Master Thesis

Marketing Communications and Technology in the Digital Economy

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Affidavit

"I hereby declare on oath that this written assignment, 'Marketing Communications and Technology in the Digital Economy' which I am submitting as part of my master's degree, is my own work. All sources have been properly acknowledged and the assignment contains no plagiarism."

Date and of signing	Student's signature
20.10.2021	

Abstract

Digitalization is penetrating the economy more and more every year, changing traditional structures and business models. The digital economy has a direct impact on marketing and, consequently, advertising, in some cases reducing the effectiveness of a company's previous promotion methods and channels of communication with potential consumers. The analysis of modern technologies and new communication channels, and the subsequent implementation of the results of the study, can be a competitive advantage for businesses.

The relevance of this paper stems from the fact that activities aimed at effective communication between companies and consumers are an essential element of an integrated marketing communications system. The analysis of communication channels and their selection before shaping a digital marketing strategy is an indispensable step to achieve commercial objectives. The marketing strategy of a modern B2C company cannot exist without digital communication channels and information systems. Communication is changing in the era of active digital consumption, opening new business opportunities. Those companies that understand the importance of technology and improve communication with their target audience have a competitive advantage in the digital age. Technologies such as artificial intelligence, natural language processing, sensor technology, augmented reality, virtual reality, internet of things, blockchain, chatbots, and big data have a direct or indirect impact on marketing activities, creating a huge field to explore. Chatbot technology is being deployed in all industries: education, telecommunications, medicine, food, fashion and beauty, banking and finance, real estate, insurance, transport, and tourism. Chatbots are especially relevant due to the popularity of messengers such as WhatsApp and Facebook Messenger.

Theoretical significance of the thesis lies in the fact that it clarifies and specifies the conceptual apparatus, describes modern technology and its application in marketing, developed theoretical conclusions to improve the effectiveness of communication with consumers of hospitality enterprises, for further use of the chosen technology and its subsequent improvement. The practical significance lies:

1. In the analysis of the use of chatbots and the development of recommendations for the implementation of the technology for the hotel Das Sieben. The results of the study can be used to create and implement chatbots in other hotels and subsequently improve the automated channel of communication with potential guests in the future.

2. A quantitative online survey (n=200) was conducted to give the evidence of the following research question: *If the chatbot is an effective communication tool, what are the determining factors that contribute to this effectiveness in the hotel industry?* The research was carried out among Austrians and Russians aged 18-50 (male and female). The data from the online survey was analyzed in the SPSS statistics software. According to the result that we got during the study we may conclude that only positive experience and attitude to the chatbot technology in general may be among the determining factors to the effectiveness of chatbot in the hotel industry. On the contrary, connection between trust and competence of chatbots wasn't verified. More detailed review of variables correlation can be found in the appendix of the thesis.

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1 Introduction

This chapter gives an overview of this master thesis. It defines the problem and purpose of the thesis and reveals the methodology and structure.

1.1 Problem Definition

In today's world of digital consumption, it is necessary to monitor the development of technology and its impact on marketing communications in order not to fall out of the general flow of transformation. This approach creates the conditions for an informed and appropriate implementation of technology in business. The implementation of chatbots can facilitate communication between consumers and companies in the hospitality industry in a better and more reciprocal way.

We assume a high degree of relevance of issues related to digital technologies and their impact, on companies' marketing communications. The relevance of the topic stems from the need to: (1) Raise awareness of digital technologies. (2) Improve digital communication channels between companies and consumers. (3) Introduce chatbot technology into the hospitality industry to optimize the resources spent on customer service. (4) Consideration and analysis of chatbots' capabilities in relation to the development of artificial intelligence.

1.2 The aim of the Thesis

The aim of this paper is to conduct a comprehensive study of modern digital marketing communication tools and to develop practical recommendations for the implementation of a chatbot on the website of the hotel Das Sieben. The object of the study is digital marketing communication tools. The subject of the study is a chatbot technology as a digital marketing communication tool. Several objectives are set to achieve this goal: (1) To consider the theoretical and practical aspects of shaping an integrated marketing communications system in the context of digitalisation. (2) Explain the essence of the concepts of "digital advertising" and "digital marketing". (3) Carry out a comparative analysis of the digital communications markets in Russia and Austria, identify problem areas and characterize the main trends. (4) Justify the introduction of chatbots as effective

digital marketing communication tools. (5) Develop recommendations for implementing a chatbot on the Das Sieben Hotel website.

Several key points are to be defended:

1. The digital economy has affected marketing and advertising, the effectiveness of previous methods of promoting companies has declined and new forms have emerged.
2. There is no consensus among scholars on the definition of concepts such as “digital marketing”, “Internet marketing”; “online marketing”, and “e-marketing”. They are often used synonymously, which does not reflect their true meaning.
3. A chatbot is one of the most effective tools for digital marketing communication.

1.3 Methodology

For this thesis, the quantitative empirical method has been chosen. An online survey has been constructed alike for Austrian and Russians. A survey is made for men and women aged 18 to 50 from Vienna, Austria, and men and women from the same age group from Moscow, Russia. The survey participants will be checked on their communication channel preference with hotels.

1.4 Structure of the Thesis

This thesis is constructed from 6 main parts, which are:

- Chapter 2 reviews the literature, research and sources relating to the topics covered in the thesis.
- Chapter 3 analyses the concepts of marketing, marketing communications, digital marketing, digital advertising, variants of marketing periodization and different technologies influencing marketing today are mentioned.
- Chapter 4 provides an analysis of the impact of the digital economy on marketing communications in Russia and Austria, statistics on the usage of chatbots and existing successful examples of this technology application.

- Chapter 5 outlines suggestions for solving the problems of the chosen enterprise, shows the way a rule-based chatbot works, provides examples of companies that provide bot creation and technical support services in Austria, as well as their comparative characteristics.
- Chapter 6 explains the empirical study, method of research and shows the results.
- Chapter 7 presents the conclusion to the master's thesis. The theoretical and empirical results of the are reflected.

2 Current state of research

This chapter covers the state of research on chatbot technology in recent years. All publications are mentioned in chronological order, from old releases to new ones.

Table 1: Study profile, Radziwill & Benton

1. Evaluating Quality of Chatbots and Intelligent Conversational Agents	
Authors	Nicole Radziwill and Morgan Benton
Method	A review of the scientific literature to provide a comprehensive overview of the quality attributes of chatbots, identifying approaches to quality assurance.
Sample	36 scholar articles and conference papers
Publication date	April 2017
Place of publication	Quality and User Experience Journal

Sources: Table compiled by the author

The literature for the study was selected from 1990 to 2017 based on the following criteria: (1) First, the researchers focused on scientific references, supplemented only by industry publications from 2016 and 2017; (2) For the relevance of the data collection, publications were selected based on the content of at least one of the terms chosen by the authors in the title or abstract; (3) Articles focusing on programming and chatbot engineering were also excluded. The quality attributes were extracted from all these studies which were divided into several sections: efficiency, effectiveness, satisfaction. Each section has its own category and reference accordingly. Efficiency refers to the accuracy and completeness with which users achieve their goals through the chatbot, whereas efficiency refers to how resources are used efficiently to achieve these goals. Below we will show just a part of the table that reveals effectiveness as a category(Radziwill & Benton, 2017, p. 6):

Table 2: Chatbot effectiveness by Radziwill & Benton

Efffectiveness		
Category	**Quality Attribute**	**Reference**
Functionality	• Accurate speech synthesis • Accurate commands interpretation • Formality degree • Linguistic accuracy of outputs • Task execution • Transaction's facilitation and status reports • Ease of use • Problem-solving on the fly • Knowledge breadth and flexible interpretation	• Cohen & Lane (2016) • Thieltges (2016) • Kluwer (2011) • Morrissey and Kirakowski (2013) • Staven (2017)
Humanity	• Passes Turning test or doesn't have to pass it • Transparence to inspection • Include errors to increase realism • Natural interaction, convincing and satisfying • Ability to respond specific questions • Maintains themed discussion	• Weizenbaum (1966) • Wallace (2003) • Ramos (2017) • Bostrom & Yudkowski (2014) • Coniam (2014) • Morrissey & Kirakowski)

Sources: Part of the table is taken from the mentioned study by Radziwill & Benton

The result of the study provides in-depth information on the research literature since 1990 about quality of conversational agents. It helps us to identify gaps and complement the findings with our own research on the determinants of the effectiveness of chatbots as a customer communication channel. More detailed we will discuss it in the Chapter 6 of the thesis.

Limitations. The study is relatively old. Today, there are already new approaches and research on the subject, which will be discussed below. But at the same time, we should note that a lot of work has been done by the authors, which can help researchers today to trace the chronology of scientific thought regarding chatbots.

Table 3: Study profile, J. van der Goot, Pilgrim

2. Exploring Age Differences in Motivations for and Acceptance of Chatbot Communication in a Customer Service Context	
Authors	Margot J. van der Goot, Tyler Pilgrim
Method	Qualitative study
Sample	54–81 years, N=7; 19–30 years, N=7
Publication date	November 2019
Publisher	Springer International Publishing

Sources: Table compiled by the author

This study gives an overview of how age groups potentially differ in their motivations to use chatbots as a communication channel. The authors presented the results of the study on(van der Goot & Pilgrim, 2020, p. 177): *Age difference in motivations.* Both groups showed older respondents were more likely to express their preference for human contact over a chatbot. The main motivation for chatbot communication in both age groups is to get an answer to a request. The survey participants believe that chatbots are useful in e-commerce, technical support, banking, travel, and meeting planning. For dealing with more complex issues respondents prefer to communicate with a human. *Age difference in technology acceptance.* It was found that both age groups generally found it easy to use chatbots and that having buttons in the dialogue made it easier to communicate. However, both groups experienced frustration when the chatbot did not understand the request. *Perceived Security.* Respondents in both groups had difficulty assessing how safe they considered chatbot communication to be.

