capabilities of chatbots to better understand and respond to customer inquiries, improve response times, improve accuracy, and ultimately maximize customer satisfaction (Senthilkumar & Kishore, 2021). This broader exploration aims to discover the potential of chatbots to revolutionize customer support in the customer service industry. To lay the foundations for this research, an exhaustive review of the existing literature on the optimization of chatbots for customer service will be carried out. This review will cover studies, research papers, industry reports, and case studies exploring the effectiveness of chatbots and AI techniques in improving customer service experiences. By synthesizing and analyzing this wealth of knowledge, we can gain insight into challenges, best practices, and successful implementations in the field. The research methodology will encompass a combination of quantitative and qualitative approaches. Quantitative analysis will involve collecting data on customer interactions with the chatbot and measuring key performance metrics such as response time, accuracy, and customer satisfaction ratings. In addition, qualitative methods such as interviews will be employed to collect feedback, insights, and qualitative information from people about their experiences with chatbot-based customer service. The results of this research will provide valuable insights into optimizing chatbots for customer support.

## **2. Literature review**

### **2.1. Chatbots**

The main reason humans use chatbots is for productivity, which means faster responses with less effort. Also, chatbots have been implemented for a variety of purposes, for example providing information, social and emotional support, entertainment, or connecting users with other humans or machines (Holtgraves & Han, 2017). The renewed interest in chatbots is also due in part to the development within e-commerce and e-services to incorporate natural language interfaces (Holtgraves & Han, 2017). Chatbots are gradually becoming a regular feature on customer service platforms in banking, insurance, consulting, and industry. Chatbots in human-like conversations give customers the opportunity to write questions and, in return, get meaningful answers to questions in everyday language (Peters Harding, 2018). Chatbots have become an exciting technology tool for human resource managers, using artificial intelligence or rule-based engines to simulate conversations with people (Sean Nixon, 2020). These chatbots aim to create the illusion of interacting with a real person, and advances in speech technology have allowed them to incorporate speech-based interactions alongside text-based conversations. Some chatbots even feature visual avatars or talking heads to enhance their human characteristics. Chatbot interactions typically revolve around small talk, where the bot responds to user input and occasionally asks questions to keep the conversation going (McTaylor, 2016, p. 57).

### **2.2. Channels of usage**

The channels where users can interact with chatbots have grown in recent years. These channels include messaging platforms such as Instagram, Snapchat, Facebook Messenger, WhatsApp, Skype, office and chat services such as Slack and Microsoft Teams, and conventional channels such as web chat, short message service (SMS), voice calls, and the new voice-based virtual assistants such as the Amazon Echo and Google Home (Correl, 2017, p. 16). However, in general, chatbots have relatively similar technologies and architectures. The operating principle of chatbots follows a defined path. The process begins when a mobile user initiates the conversation and ends when the chatbot sends the appropriate response. Since its architecture is remarkably technical and complex, the following steps are briefly described to highlight the main operating principles (Correl, 2017, p. 12).

### **2.3 Types and forms of chatbots**

There are different types of chatbots, and some react differently from others. Not all robots are equal, depending on their level of intelligence and how they define a particular task. It is possible to distinguish between four types of chatbots: Flow oriented chatbots, artificially intelligent chatbots, hybrid chatbots, human-supported chatbots. Hundreds of thousands of companies around the world are developing various forms of chatbots with the intention of improving customer service (Miles, 2022). There are several forms of chatbots such as: Voice-based chatbot, hybrid chatbot, social messaging chatbot, menu-based chatbots, skills-based chatbot.

### **2.4. Integration of artificial intelligent chatbots in customer service strategy**

Chatbots are used in customer service strategies by businesses and HR managers to automate communication with customers. Chatbots equipped with artificial intelligent software integrated into the company's customer service systems to automate conversations with end users can be very useful for any company. Users will find that chatbots can converse and respond in the same way a human customer service provider would, often using programmed responses based on what the end user enters or requests. As an example, a chatbot on a website might ask a visitor what company service or product they would like to learn more about. The bot would provide a response based on the visitor's feedback, leading the user to ask for further information and starting a possible conversion (Barret, 2019).