Limitations. First, this study focuses on a subset of all possible perceptions of chatbot communication. Second, the age ranges in the groups are broad (19-30 and 54-81). Study participants in the sample lived in two countries, the United States, and the Netherlands. This may have influenced the perception of chatbot communication. Cultural differences in the perception of chatbots could be studied in the future.

Table 4: Study profile, Mohamed Benchhiba

3. Customer Satisfaction with Virtual Assistance in a Hospitality Context	
Authors	Simo Mohamed Benchhiba
Method	Qualitative study
Sample	N=13
Publication date	June 2020
Place of publication	Arcada University of Applied Sciences

Sources: Table compiled by the author

This study deals to explore experiences of four hotels' chatbots in Finland. The study showed that the chatbot's model and platform are decisive factors for the success of the chatbot(Benchhiba, 2020). It was also founded that users are less likely to use a chatbot for transactional purposes. User satisfaction rates are influenced by the degree of human involvement in helping the chatbot. In other words, using a hybrid form of chatbot (autonomy + real agent support) increases customer satisfaction.

Based on the data collected, the author identified the following factors influencing satisfaction rates: (1) *Instantaneity:* users' satisfaction depends on instantaneity of the answers. This factor is emphasized more depending on the urgency of the user request. (2) *Learnability:* chatbots should be easily to dialogue with and visible. (3) *Routing to human:* the link to a real agent is associates with the "peak of satisfaction" among some respondents. Routing is the way out for users from a state of miscommunication with a chatbot to the comfort of human communication. (4) *Embodiment:* friendly sequences, thank-you and welcome messages are expected not only from savvy live agents, but also from chatbots. The author stresses that satisfaction with hotel chatbots is important for perceived usefulness and for future implementation. The study concludes that the studied chatbots are less useful for more specific queries.

Limitations: One of the chatbots was deprived of live agent support during the study due to the COVID-19 crisis. The participants took this into account in the evaluation.

The crisis also had an impact on the interviews, instead of face-to-face meetings the author conducted a form of online interview. This study is for specific chatbots and not for the industry. The sample is very small, and it is not clear what principle the author used to select the interviewees. The author writes that each chatbot can be tested according to a specific time, the purpose of the interaction, using other research methods.

Table 5: Study profile, Sheehan, Seung Jin, Gottlieb

4. Customer service chatbots: Anthropomorphism and adoption	
Authors	Ben Sheehan, Hyun Seung Jin, Udo Gottlieb
Method	Quantitative research
Sample	N=190
Publication date	July 2020
Place of publication	Journal of Business Research

Sources: Table compiled by the author

Today, companies are automating customer service with the help of chatbots. Misunderstandings often arise between the user and the bot. The authors examine the relationship between miscommunication and chatbot adoption, specifically anthropomorphism. The study presents two experiments that compare acceptance and humanity as indicators in three types of chatbots: (1) error-free, (2) requiring clarification regarding user input, (3) not defining context. The results of the study show that unresolved errors reduce anthropomorphism. No perceptual difference was found between a bot that does not make an error and one that seeks clarification. Clarifying input and not making errors equate in terms of performance. The authors emphasize that the higher the user's need to communicate with a person, the stronger the relationship between acceptance and anthropomorphism. The result of the study: anthropomorphic chatbots can satisfy the social desires of consumers with a high need for human interaction(Sheehan, Jin, & Gottlieb, 2020, p. 21).

Limitations. Despite the undoubtedly high quality of the work done by the researchers, misunderstanding is only one factor in the dissatisfaction with chatbots.

The study also involved only Americans. In the second experiment, the participants already knew they were being answered by a robot, unlike in the first experiment, which may have affected the results of the study.

Table 6: Study profile, De Cicco, Costa e Silva, Romana Alparone

5. Millennials' attitude toward chatbots: an experimental study in a social relationship perspective	
Authors	Roberta De Cicco, Susana Costa e Silva, Francesca Romana Alparone
Method	Experiment
Sample	N=193
Publication date	July 2020
Place of publication	International Journal of Retail & Distribution Management

Sources: Table compiled by the author

The aim of this study is to examine closely the perception of chatbots by Millennials and to identify the variables that contribute to their positive attitudes. Using a factor-based approach, the authors investigate the impact of visual cues and different interaction styles on social presence, changes in satisfaction, trust, and attitude towards the chatbot(De Cicco, Silva, & Alparone, 2020). An experiment was conducted based on data from a survey of 193 Millennials of Italian origin. The results showed that a socially oriented interaction style with the user increases the evaluation of social presence. In the case of the avatar, no significant effect was found.

Limitations. This study has several limitations. The task given to the subjects in the study was a fiction task. Behavioral data could be collected in the future from real companies using chatbots in e-commerce. The overall results are restricted to a relatively small sample, whose representatives are only millennials-Italians. Another factor in changing attitudes towards chatbots could be different levels of engagement and spending. be certain products from different price segments.

Table 7: Study profile, Følstad & Brandtzaeg

6. Users' experiences with chatbots: findings from a questionnaire study	
Authors	Asbjørn Følstad, Petter Bae Brandtzaeg
Method	Quantitative study
Sample	N=207
Publication date	December 2020
Place of publication	Quality and User Experience Journal

Sources: Table compiled by the author

The authors of the study believe that only chatbots that are useful and pleasant to communicate with will become widespread. The article provides a theoretical basis and details positive and negative experiences with chatbots. Through a questionnaire study, more than two hundred users described their experiences. The analysis of the questionnaires was based on user experience theory with a focus on hedonic and pragmatic attributes. The study found that older participants reported pragmatic attributes (effective help, problems with interpretation) as most important to them in the user experience, while younger participants conversely reported hedonic attributes (entertainment value, strange and rude responses). Based on their findings, the authors propose four "high-level lessons learnt"(Følstad & Brandtzaeg, 2020, p. 12):

1. *Usefulness* and assistance in achieving goals are the most important factors in a positive user experience. Interpreting user intent and providing adequate responses will be key variables.
2. The presence of *hedonic attributes* (entertainment, inspiration, and novelty) also enhances the quality of user experience.
3. Qualitative *user reports* should be collected to analyze and subsequently improve the user experience.
4. *Customization and personalization*. The pragmatic and hedonic attributes of chatbots have different degrees of importance for different age groups.

Limitations. The sample of the study was not sufficient for a more detailed analysis of the degree of importance of key aspects of user experience for small age groups

and different types of chatbots. At the same time, this study contributes to the understanding of good and bad user experience factors of chatbots. The participants in the study belong to one language group and one region. Research in other regions may lead to different results.

The next chapters reflect various aspects of the problem of formation and development of integrated marketing communications, that are reflected in the works of such scientists' economists as A.V. Arlantsev, K. Bluth, P. Valen, R. Leuterborn, F.G. Pankratov, E.V. Popov, T.K. Serugina, S. Tannenbaum, V.G. Shakhurin, D. Shultz and others, who consider marketing communications as the most effective way of products and enterprise promotion in modern conditions.

Digitalization, the development of digital technologies and marketing communications are the objects of research by both Russian and foreign scholars. Research in this area is carried out by: E. I. Kulikova, V. I. Cherenkov, A. Y. Shora, O. D. Andreeva, A. N. Abramova, D. A. Shevchenko, F. Kotler, A. Steven, J. Stern, A. De Bruyn, M. Taylor, T. Gillpatrick, D. Reilly, D. Grudney, S. Wren, E. van den Broek, B. Zaruali, P. Gench, K. Harsh. Zaruali, W. Gong, P. Gench, C. Harvey, C. Moorman, M. Castillo Toledo, D. Jordan, W. Pride, O. Ferrell, M. Taylor, C. Wren, G. Brunswick, H. Lane. All the insights from their scientific papers are revealed in the next chapters.

2.1 Interim conclusion Chapter 2

All these research papers deal either with the chatbot technology effectiveness in customer service in different industries or chatbot user experience. All scholars define different factors and patterns in attitude to chatbots as a communication tool depending on different variables. In all studies scholars claim that chatbots became very important in the world of digital consumption where marketers develop their online communication experience. In travel services, tourism, and hospitality industries, chatbots are capable to increase the efficiency of a company's service delivery. These include customer segmentation, concierge service, quality service delivery, and customer relationship management(Ukpabi, Aslam, & Karjaluoto, 2019, p. 117).

We have certainly drawn useful information for our own research. Despite the conclusions drawn in chapter two, they are applicable only to a limited extent. Some researchers worked with small samples, the respondents were also only from certain national and regional groups. There is also a gap in the case study field related to the research on chatbots as a communication channel with hotels. All these factors point to the need for further research and an increased interest in the topic that unites the works discussed above. We believe that the need for further research remains.

While paying tribute to the results of research by domestic and foreign scholars in the field of digital marketing and the transformation of marketing communications and chatbots, it is necessary to note the incompleteness of these studies, the absence of fundamental works in which the digital tools of the integrated marketing communications system are considered as the object of research.