### **3. Methodology**

Desk research is the main research method used in this master thesis. The main objective of this research is to explore the role of chatbots in communication within customer service, specifically examining their impact on consumer behavior by conducting an interview with a respected figure who works for a company that uses and has implemented chatbot technology in North Macedonia. This interview was conducted electronically. Furthermore, additional research was conducted through an online survey where respondents were asked to answer questions related to chatbot technology as a tool in customer service and how it's affecting people's perceptions and willingness to buy.

#### **3.1 Research method**

The purpose of this study is to determine whether artificial intelligence combined with chatbots influences customer behavior towards improving the level of service provided by the customer service department. Since the purpose of this study is to find out how chatbots influence the consumer to buy a product from a company that is using chatbots in customer service, six sections composed the questionnaire. To begin with, the first section of the questionnaire contains introductory questions to collect interviewee demographics and general relevant data on the use of artificial intelligence and chatbots in customer service. The second section is dedicated to the problem recognition phase of the service-providing process to examine whether chatbots fulfill needs through external stimuli and, more specifically, with artificial intelligence behind the desk. The next sections will collect information on the impact of the use of chatbots on the remaining stages of the process. Customer service providing model, which are: information search, evaluation of alternatives, data collection, and post-purchase service providing. To avoid confusion, the structure of the questionnaire was visible to respondents, was only used in the data analysis and had 23 questions. Qualitative research is carried out with an individualized interview with a customer service director. The goal of this interview is to fully understand the use of chatbots as an aspect of a company's customer service strategy. The questions focus on the influence chatbots have in the customer service department, such as consumer experience, customer engagement, service personalization, information gathering, and post-purchasing processes.

#### **3.2. Data collection**

The survey was shared online through social networks and emails. The link to the questionnaire was posted on social media, especially Instagram and Facebook, and people responded and shared it with their friends. Additionally, personal emails were sent to other people in order to reach a large volume of data. Through these management techniques, it was possible to collect a large amount of data in a short period of time and in a cost-effective manner. Data collection began on December 1 and ended on December 14, 2023. Each of these was consisted of closed questions where respondents were provided with multiple-choice questions in the form of multiple-choice, dichotomous questions, and scale questions.

For the purpose of the qualitative research, a structured interview was conducted with a customer service specialist consisting of six questions. The reason for choosing to do an interview with a customer service specialist was to gather information on how companies in our country implement chatbot technology. The interviewee works for an established company that is a leader in their industry and is constantly following the newest trends. The interview was done via e-mail and telephone, and the selection of the interviewee was based on special characteristics. Interviewee's interest in customer service, chatbots, and artificial intelligence techniques, plus the interviewee's experience working in that sector for a big company. This interview was recorded and transcribed, and the records are presented in a Word document.

### **4. Research results**

In order to construct the questionnaire, we used the "forms" application available in Google Docs. The main reasons to choose this software are that it is free and there are no restrictions on the number of questions and possible answers. When the questionnaire is completed, and the data is collected. Next, all the collected data was filtered and cleaned using Microsoft Excel to exclude all incomplete or twice-completed questionnaires. Therefore, after the cleaning and filtering process, there were 52 responses, which were used in the data analysis process.

#### **4.1 Quantitative research**

This research analyzes a set of people ( $N = 52$ ) who have used chatbots at least once. Table 1 shows the demographic characteristics of the sample used in this research. More specifically, the demographic characteristics are the gender, age, and education level of the people who participated in this survey. People of different age groups participated in this survey, but there were some almost equal participations between women and men (50.5% versus 44.2%), and (5.8%) preferred not to reveal their gender. The demographics that are based on responses from 52 participants show that the average age of people is between 22 and 25 years old (50%) and 26 and 29 (21.2%). While the other age groups are less represented (18–21 (17.3%), 30–34 (7.7%). Regarding the level of education, the highest percentage of participants in this study have a college degree (51.9%), followed by those who have a high school degree (28.8%), and people with a master's degree represent (15.4%).