3 Theoretical aspects of an integrated marketing communication system in the context of digitalization

The author reveals and challenges different approaches to the definition of marketing, shows different periodizations of marketing. The third chapter describes technologies such as artificial intelligence, sensor technology, blockchain and others in relation to marketing. It also highlights chatbot technology as an important form of communication with consumers in the digital age.

3.1 Digital advertising and digital marketing: basic concepts

Today, marketing has become such a broad concept that its definition is revised, re-approved, and modified by the American Marketing Association every three years (“What is Marketing?,” n.d.). It should be noted that to understand marketing, it is important to know not only its definition but also the different strategies that businesses use to create interest in their products and services, to consider the different activities that marketing involves, and the processes that ensure the flow of goods from producer to consumer. Understanding marketing also requires fundamental knowledge from areas such as economics and psychology, and an understanding of how consumer decision-making about the purchase of a product or service works(Levens, 2014, p. 2).

The Dictionary of Economics defines marketing as "An integrated system of production and sales organization, focused on satisfying consumer needs and generating profits on the basis of market research and forecasting" (Borisov, 2002, p. 895) John Burnett once noted: "Marketing is not easy to define. No one has yet been able to formulate a clear, concise definition that will gain universal acceptance" (Burnett, 2002, p. 11).

Having studied many sources of scientific literature, one can conclude that there are as many definitions of marketing as there are scientists and practitioners in this field. However, as early as 1978 a professor of business ethics and marketing from the University of Southern Mississippi developed criteria against which potential definitions of marketing can be tested. In our view, these criteria can be applied not only to the concept of marketing, but also to any other economic concepts and their

formulations. In his work, the author stresses that the definition of marketing should be useful for "theorists, practitioners, teachers of this subject" (Robin, 1978, p. 228)and suggests the following criteria:

1. The level of abstraction norm – indicates that any definition should be sufficiently limited and specific to reflect its essence, but also abstract to include and reflect those topics that should be considered as an integral part of the marketing field.

2. The norm of correspondence – the definition should be broad enough to cover all manifestations of marketing, but also to exclude issues that are generally outside the scope of marketing.

3. The pragmatic norm – the criterion tests the ability of a definition to be applicable to practical situations, and how useful it can be to all those individuals who work with it.

4. The norm of simplicity is the value of a definition in its simplicity. The complexity of the definition should be justified. In the authors' view, unnecessary comparisons and jargon should be avoided.

It is impossible to review and analyze all definitions of marketing. Marketing, as a discipline, is evolving and changing, expanding its boundaries. This can easily be traced by looking at how the concept of marketing has changed over time.

Based on the criteria outlined above, we have selected the most relevant and succinct definitions of marketing from the academic literature over the years. Most of the definitions below have been collected and analyzed in the works of experts and scholars such as Weitz and Ringold (Ringold & Weitz, 2007), Brunswick (Brunswick, 2014) and Cohen (Cohen, 2011). The definitions in Table 1 are presented in chronological order:

Table 8: Defining Marketing

Authors	The year	Definition
Clark	1922r.	Marketing consists of those efforts which effect transfers in the ownership of goods, and care for their physical distribution.
Maynard and Beckman	1927r.	Marketing covers all activities necessary to effect transfers in the ownership of goods and to provide for their physical distribution".
American Marketing Association	1935r.	Marketing covers all business activities necessary to effect transfers in the ownership of goods and to provide for their physical distribution.
American Marketing Association	1948r.	Marketing is the implementation of commercial activities that direct the flow of goods and services from producers to consumers.
Alderson	1957r.	Marketing is an exchange between consumption groups on the one hand and supply groups on the other.
Kotler	1967r.	Marketing is the analysis, organization, planning and control of a firm's resources, policies, and activities to meet the needs and desires of selected customer groups to generate profits.
Markin	1979r.	Marketing is a set of activities through which the demand for goods, ideas and services is managed to facilitate exchange in a satisfactory manner.
McDaniel	1982r.	Marketing is a human activity aimed at satisfying needs and desires through the process of exchange.
American Marketing Association	1985r.	Marketing (management) is the process of planning and implementing the conception, pricing, promotion and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational goals.
Olufokunbi	1993r.	Marketing is a human activity aimed at satisfying needs and desires through the process of exchange, and the pursuit of market objectives.
Pride and Ferrell	1997r.	Marketing is the process of creating, distributing, promoting, and pricing goods, services, and ideas to facilitate satisfying exchange relationships in a dynamic environment.
Kotler	2003r.	Marketing is the art and science of selecting target markets, attracting and retaining customers, developing a customer base by creating the highest value for the consumer, disseminating information

		about it and delivering it to the consumer(Kotler, 2010, p. 13).
American Marketing Association	2004г.	Marketing is an organizational function and a set of processes for creating, informing, and delivering value to consumers and for managing customer relationships in a way that benefits the organization and its stakeholders.
Kotler, Armstrong	2018г.	Broadly speaking, marketing is a social and managerial process through which individuals and organizations obtain what they need and want by creating and exchanging value with others(Kotler & Armstrong, 2018, p. 29).

Sources: Table compiled by the author from Weitz and Ringold, Brunswick, Cohen

Broadly speaking, marketing is "the social and managerial process by which people and organizations get what they need and want by creating and exchanging value with others". Definitions of marketing vary greatly from decade to decade and two trends can be observed(Burnett, 2002, p. 11):

- Expanding the scope of marketing to commercial and non-commercial organizations.
- Extending the responsibility of marketing beyond the personal interests of the firm, a new goal emerges - the betterment of society as a whole.

According to the AMA (American Marketing Association) definition, which was approved in 2017,(“What is Marketing?,” n.d.): "Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large". This definition cannot be challenged. In our view, it meets the criteria 1, 3, 4 mentioned at the beginning of the paragraph and captures the whole essence of marketing, but excludes its modern digital component, what is now called "digital marketing".

To understand what constitutes digital marketing, it is necessary to distinguish between the concepts of 'digital marketing', 'internet marketing' or 'online marketing', and 'email marketing'. In Russian modern scientific literature, these concepts often appear as synonyms in authors such as: Yampolskaya, Starostin, Koimur(Yampolskaya, Starostin, & Koimur, 2016, p. 237), Kulikova (Kulikova, n.d.,

p. 488), Arkhipova, Gurieva(Russian State University for the Humanities, Arkhipova, Gurieva, & Russian State University for the Humanities, 2018).

The difference between the words 'digital', 'internet', 'electronic' and 'online' lies in their meaning and origin. The word 'digital' comes from the Latin 'digitus', a finger referring to the oldest counting instrument. When information is stored, transmitted or forwarded digitally, it is converted into numbers – at the most basic machine level into 'zeros and ones'("What is Digital Technology | IGI Global," n.d.). In the context of marketing, 'digital' – based on digital technology, using digital media.

The authors of the article 'Developing the use of digital marketing in the global economy' write: "Digital (and essentially interactive) marketing is the use of all possible forms of digital channels to promote a brand"(Andreeva, Abramova, & Kuharenko, 2015, p. 29). Where did the word 'interactive' come from? The problem with the concept of 'digital communication channel' or 'digital media' is that it does not reflect two important elements: interactivity and group building("What is Digital Media?," n.d.). Most computer networks are bidirectional, allowing messages to be addressed and instantaneously responded to. This is the difference between digital media and one-way broadcast media, which do not allow for feedback. A second feature of digital media is the ability of network participants to organize themselves into groups. The social network Facebook is a good example.

In 'The Marketing Book', Baker and Hart give a very long definition of digital marketing(Baker & Hart, 2008, p. 374), essentially describing its three functions: (1) promoting marketing activities, (2) developing a planned approach to improving consumer understanding, (3) the use of digital technology.

In both Russian and foreign scientific literature, there is no generally accepted concept of 'digital marketing'. Therefore, we have formulated a definition which, in our opinion, reflects the whole essence of digital marketing activities: Digital marketing is a set of processes for facilitating marketing activities using digital communication channels and digital technologies to attract and retain consumers. We will write more about digital marketing in the following paragraphs.

Internet marketing (online marketing) is only part of digital marketing because it involves the use of the Internet, while digital marketing may exclude it (Shevchenko, 2018, p. 84), for example: SMS, television and radio advertising(Storm, 2020). Kotler writes: "Internet marketing refers to marketing over the Internet using company websites, online advertising and promotions, email marketing, online videos and blogs. Social media and mobile marketing also have a place on the Internet and should be closely coordinated with other forms of digital marketing"(Kotler & Armstrong, 2018, p. 516).

As we have already established, digital marketing is a broad concept that encompasses all marketing activities across all digital communication channels. But what about the concept of 'e-marketing'? Electronic marketing (E-Marketing), on the other hand, uses exclusively the media available through the Internet. It differs from Internet marketing in that it also focuses on managing, building and tracking consumer relationships through tools such as e-mail marketing, online reviews, and referral programs(Storm, 2020).

We see another problem that we think it is necessary to highlight. Often, we see digital advertising and digital marketing used synonymously on the internet and even in academic papers. There is a difference between the two and there are the following reasons(“Digital Marketing Vs. Digital Advertising,” 2021):

1. Advertising is only a part of marketing; hence digital advertising is a digital marketing tool.
2. Digital advertising is a short activity, while digital marketing is a process.

Marketing focuses on the target market, while advertising focuses on the target audience, which is determined by market research. Digital advertising is a process of interaction between marketing tools, while digital marketing is a process of interaction between marketing tools. The term "marketing mix" reflects the interaction of individual marketing elements: product, price, promotion, place, which are often referred to in scientific literature as the 4Ps(Tomczak, Reinecke, & Kuss, 2018, p. 172)Each of these elements influences the choice of advertising and its tools to achieve the marketing objectives. However, the 4P concept is often criticized because it is based on the mindset of the seller rather than the buyer.

3. Digital advertising makes a brand visible, while digital marketing develops the brand. "It is a mistake to think that brand building is a matter of advertising. Brand building is a complex process that uses a number of different tools"(Kotler, 2010, p. 20).
4. Digital marketing has many tools and techniques as opposed to digital advertising. The main types of digital advertising: Search Ads, Media advertising (videos and banners, pop-ups), Social media advertising (Facebook, Twitter, YouTube, Instagram, TikTok). The main types of digital marketing: search engine optimization (SEO), social media marketing (SMM), content marketing, mobile marketing, affiliate marketing, online advertising.

The main focus of digital marketing is to reach people online who have the potential to become customers for businesses. And because online audiences are people who are diverse in their interests and hobbies, audience psychology becomes the backbone of most marketing techniques and strategies.

There is no generally accepted definition of integrated marketing communications (IMC) in the literature, as scholars cannot define what this concept means in practice. Some of them argue that the theoretical concept of IMC is ambiguous and allows researchers to use the interpretation of the concept that best suits their research plans(Baker & Hart, 2008, p. 330).

Integrated marketing communications Integrated marketing communications refers to the use of complementary communications that are integrated with other marketing tools to achieve their maximum effectiveness. Digital communication is a method of communication in which information is digitally encoded in the form of discrete signals and electronically transmitted to recipients(“Digital Communication System,” n.d.). The use of the internet, mobile apps and other digital communications has become the norm for us today, and consumer behavior has changed and continues to change with technological innovation. These in turn have a positive impact on consumer attitudes towards online shopping, "while also increasing market share for e-commerce-oriented organizations"(Dwivedi et al., 2020, p. 2).

3.2 Stages in the development of marketing and the transformation of marketing communications

Throughout the existence of marketing as a discipline, scholars have repeatedly identified and analyzed phases or periods that characterize the history of marketing practice. According to the publicly available Internet Encyclopedia("History of marketing," 2021), the most frequently cited works in this field were written by Robert Keith and Ronald Fullerton. Periodization, as a method of research, helps to show the development of the historical process, as well as the correlation of its individual aspects. Keith, in his work entitled The Marketing Revolution, identifies the following periods (eras) (Keith, 1960, pp. 35–38):

Table 9: Marketing eras according to Keith

Era	The year	Title
1st	1869s to 1930s	Production oriented
2nd	1930s to 1950s	Sales oriented
3rd	1950s	Marketing oriented
4th	onwards	Marketing control

Source: Keith, 1960, pp. 35 – 38

Using the example of Pillsbury, the author briefly explains each of the stages in the evolution of marketing. In contrast, Fullerton provides an alternative and more precise periodization of the development of marketing(Fullerton, 1988, pp. 108–125).

Table 10: Marketing eras according to Fullerton

Era	The year	Title
1st	1500 – 1750s	Era of antecedents
2nd	1750s to 1870s	Era of origins
3rd	1850s to 1929s	Era of institutional development
4th	1930s onwards	Era of refinement and formalization

Source: Fullerton, 1998, pp. 108 – 125.

It should be noted that there is no generally accepted marketing periodization in the academic literature. In her study, Grundy(Grudney, 2010)examined five different periodization by scholars such as Dibb and Simkin(Dibb & Simkin, 2004),

Morgan(Morgan, 1996), Lancaster and Reynolds(Lancaster & Reynolds, 2005), Blythe(Blythe, 2005), Drummond and Ensor(Drummond & Ensor, 2005), where she concluded that there is no consensus among researchers. The most detailed periodization from our point of view of the above authors was provided by Dibb and Simkin(Dibb, 2001, p. 14):

Table 11:Marketing eras according to Dibb and Simkin

Era	The year	Title	Focus
1st	1850s –1920s	Product era	Mass production
2nd	1920s – 1950s	Sales era	Personal sales and advertising
3rd	1950s	Marketing era	Customer needs and desires began to be defined before the product was introduced to the market
4th	1990s onwards	Relationship Marketing era	Good relationships with existing clients

Source: Dibb & Simkin, 2001, p.14

Concerning Russian authors, we would like to highlight the fundamental and methodologically sound periodization by Professor Bagiev with co-authors. In the table of the book(Bagiev & Tarasevich, 2010, p. 27) the exact dates, theoretical bases, methods and spheres of application of marketing for each of the stages of evolution are given. Below is just a part of the table for reference, namely a description of each of the five stages and their brief characteristics.

Table 12: Marketing periodization according to Bagiev

Era	The year	Description	Areas of application
1st	1900s– 1950s	Marketing is seen as a field of applied economics, the practice of sales organization.	• Mass merchandise production • The agricultural sector
2nd	1960-s	Marketing is seen as one of the functions of an industrial enterprise. Various marketing concepts are emerging.	• Consumers of means of consumption
3rd	1970-s	Marketing is viewed through the lens of the use of marketing-mix tools and through the market concept of management.	• Consumers of means of production and consumption

4th	1980s to 1990s	Development of a general marketing management theory, market research methods, marketing decision-making methods and techniques.	• Consumers of means of production and consumption • Service sector • Profitless organisations
5th	1990s onwards	Development of marketing-management theory, improving the quality of goods and services.	To everything mentioned above adds: • The public enterprise sector

Source: Bagiev & Tarasevich, 2010, p.27)

Having analyzed the evolution of marketing theory, both Russian and foreign authors, Cherenkov writes: "the existing variants of marketing periodization have a number of imperfections that today cause difficulties for those mastering marketing theory"(Cherenkov, 2004, p. 14).

From our perspective, the stages of marketing development formulated and described by Kotler in several books(Kotler, Kartajaya, & Setiawan, 2010), (Kotler, Kartajaya, & Setiawan, 2017), (Kotler, Kartajaya, & Setiawan, 2021)reflect in the most detail the events leading up to each stage, the key marketing concepts, and how consumer behavior has changed over time. That is why we would like to examine it in more detail. It is important to note that the author does not specify exact dates for the beginning and end of each period; the dates given below are approximate, indicated by us based on numerous works we have read on the topic of the Evolution of Marketing Theory. We would venture to argue that Kotler's 'versions' of marketing are not simply periods or phases that have a definite beginning and end, but concepts of marketing thought development that overlap and form a solid theoretical basis for contemporary marketing practitioners. In other words, the ideas, and tools of past 'versions' of marketing can still be relevant to marketers today.

Marketing 1.0 is based on the evolutionary theory and practice of marketing in the first half of the 20th century and lasts until around the 1950s. This period falls at the height of the Industrial Revolution in the United States. The efficient production of goods was made possible using electricity, the ability to transport goods by rail, and the division of labor.

The evolution of marketing concepts shows how businesses "responded to changes in consumer characteristics and demand"(Keelson & Polytechnic, n.d., p. 173). High demand in the market during Marketing 1.0 forced firms to increase their ability to produce more products(Pride & Ferrell, 2019, p. 14).

For marketing 1.0, the dominant philosophy is that of production. Consequently, the key to this stage is the production concept. The main objective is to sell. The focus is on product characteristics. Companies are launching products into the mass consumption market, where material values dominate. Interaction with consumers takes place through a collective approach according to the principle of "one with many"(Kotler et al., 2010, p. 6).

Marketing 2.0 comes along with the development of communication and information technology in the 1950s and comes to its conclusion in the 1990s. A range of new products appeared, and hence consumer choice expanded significantly(Rajagopal, 2020, p. 13) Conveniently packaged goods began to be delivered in supermarkets. The key marketing concept of this period is differentiation. Companies began to produce products for more informed and driven by their thoughts and emotions consumers who compare and information about similar products and services. The focus of marketers has shifted to the positioning of the company and product, and the main objective has become customer satisfaction and retention. Now marketers have an individual approach to interacting with customers through advertising and personal sales(Keelson & Polytechnic, n.d., p. 175)The Internet has emerged.

Marketing 3.0 has been replacing marketing 2.0 since the early 2000s. The new wave of technology (cheap computers and the internet) allows for group communication, collaboration, and interaction between countries, corporations, and individuals around the world. As social media such as Facebook, YouTube, and media such as Wikipedia and Craiglist actively develop, consumers are beginning to influence other consumers by sharing their experiences and opinions(Kotler et al., 2010, p. 7).

Another driving force behind Marketing 3.0 is globalization. Globalisation is a process which is often understood to be (Scholte, 2007, p. 1473):

1. Internationalization – the growth of transactions and interconnectedness between countries.
2. Liberalization – the removal of restrictions (trade barriers, currency restrictions, capital controls, visa requirements) on the movement of resources between states to create an 'open' world economy.
3. Universalization – the process of dispersing different objects and 'experiences' or experiences: curry dinners: bungalows, tobacco, the Gregorian calendar. It is often implied that globalization entails "homogenization with the convergence of world culture"(Scholte, 2007, p. 1476).
4. Westernization – a particular type of universalization in which the social structures of Western modernism (capitalism, industrialism, rationalism, urbanism, etc.) spread across the world, obliterating pre-existing cultures and local identities.