Table 1. Demographic characteristics of the research sample

Variables		N	%
Gender	Male	26	50
	Female	23	44.2
	Prefer not to say	3	5.8
Age	18-21	9	17.3
	22-25	26	60
	26-29	11	21.2
	30-34	4	7.7
	35+	2	3.8
Level of education	Elementary education	0	0
	High school graduate	15	28.8
	College graduate	27	51.9
	Master's degree	8	15.4
	Doctorate	2	3.8

Source: own research, N=52

For the second part of the survey further questions were asked and the following data was revealed: Frequency of purchasing products with electronic devices, 40.4% of participants use electronic or mobile devices to purchase products weekly, 36.5% monthly, and 23.1% daily. Familiarity with Artificial Intelligence, the highest percentage of participants (96.2%) are aware of the artificial intelligence concept and only 3.8% of participants do not know about this concept. Reasons for using chatbots, people use chatbots for several reasons. The most significant of the reasons is solving a problem quickly (34.6%) and getting a quick response (28.8%); the less significant are providing personalized information (19.2%), interacting with the brand (9.6%), and individual communication with suppliers (7.7%). Benefits from communicating with a chatbot, there are several benefits that people expect to enjoy through communication with a chatbot. In fact, (36.5%) expect to receive an immediate response, (25%) of customers expect 24-hour service via chatbot, (17.3%) want their complaints to be resolved quickly, (7.7%) expect to enjoy a good customer experience, (5.8%) expect friendliness and closeness, while (5.8) people expect convenience and ease of communication. Main preventing factors, the highest percentage of consumers (53.8%) would stop using a chatbot service if the chatbot cannot understand them. Furthermore, (25%) of people agree that they would prefer to communicate with an assistant in real time. (7.7%) of participants interrupt the chatbot's communication if it was not done in a friendly manner. On the contrary, the preference to use a website or app is the least cited reason for consumers to stop using chatbots (3.8%).

Table 2. Analysis of the second part of the survey

Questions	Responses with Percentages				
Frequency of purchasing products with electronic devices	Weekly	Monthly	Daily		
	40.4%	36.5%	23.1%		
Familiarity with Artificial Intelligence	Familiar	Unfamiliar			
	96.2%	3.8%			
Reasons for using chatbots	solving a problem quickly	getting a quick response	providing personalized information	interacting with the brand	individual communication with suppliers
	34.6%	28.8%	19.2%	9.6%	7.7%
Benefits from communicating with a chatbot	immediate response	24-hour service via chatbot	complaints resolved quickly	good customer experience	friendliness & ease of communication
	36.5%	25%	17.3%	7.7%	5.8% & 5.8%
Main preventing factors	if the chatbot cannot understand them	communicate with an assistant in real time	if it was not done in a friendly manner	preference to use a website or app	
	53.8%	25%	7.7%	3.8	

Source: own research

For the third part of the survey additional questions were asked and the following data was revealed: Providing personal data, (40.4%) the participants neither agree nor disagree when it comes to providing their personal data. In contrast, a significant percentage of people (30.8%) are unwilling to reveal their personal data, while (28.8%) are willing to provide their personal data. Decision to buy a product, (48.1%) of consumers are more willing to purchase a product if the chatbot sends notifications and personalized announcements. (26.9%) neither agree nor disagree that they are willing to purchase this product while (25%) are not willing to purchase a product. Solving a problem or discussing a particular topic, (48.1%) of people would be thrilled if a chatbot could help them solve a problem or cover a specific need through a messaging app, while (5.8%) of people would be afraid, (44.2%) of participants said they would feel a bit of both. Receiving a message from a chatbot, (53.8%) stated that if they receive a message from a chatbot that directly relates to their interests can create a desire to buy, (11.5%) declared that this does not generate a desire to purchase while (34.6%) declared maybe. Chatbot engagement with purchases, responses believe that chatbots helps engage purchases faster with which (61.5%) of interviewees agree. Then follows the neutral opinion with (30.8%) of those interviewed. Finally, 7.7%) of participants disagree with this declaration. Customized products, (67.3%) of consumers believe chatbots help them find products designed for their needs while (32.7%) of people have a neutral opinion. Finding products, it is easy to understand that the majority of consumers (73.1%) would purchase products more frequently if they could more easily find products that meet their needs and wants while (19.2%) answered neither positive or negative. In contrast, 7.7%) of respondents expressed the negative point of view. Information provided by a chatbot, (63.5%) of participants are more willing to purchase a product when the chatbot provides them with information about the variety products and their possible differences. The neutral opinion is followed by (25%) of those interviewed. Finally, the lowest percentage of people (11.5%) responded negatively to this question. Company that has embraced new products, 64.5% of participants are more willing to purchase a product when the chatbot provides them with information about different products and their possible differences. The neutral opinion is followed by 24.5% of those interviewed. Finally, the lowest percentage of people (10.9%) responded negatively to this question.