There are many more definitions of globalization. In Scholte's view(Scholte, 2007)globalization implies a change in social space where people are now able to interact physically, legally, linguistically, culturally and psychologically with each other wherever they are.

Marketing 3.0 is making the transition to value-driven marketing, where marketers identify consumers' wants and anxieties to target their minds and hearts. The primary goal of companies is to make the world a better place. The emphasis by marketers is on the mission and vision of the company's values. Companies look at their consumers as people "whose needs and hopes should not be ignored"(Kotler et al., 2010, p. 27)Marketing 3.0 focuses on the consumer, becoming strategic, combining offline and online interaction between customers and businesses.

Marketing 4.0 was introduced by the author in 2017. Further development of technology led to the transition to the next stage of marketing development in the 2010s, which forces businesses to become more flexible and adapt to changing market, social, and technological changes. The most important value in the "information transparency on the web" becomes the authenticity of the company(Wereda & Woźniak, 2019, p. 3). The focus of marketers focuses on

content promotion and brand building, and the main goal is to inspire the customer to co-create the value of content, products, services.

Fuzio and Dumitrescu in their article on the transition from marketing 1.0 to marketing 4.0, write: "The business world must face the challenges of an interconnected world, were consumers can buy products and services from all over the world as well as they can gather information much quicker"(Fuciu & Dumitrescu, 2018, p. 48). A powerful driver of marketing 4.0 is the development of the digital economy.

Digitalization is "the use of digital technology to change the business model and provide opportunities for profit and value creation"(Abramova & Golovina, 2020, p. 28). Digital technologies are far from being a novelty. Over time, they are becoming more sophisticated and integrated, contributing to the transformation of the economy. Many developed countries are developing and presenting national programmes and strategies. Russia is also implementing the Digital Economy of the Russian Federation programme. Although there is no single and universally accepted notion of the digital economy, Presidential Decree No. 203 of 9 May 2017 "On the Strategy for the Development of Information Society in the Russian Federation for 2017 - 2030"(Russian Federation Presidential Decree of 09.05.2017, № 203," n.d.) provides a large definition of the digital economy. However, Keshelava et al. provide a more concise definition in their paper(Keshelava & Budanov, n.d., p. 12).

The digital economy is an economy characterised by the maximisation of the needs of all its participants through the use of information, including personal information. The main goals and directions of digitalization programmes among leading countries are usually(Abramova & Golovina, 2020, p. 18): (1) Information security, (2) Development of an information and communication framework, (3) Digital transformation in public administration, (4) Developing digital competences and skills. Marketing 4.0 represents a shift from traditional marketing to digital marketing that adapts to the changing customer journey in the digital economy.

Marketing 5.0 was introduced by Kotler in 2021. The author believes that the COVID-19 pandemic has accelerated the digitalization of business. The time has

come for companies to make greater use of advanced technology in their marketing strategies. Marketing 5.0 is "the application of human-mimicking technologies to create, communicate, deliver and enhance value throughout the consumer journey"(Kotler et al., 2021, p. 6). The technologies used in Marketing 5.0 include: AI (artificial intelligence), NLP (Natural Language Processing), sensor technologies, Robotic Marketer, AR (Augmented reality), VR (Virtual reality), IoT (Internet of Things), blockchain, chatbots, and 'big data', allowing marketers to personalize their marketing strategies for each consumer. The technologies themselves will be discussed in more detail in the following paragraph. Companies that are ready to adopt modern technology need marketers who can develop a strategy with the right technology choices for specific cases.

The goal of marketing 5.0 is to identify where machines, technology and people can make the biggest difference along the consumer journey. Technology will enable marketing to be data driven, predictive, contextual, augmented, agile. All these elements of marketing 5.0 are necessary to adapt to market changes.

Based on the above-mentioned stages of marketing development, it can be concluded that the main challenge for marketing today is to preserve traditional values while adapting to the new technological reality. The challenge for marketers is to merge the offline and online worlds by integrating modern technology. In this paragraph, we have also provided definitions of concepts such as globalization, digitalization, and the digital economy.

3.3 Technology implementation in marketing communications

The technologies discussed in this section are not new. For example, the development of artificial intelligence and natural language processing dates to the middle of the last century. We hear about these technologies so often for several reasons: the emergence of more powerful cheap computers and mobile devices, widespread use of the Internet, cloud computing and big data(Kotler et al., 2021, p. 89). There is no generally accepted concept of cloud computing in the literature. Complex and long definitions would be inappropriate in the context of our work. We have therefore found a clearer and simpler definition: Cloud computing is the

provision of computing services, services, storage, databases, software, analytics and intelligence over the Internet – the 'cloud'(“Cloud computing terms | Microsoft Azure,” n.d.).

Cloud computing plays a special role for businesses during the COVID-19 pandemic by allowing users to work remotely. There are different types of cloud computing: public cloud, private cloud, and hybrid cloud storage. Computing services are divided into three main groups: Infrastructure as a Service, Platform as a service, and Software as a service,(“Cloud computing terms | Microsoft Azure,” n.d.) which we will discuss in more detail in the next chapter.

Companies using cloud computing do not need to invest in expensive hardware and software and its maintenance because there are cloud providers in the market to whom this can be delegated. By using infrastructure, platforms, software from providers, companies can pay for the services they need for their purposes and goals. The cloud computing market is dominated by five major players in the field of artificial intelligence: Alibaba , Amazon, Google, Microsoft, IBM(Kotler et al., 2021, p. 92). Big data is large data sets that can be analyzed computationally to identify patterns, trends and associations, especially those related to human behavior and interaction(“Definition of Big Data,” n.d.).

As mentioned in the previous paragraph, modern technologies that can already be used in marketing today include artificial intelligence, natural language processing, sensor technology, Augmented Reality, Virtual Reality, the Internet of Things, and Blockchain. It is worth stressing that in our work we will consider these technologies through the prism of their impact on marketing, as well as the feasibility of their use.

Artificial intelligence (AI)

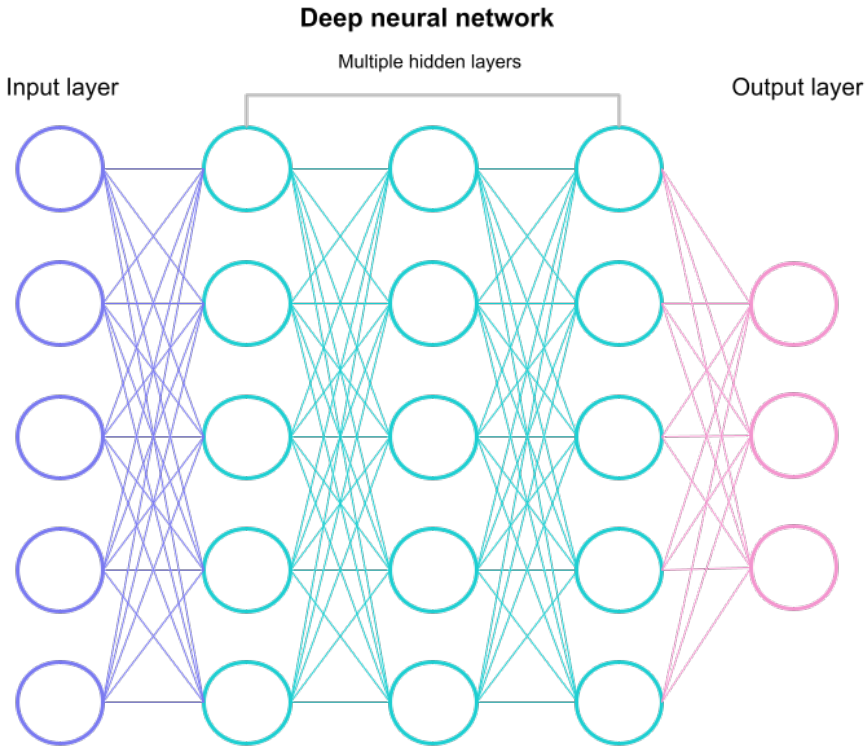
While technological innovations used to replace or facilitate human physical labor, today, with artificial intelligence, we can make decisions based on the analysis of large amounts of data. These decisions are sometimes superior to human decisions. For example, AI is able to automate the process of customer acquisition and competitor surveillance so that employees can focus on contacting new customers(Gentsch, 2019, p. 7). There are many definitions of AI in the foreign and

Russian literature. A recent paper on the potential use of artificial intelligence in marketing provides the following definition(De Bruyn, Viswanathan, Beh, Brock, & von Wangenheim, 2020, p. 3).

Artificial intelligence (AI) is machines that mimic human intelligence in tasks such as learning, planning and problem solving by autonomously generating higher-level knowledge. This formulation avoids the philosophical debate about whether machines can be intelligent and limits the definition of AI by highlighting three areas of application. Today, machines learn to perform only well-defined, specific, limited tasks. For example: playing chess, recognizing faces, predicting the likelihood that a website visitor will click a link to an advertising banner. Algorithms that achieve this result are called "weak/narrow AI" because the machines cannot learn anything beyond the narrow domain in which they have been programmed to operate (De Bruyn et al., 2020, p. 2). There is also the concept of Strong AI or Artificial General Intelligence (AGI). In theory, any cognitive activity can be learned. So, machines can be programmed to "learn to learn". But if we consider AGI as the ultimate goal, then today's achievements can only be described as small steps in this direction. In other words, there is still a long way to go before Hollywood screenplays in which authors try to answer, among other things, ethical questions about the use of AI in various spheres of human life.

The key role of AI applications in marketing is played by artificial neural networks, as well as by AI's deep learning capability. An artificial neural network (ANN) is part of a computer system designed to mimic the way the human brain analyses and processes information(Frankenfield, n.d.). Information passes through the ANN in two cases: when the ANN is being trained or is operating in normal mode. Information flows through the input layer into the network through the input blocks that trigger the hidden block layers, then arrives in the output layer (Fig. 1). Here and throughout the text, the figures have been compiled by the author.

Figure 1: Artificial neural network



Source: Compiled by the author

The term 'deep learning' refers to the number of hidden layers in a neural network. A neural network with more than three layers can be considered a deep learning algorithm. Modern applications contain dozens of hidden layers, allowing ANNs to learn extremely complex relationships between data (“What are Neural Networks?,” 2021). Many modern research papers on machine learning refer to the definition of the famous American scientist Tom Mitchell, which was formulated as early as 1997(Mitchell, 1997, p. 2): Machine learning - a computer program learns from experience (E) on some tasks (T) and a performance measure (P) if its performance on tasks (T), as measured by (P), improves with experience (E).

In this master thesis we will look at three main ways of learning ANN: 1) learning with a teacher, 2) learning without a teacher, and 3) reinforcement learning.

Supervised learning is a type of machine learning where, in addition to the available data set, the correct possible answers are already known. It is designed to identify relationships between input and output data and is often used for classification and

regression analysis. Prediction is a key focus in teacher-assisted learning(Gentsch, 2019, p. 32). Predicting the price of a course, for example, based on its duration, would be an example of a regression problem. If instead we predict whether a course will cost more or less than a certain price depending on its duration, this would be a categorization, where the course would be assigned to two different categories depending on the price.

Teacherless learning is a method in which the machine's training dataset contains only input variables and the output variables are either undefined or unknown(Ma & Sun, 2020, p. 4). The system independently identifies patterns in the dataset, then forms clusters or combines the data. This learning method can be used, for example, to segment customers or the market according to certain characteristics.

Reinforcement learning is a type of machine learning in which the machine receives feedback from the outside world (the environment) or from some of its own neurons. In marketing, this type of ANN learning can be used, for example, to develop an opinion on which offer to show. The reaction to the suggestion is a reinforcement for the machine(Sterne, 2017, p. 87).

In marketing, artificial intelligence can analyze certain patterns of behavior. Different types of ANNs can be effective in identifying patterns in prediction. We have made Table 13 to understand the main types of ANNs.

Table 13: Types of neural networks

Name of the ANN	Description	Application
Multilayer perceptron neural network (Multiplayer perception neural network)	The simplest form of neural network with direct data transfer, which consists of several layers of neurons, where each computational unit is directly connected to the neurons of the subsequent layer. Multilayer perceptrons are a universal prediction model(De Bruyn et al., 2020, p. 3) A perceptron is a mathematical or computer model of how the brain perceives information(“Perceptron,” 2020).	Used for pattern recognition and classification: • Customer loyalty assessment(Ansari & Riasi, 2016) • Predicting customer churn(Ismail, Awang, Rahman, & Makhtar, 2015)

Convolutional neural network	This is a deep learning neural network that contains at least one convolutional layer. The peculiarity of such an ANN lies in its ability to detect patterns in the data regardless of their location(De Bruyn et al., 2020, p. 3).	• Image recognition • Processing of natural language • Time series analysis • Recognising behavioural patterns, to predict customer churn
Recurrent neural network and long short memory network	RNS is a kind of deep learning network in which the output of each hidden layer of neurons returns to itself, which allows the network to retain memory(Ma & Sun, 2020, p. 6). But while a simple recurrent network has problems in processing long-term dependencies, a long-short-term memory has no such problem. DKP is successful in processing sequential data.	• Voice recognition • Sequence generation (voice, text, music) • Text translation • Behavior prediction of online shoppers

Source: Table compiled by the author

From the above, we can conclude that the main task of AI is to interpret and structure information from large amounts of data. Current work on the study and potential uses of neural networks shows that there are many applications of AI in marketing.

Natural language processing

Machines can analyze and reproducing human language, both written and spoken. Natural language processing (NLP) is an area of AI that involves the process of translating natural language into data that a computer can use to form knowledge about the world(Lane, Howard, & Hapke, 2019, p. 4).

A natural language is any language that has developed naturally in humans through use and repetition without conscious planning or intentionality(“Natural language,” 2021). NLP is an area of research that studies the analysis and synthesis of natural languages. Thus, artificial intelligence can understand and generate text to some extent. A natural language processing system is often referred to as a pipeline system because it involves several processing steps. There are many applications of natural language processing. The authors of the book titled "Natural language processing in action" in the first chapter give examples of practical applications of NLP(Lane et al., 2019, p. 8)(Table 14).

Table 14: Directions and applications of NLP technology

Destination	Application		
Search	Web	Documents	Autofill
Editing	Spelling	Grammar	Style
Dialogue	Chatbots	Assistants	Timetabling
Writing	Index	Compliance	Table of contents
Email	Spam filter	Classification	Prioritisation
Text analysis	Outline	Extracting knowledge	Medical tests
Law	Legal opinion	Seeking precedent	Classification of subpoenas
News	Event detection	Fact-checking	Making the headline
Authored by	Plagiarism detection	Literary expertise	Training in style
Mood analysis	Public opinion monitoring	Sorting product reviews	Customer service
Predicting behaviour	Finance	Election forecasting	Marketing
Creative writing	Film scripts	Poetry	Song lyrics

Source: Lane et al., 2019, p. 8

From Table 14, we see that NLP has many applications beyond marketing. In our work, we feel it should be noted that NLP helps to process a lot of language data to optimize marketing channels. We would like to highlight the following use cases for NLP in digital marketing(“6 Ways Natural Language Processing Can Level Up Your Digital Marketing,” 2020):

1. Receiving and qualifying leads (potential customers), improving customer service

In classifying leads, the process of evaluating potential customers based on their willingness, desire, and ability to buy a product or service takes place. Natural language text processing makes it possible to analyze potential customers' queries and information about website visitors. Chatbots play an important role in lead qualification as they can do this during a dialogue, instantly passing information to the sales team to generate hot offers and take other action.

A chatbot is a program that imitates written or spoken language to talk, correspond, and interact with a real person. Back in 1966, Joseph Weitzenbaum developed a computer program called "ELIZA", which demonstrated the possibilities of communication between a person and a computer using natural language(Irel & Writer, 2012). At the time, the program as a psychotherapist was not particularly successful. ELIZA worked based on a structured vocabulary and searched for key words in the entered text. Today, chatbots are becoming more widespread and their capabilities are much wider, thanks to artificial intelligence. AI-enabled chatbots are capable of self-learning based on large amounts of data, recognizing and automatically using question and answer patterns(Gentsch, 2019, p. 85).

Magenta Telekom, which launched a digital transformation project aimed at improving the customer experience, is an example of a chatbot implementation(“Magenta Telekom Success Story | LivePerson,” n.d.) The company has offered an alternative to voice calls and email communication, suggesting that customers contact customer support via WhatsApp and web messaging for faster and more comfortable communication. The company's contact centers handle a five-figure number of customer queries via messaging each week. Simple and repetitive queries, such as "inquire about order status", are handled by bots, while employees can focus on more complex customer queries. Another company goal was to reduce outgoing e-mail. Magneta Telekom's decision to implement artificial intelligence-based messaging in its contact centers has significantly improved business efficiency.

2. Sentiment analysis

Another area of practical application of NLP is changing attitudes about brands. User opinions posted on social media often relate to the services and products of specific companies and brands. For any brand, it is important to know exactly what consumers think about it and what content resonates with audiences and is most effective. In combination with chatbots, social media listening can provide a more complete picture of brand sentiment.

Social media listening (social media monitoring) is a process that identifies, analyses and evaluates the content of social media discussions about companies,

products, services, brands, or individuals online(Gentsch, 2019, p. 162). Social listening in general allows you to find positive, negative, or neutral terms that people use to describe themselves. Analyses of overall consumer sentiment and attitudes can help both in planning and in maintaining and building good brand perception.

An example of the effectiveness of social listening can be seen in a study conducted back in 2015 on Thai airlines(*2nd International Conference on Knowledge Engineering and Applications (ICKEA)*., 2017, p. 106). The use of social media listening techniques allowed the tracking of daily changing mentions of airline brands or services depending on promotional fares or published news. Most conversations were divided by the researchers into four main types: question, complaint, mention, and compliment. The proposed methodology in the researchers' work shows significant benefits for airlines in improving service quality.

3. Reaching the audience using language-enabled devices

Digital personal assistants, also called "virtual" or "intelligent" personal assistants, voice, or conversational "agents", have their origins in the first handheld computers, which were designed to store various information, like contacts and calendars, and perform simple tasks: sending messages, calculations. Such personal assistants include Psion's the Organizer, IBM Simon, Nokia 9000 the Communicator. Today, assistants such as Google Assistant, Apple Siri, Microsoft Cortana, Amazon Alexa, or Alice can perform tasks such as accepting user input from the virtual keyboard of a touchscreen, processing voice or handwritten messages. They also answer user queries in natural language, play music, set reminders in calendars, and place orders in online shops. We will consider in more detail how digital assistants are already changing consumer behavior in the following paragraphs(Lopatovska et al., 2019, p. 2). Potential consumers who use their voice-activated devices to search the Internet are an audience that can be targeted through NLP. By capturing specific keywords from audio conversations, it is possible to determine which ads or context match interests, needs and stage of the buying cycle.