Table 3. Analysis of the third part of the survey

Questions	Responses with Percentages		
Providing personal data	Yes	No	Maybe
	28.8%	30.8%	40.4%
Willing to purchase a product if the chatbot sends notifications and personalized announcements	Yes	No	Maybe
	48.1%	25%	26.9%
Helped by a chatbot in solving a problem or discussing a particular topic with a chatbot	Enthusiastic	Afraid	Enthusiastic and Afraid
	44.2%	5.8%	48.1%
Receiving a message from a chatbot that directly relates to their interests can create a desire to buy	Yes	No	Maybe
	34.6%	11.5%	53.8%
Can chatbot help faster engagement with purchases	Yes	No	Maybe
	61.5%	7.7%	30.8%
Purchasing products when provided help for customized products	Yes	No	Maybe
	67.3%	0%	32.7%
Purchasing products if they could more easily find products that meet their needs and wants	Yes	No	Maybe
	73.1%	7.7%	19.2%
Purchasing a product when the chatbot provides them with information about the variety products and their possible differences.	Yes	No	Maybe
	63.5%	11.5%	25%

Source: own research

For the last and fourth part of the survey, further questions were asked, and the following data was revealed: Company that has embraced new products, 64.5% of participants are more willing to purchase a product when the chatbot provides them with information about different products and their possible differences. The neutral opinion is followed by 24.5% of those interviewed. Finally, the lowest percentage of people (10.9%) responded negatively to this question. Adoption of new technologies presents people's willingness to purchase products from a company that has adopted new products technologies like chatbots. The percentage of positive responses (73.1%) is huge compared to that of consumers with negative responses (1.9%). Furthermore, (25%) of respondents have a neutral opinion. Engagement with a brand when it gives smarter answers it is easy to see that the majority of participants (76.9%) agree with this adoption of the use of new technologies such as chatbots is improving customer service experience. (3.8%) of consumers disagree, while (19.2%)

have a neutral opinion. Chatbot displaying more human traits, the larger group of participants (75%) are more willing interacting with a brand with a chatbot engine if it provides them with more human like information and surprising answers, while only (3.8%) of people disagree. Furthermore, (21.2%) of consumers have a neutral orientation and opinion. Chatbot offering more personalized experience, it is important to note that the majority of people (55.8%) believe that when a chatbot offers a character that shows more human traits and creates a better experience. On the other hand, (9.6%) of people do not agree with this, while (34.6%) neither agree nor disagree. Responding positively to an offer, a significant percentage of surveyed (69.2%) will respond positively to chatbots when they offer a more personalized offer, while (3.8%) won't. Furthermore, (26.9%) chose the neutral response. Post purchasing behavior shows that (67.3%) of consumers will make repeat purchases from a company which sends them order updates such as shipping and tracking via a chatbot service. (26.9%) have a neutral opinion and (5.8%) disagree.

Table 4. Analysis of the fourth part of the survey

Questions	Responses with Percentages		
Willing to buy products from a company that has embraced new technologies like chatbots	Yes	No	Maybe
	61.5%	13.5%	25.5%
Adoption of new technologies like chatbots is changing online shopping and improving the customer experience	Yes	No	Maybe
	73.1%	1.9%	25.5%
Willing to engage with a brand with a chatbot engine if it gives you smarter and surprising answers	Yes	No	Maybe
	76.9%	3.8%	19.2%
Chatbot has an update that displays more human traits and drives the experience to be more personal, does this help improve engagement	Yes	No	Maybe
	75%	3.8%	21.2%
Chatbots offer a more personalized experience	Yes	No	Maybe
	55.8%	9.6%	34.6%
Likely to respond positively to an offer tailored to yours interests and preferences	Yes	No	Maybe
	69.2%	3.8%	26.9%
Willing to repeat your purchases from a company that sends you updates like shipping and tracking via a chatbot service	Yes	No	Maybe
	67.3%	5.8%	26.9%