In this section we have looked at the possible uses of NLP in marketing, identifying specific technologies and giving examples of use. We will write about the following

technologies in less detail, as their impact on marketing is less pronounced, and in most cases depends directly on the sharing of AI.

Sensor Tech

In addition to voice and text analysis, machines can also recognize images and faces. Image recognition is a set of algorithms capable of detecting patterns at the pixel level of the images being analyzed. AI needs large amounts of data to learn to recognize all possible elements of images, photos, and video content. Over time, machines can improve the accuracy and speed of identifying patterns. We have already written about machine learning in the section on training artificial neural networks. Manganese recognition of objects on millions of images is only possible after training AI on billions of photos(“AI Image Recognition Is Changing Marketing Forever,” n.d.).

Facial recognition gives birth to the next trend - emotion recognition. "MARS Marketing conducted a market research study that monitored the emotions on consumers' faces while viewing advertisements to determine whether emotional state could be used to predict the likelihood of purchasing products. They found that emotional state complements subjects' self-reported purchase intentions, which increases predictive power(“AI Case Study MARS Marketing,” n.d.).

Tesco in the UK uses robots that take pictures of products on shelves and analyse the images to identify shortages and misalignment. In this way, the company encourages consumers to buy more by properly shelving retail products(January 2015, n.d.).

Extended Reality

Augmented reality (AR) – combines the real world and the digital world by superimposing digital objects or information on the real world.

Virtual reality (VR) offers a fully immersive experience. The user enters a simulated reality, a computer-generated environment, disconnected from the real world with a special headset or glasses.

Mixed Reality (MR) lies between these two types of reality and creates a hybrid reality where digital and real objects can interact with each other. For example, the user can move or manipulate virtual elements(Marr, 2021, p. 15).

All three technologies listed above are referred to in the literature of recent years as Augmented Reality (XR). With XR, potential consumers can: (1) See and virtually try out and experience the product before you buy it. (2) Get a new way to personalize products. (3) To have new experiences.

In 2020, ASOS introduced an AR feature on its website that allows you to see models in the brand's clothing while protecting real employees during the COVID-19 pandemic. With 'See My Fit', shoppers can better assess the size, fit, and fit of clothing by trying on the same garment on multiple models of different heights and sizes(“ASOS Is Using AR Technology To Fit Models During Coronavirus,” n.d.).

The Austrian company Red Bull has the largest market share of any energy drink in the world and is also known for sponsoring sporting events and athletes themselves. Gamers are no exception. Red Bull has teamed up with professional gamer Tyler "Ninja" Blevins, known for streaming games such as Halo and Fortnite. Thanks to an AR lens activated by pressing a button on Red Bull's website, fans could take a picture with Ninja at home and enter a raffle to win a gaming session with the star(Facebook, Twitter, & LinkedIn, 2019).

The Internet of Things

The Internet of Things is a global system of IP-connected computer networks, sensors, actuators, machines and devices that connect the physical world with the virtual world of the Internet(Gong, 2016, p. 1). The Internet of Things (IoT) has experienced tremendous development and growth over the past few years. Devices and sensors connected through the IoT are generating huge amounts of data every day that can be used, particularly in marketing. We already mentioned big data at the beginning of the paragraph. "Thing" in the IoT can refer to any device to which an IP address is assigned(Khan, Khan, & Zomaya, 2020, p. 2). With the help of the Internet of Things, it is possible (Taylor, Reilly, & Wren, 2020):

1. Obtain data from devices that can be useful for marketing purposes.
2. Analyzes data from devices. For example, geolocation data can be analyzed by district and region and combined with geographic socio-economic data sets to produce data by socio-economic groups.
3. Create a new channel of communication with the consumer. IoT devices are often controlled or monitored using an app on a smartphone that can be provided by the manufacturer. This provides a potential communication channel between the company and the device owner.
4. The data collected from IoT-enabled devices is used to analyze usage patterns of devices in general and different consumer groups, which can be used to optimize the design of new products.

Robotics

It is an interdisciplinary field, combining computer science and engineering(“Robotics—Wikipedia,” n.d.). When talking about robots, we often imagine the applications they can find in industry. However, robots are also capable of replacing humans in nursing homes, as Soft-bank's robot Pepper helps in nursing homes. Nestle, for example, uses robots to make, serve and sell coffee. The hotel service is also beginning to use robots: the Hilton Hotel in Virginia piloted Connie, a robotic concierge(“Introducing Connie, Hilton’s new robot concierge,” n.d.)and a robot chef prepares omelets at the Studio M Hotel in Singapore(“Incredible omelette-making robot at S’pore hotel goes ridiculously viral worldwide,” n.d.).

In addition to robots modelled on humans, robotics also offers virtual robots. A major trend in the field today is robot process automation (RPA), which replaces manual data entry and processing. Companies use this technology when they need to automate a repetitive process with a high volume of work which has no room for error. RPA is used for E-Mail newsletters and content distribution via other communication channels, in general for managing and evaluating marketing campaigns. In today's literature, this is referred to as marketing automation (Marketing Automation). Marketing automation can be used in the following ways(“What is marketing automation and how can you use it?,” n.d.): Content

marketing, PPC Advertising (pay-per-click), Lead management, Evaluation of advertising campaigns.

Blockchain

Blockchain, literally translated, is a chain of blocks. Each block contains information. Blockchain technology is a special type of database that cannot be easily broken. A database is an ordered set of structured information or data, usually stored electronically in a computer system(“What is a database?,” n.d.).

Blockchain enables decentralization through distributed ledger technology, whereby transactions are permanently digitized and made publicly available without the need for any central authority(Hassani, Huang, & Silva, 2020, p. 24). This is possible thanks to serverless P2P (peer-to-peer) network technology, where no third party is required to perform transaction verification. Each cell in the database, referred to as a "block", records one or more specific transactions. Each new block is added to all the previous ones, forming a chain: the blockchain(Jordan, 2019, p. 72). Blockchain is undoubtedly a difficult technology to understand and requires a much longer explanation. For the purposes of our paper, we will focus on how blockchain can affect marketing. Because blockchain involves transparency, security and immutability, the technology can be used, for example, in smart contracts, supply chain management and financial reporting. In marketing, blockchain can be used for(Harvey, Moorman, & Castillo Toledo, 2018): (1) Reducing transaction costs, (2) Ending the advertising duopoly between Google and Facebook, (3) Fighting marketing fraud and spam, (4) Renovation of media consumption.

Marketers pay third parties to obtain information about potential consumers. Blockchain allows the use of micropayments to motivate consumers to share personal information directly, without intermediaries. This is also possible through "smart contracts" (virtual agreements that eliminate the need for confirmation and verification) activated by users, such as when they sign up for an email newsletter. Micropayments go directly into users' wallets when they interact with advertisements. We would also like to mention Robotic Marketer, which is the world's first marketing strategy software based on AI, machine learning and big data(“About Us—Marketing Strategy Technology,” n.d.).

3.4 Interim Conclusion Chapter 3

Looking at different approaches to defining marketing, we distinguished notions of 'digital marketing', 'internet marketing' or 'online marketing', 'email marketing' and 'marketing communications': Internet marketing (online marketing) is only part of digital marketing because it involves the use of the Internet, whereas digital marketing may exclude it. Electronic marketing (E-Marketing), on the other hand, uses exclusively the media available through the Internet.

As no unified concept of "digital marketing" has been identified in either Russian or foreign literature, the author's definition was given based on the studied material: *Digital marketing* is a set of processes to facilitate marketing activities using digital communication channels and digital technologies to attract and retain consumers.

There is also no unified understanding of the concept of integrated marketing communications in literature, so we have formulated our own definition: *Integrated marketing communications* is the use of complementary communications that are integrated with other marketing tools to achieve their maximum effectiveness.

Based on the academic literature and the study of available sources, we saw the need to define the differences between 'digital marketing' and 'digital advertising', which are often synonymous in the academic literature: (1) Advertising is only part of marketing; hence, digital advertising is a digital marketing tool. (2) Digital advertising is a short-term activity, whereas digital marketing is a process. (3) Digital advertising makes the brand visible, while digital marketing develops the brand. (4) Digital marketing has many tools and techniques, unlike digital advertising.

Based on the stages ('versions') of marketing by F. Kotler and the periodization by various authors reviewed, we have concluded that the main challenge for marketing today is the desire to preserve traditional values while adapting to the new technological reality. The challenge for marketers is to unite the offline and online worlds by integrating modern technology and using it to improve communication with consumers. Technologies such as artificial intelligence, natural language processing, internet of things, big data, sensor technology, augmented reality, virtual reality, blockchain, chatbots and their possible implementation in marketing were

examined and described, with examples of research and company experiences. We conclude that all these technologies have a direct or indirect impact on marketing activities in the digital economy. The first chapter also highlights the importance and significance of chatbots as a new form of communication with consumers in today's world, where the use of the internet and social media has become an integral part of our lives.

4 The digital communications market in Russia and Austria

This chapter describes digitalization as a process, explaining the main drivers of digital transformation. Chapter 4 provides relevant statistics and shows how consumer behavior has changed due to the global pandemic. The chatbot is described as a marketing communication tool. The statistics on the use of this technology in different fields is presented. Examples of successful applications of chatbots are given. Chapter 4 also provides statistics on the use of chatbots in Russia and Austria.