Source: own research

## 4.2 Qualitative research

The interview with a customer service specialist indicated the types of chatbots they use in their company. The main chatbot in use is a menu-based chatbot. This is a type of chatbot that relies on pre-determined options to guide the conversation with the user. It usually starts with a greeting and a series of options for the user to choose from. Furthermore, the interviewee indicated that the key to success is that chatbots can be a very important aspect of the customer service strategy because they can provide quick service when responding to user demands. This is in line with the quantitative research findings that most of the participants said that the main motivation for using chatbots is to get a quick response. Additionally, another important advantage is the 24/7 availability, and the development of chatbots has a very low cost to maintain customer service. The customer service specialist highlighted that chatbots providing a personalized experience can help build brand loyalty. One reason for that is that consumers can find information and products more easily, which strengthens brand loyalty and improves the consumer experience also added that a chatbot service could really be very effective in industries offering a wide variety of products. The interviewee drew attention to the fundamental role of personalization in providing the consumer with the right answer or solution to their problem. Companies must respond to specific needs to satisfy customer service desires. Likewise, stated that when a chatbot can solve a particular problem, it is easier to convince a customer to purchase a product. It is essential for companies to classify their target groups depending on their personal characteristics in order to use the appropriate approaches in their chatbot services. Each customer has a different character, and companies must find ways to classify them according to their common psychological characteristics. Companies that adopt this strategy can create a more positive customer service experience. Additionally stated that the main challenge for them would be to find a suitable AI chatbot solution that can be adapted to the Macedonian language and will fulfill all of the functional and technical requirements that they have in their company. On the topic of what expects the future of chatbots to look like, she stated that creating chatbots that will have a human-like appearance and be able to provide communication that will give customers the "human touch" that sometimes our current chatbots don't provide, this is crucial for our company.

## 5. Discussion

In the problem recognition and solving phase, the study revealed that chatbots appeared to be very effective and important for consumers. This is the phase in which the consumer cultivates a need to solve their problem quickly and efficiently. By doing this, they will be satisfied, which will lead the consumer to purchase another product. Furthermore, during the primary

research, it was observed that most of the customers would feel enthusiastic if a chatbot could help them solve a problem or meet a particular need through a messaging application. In the information search phase, the survey revealed that consumers seemed to be interested in a chatbot service. More precisely, the results revealed that chatbots can help customers find products tailored to them. This confirms previous surveys on people's primary motivation for using chatbots. More precisely, consumers really appreciate it when chatbots help them save time or make access to information easier. This study argues that the adoption of new technologies, such as chatbots, is changing the customer service experience for the better. It is essential that companies build a personalized customer service engine with the aim of improving the customer experience and offering satisfactory responses to their questions (Kimora Mayer 2020). Additionally, the data revealed that the top reason consumers stop using chatbots is if the chatbot does not understand consumer questions. Additional investigation of the primary data beyond the research questions revealed that there is significant growth for chatbots in the customer service industry. The data revealed that 40.4% of consumers use electronic or mobile devices to purchase products weekly, and 36.5% of them use them monthly. This confirms that the trend will continue, and the number of people who use chatbots in the future will only increase. This leads to the conclusion that it is vital for companies to invest in artificially intelligent chatbots to provide a satisfactory customer service experience.

## 6. Conclusion

The findings revealed that chatbots are an effective customer service tool that can influence consumer behavior at all stages of the problem-solving process. Specifically, in proving the appropriate solution in the fastest and most efficient time, Consumer behavior chatbots can influence consumers by sending them personalized tips and notifications, helping them implement their purchases more quickly and easily through the use of highly relevant information recommendations, and providing them with information on different products and their potential differences. Therefore, the thesis aimed to examine how chatbots influence the post-purchase phase at various levels. To obtain more credible results, a combination of a quantitative approach and a qualitative analysis was used. The quantitative analysis was carried out through a questionnaire that was administered to 52 respondents. For the qualitative analysis, a structured interview was conducted with a customer service specialist. As for the key findings, the survey revealed that chatbots have an impact on consumers lives and their purchase decisions. More precisely, in the pre-purchase phase, recommendations and helpful tips can create the desire to purchase again and make future purchases more likely. In the purchasing phase, customers are more willing to purchase a product if the company offers a personalized experience after the purchase and real engagement during the purchasing process. Regarding post-purchase behavior, consumers are more willing to repeat their purchases from a company that sends them order updates and has a high-quality chatbot technology implemented that can answer and solve any question the customers might have.

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