4.1 Changes in the digital economy and their impact on marketing communications

In paragraph 3.2 we examined the evolution of marketing, which shows at what point digitalization began to actively influence our lives and what events preceded it. With each passing year, digitalization is increasingly penetrating the economy, changing traditional structures and business models. The digital economy has affected marketing and advertising, the effectiveness of previous methods of promotion of companies has diminished, and new forms have emerged.

For a long time, the word 'digitalization' was used to refer to the digitization of something or the digital storage of data. In Section 3.2, we have already given a precise definition of digitalization and the digital economy. Broadly speaking, digitalization refers to the process of integrating digital technologies into all aspects of human life, business, and production.

At the microeconomic level, the digital transformation of marketing affects all aspects of marketing activities, from product or service formation and pricing to promotion and distribution. At the macroeconomic level, digital marketing transformation and the consequent marketing strategies affect national market competitiveness, innovation, antitrust, labor markets, taxation, and other factors. The UNCTAD World Investment Report 2019(United Nations Conference on Trade and Development, 2019)states that in 1992, internet data flow was around 100

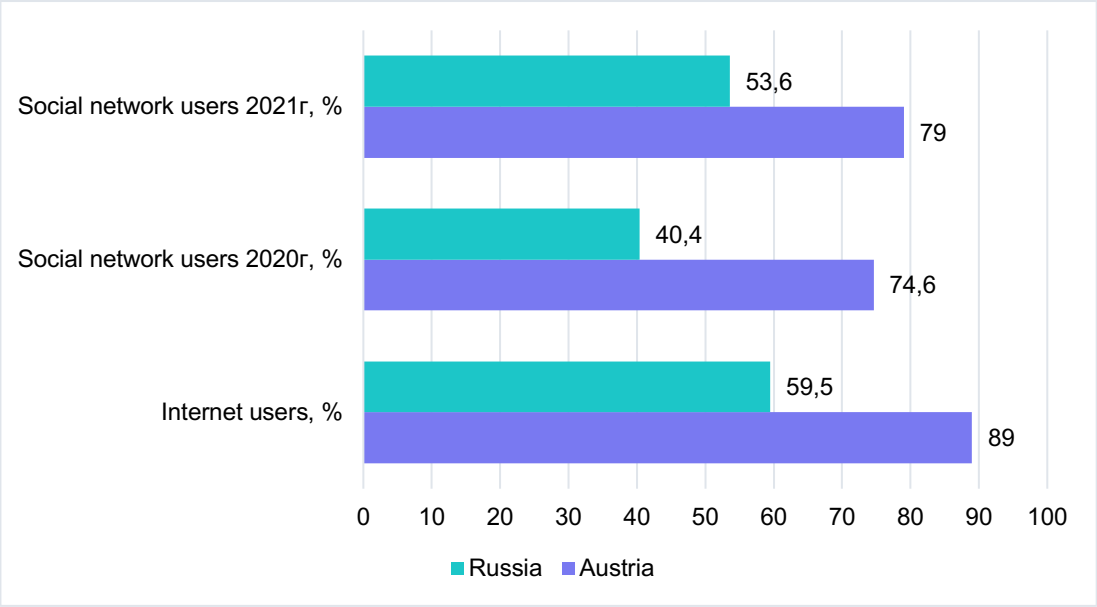
gigabytes per day, and in 2022, this flow is projected to be around 150,700 gigabytes per second. Digital Commerce 360 estimates that consumers around the world will spend nearly $4.29 trillion online in 2020, attributing this behavior to the COVID-19 pandemic, up from nearly $3.46 trillion the previous year(Young & 2021, n.d.).

Digitalization is a process that affects all industries, differing only in pace and scope. Digital players are fundamentally changing the face of all industries. A different mix of production factors is displacing and disrupting traditional legacy structures and traditional business models. The big digital players today are Apple, Microsoft, Google, Facebook. Ignoring digital technology runs the risk of withdrawing from the market. Kodak's once top brand management refused to take digital realities seriously. In 1975, creative developers introduced the world's first digital camera. But management halted the project for fear of threats to the highly profitable film business. Competitors from Japan overtook Kodak in 1980. The advantage was squandered, and although the company also began to produce digital cameras after a while, Kodak went bankrupt, losing its market value, which had once reached $35 billion. Today, we can see companies such as: "Uber" – the world's largest taxi service that does not own vehicles; "Facebook" – the world's most popular media company that does not create content; "Airbnb" – the world's largest home search service that does not own real estate. Digitalization has had an impact on familiar approaches to doing business, and thus on marketing and advertising in particular(“The Battle Is For The Customer Interface,” n.d.). In his study, Gillpatrick identifies the following key drivers of digital change(Gillpatrick, 2019, p. 142): (1) Impact of new communication technologies, industrial infrastructure, transport. (2) The development of new forms of competition that have evolved to offer consumers better value. (3) Changing consumer preferences.

The use of the internet, mobile apps and other digital means of communication has become the norm for us today. Based on data collected from authoritative sources(“DataReportal – Global Digital Insights,” 2021)Figure 2 shows that as of January 2021, of Austria's population of 9.2 million, 89% use the internet, 79% are active users of social media, an increase of 4.4% compared to the data as of January 2020. Figure 3 shows that, on average, Austrians aged 16 to 64 spend 5 hours and 46 minutes online, of which 1 hour and 22 minutes is spent on social

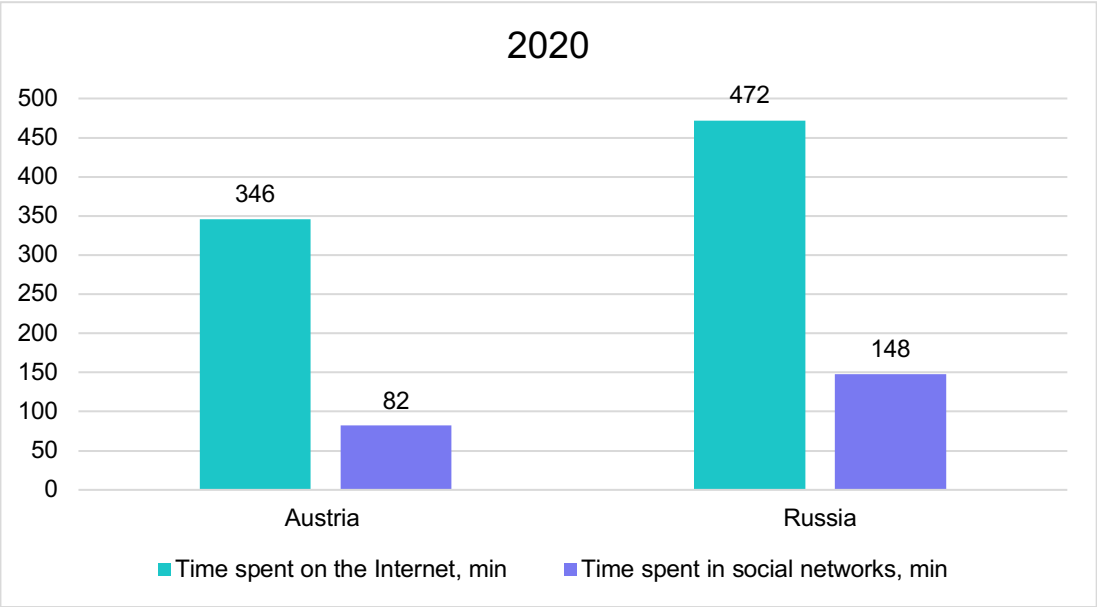
media. In comparison, of the Russian Federation's population of 159.9 million, 59.5% use the internet and 53.6% are active social media users, an increase of 13.2% since January 2020. On average, Russians aged 16 to 64 spend 7 hours and 52 minutes online, of which 2 hours and 28 minutes are spent on social networks.

Figure 2: Use of the internet and social networks



Source: Data Reportal – Global Digital Insights, 2021

Figure 3: Average time spent on the internet and social networks



Source: Data Reportal – Global Digital Insights, 2021

There are 5 main ways of examining consumer behavior(Stephen, 2016, p. 18) and how it is changing in the digital age, each of which answers specific questions, some of which are outlined: (1) Digital consumer culture: What is the modern consumer? What does it mean to be a consumer in today's digital world? (2) Advertising: how do consumers respond to different types of digital advertising? (3) Digital environment: How does the digital social media environment affect consumer behavior? (4) Mobile devices: how is consumer behavior changing when using mobile devices? (5) Online reviews and electronic "word of mouth" or "electronic Word of Mouth" (eWoM): How are reviews and their different formulations perceived online? How is WoM different from eWoM?

eWoM is one of the most debated topics in the scientific literature. Kitzman and Kanyoto stress that eWoM "refers to any statement based on positive, neutral or negative experiences from potential, actual or former consumers about a product, service, brand or company that is made available to multiple people and institutions over the Internet" (Kietzmann & Canhoto, 2013, p. 147) The importance of eWoM lies in its connection to viral marketing, for which it is important to understand what motivates people to share their consumer experiences.

When talking about consumer behavior, it is impossible not to mention how it has changed during the worldwide pandemic of COVID-19(Asian Business School, 2020). Many consumers (1) are changing products and brands, (2) switch to cheaper goods as a cost-saving measure, (3) buy online and less in shops, (4) use the internet to find real value, (5) become more health-conscious, (6) affected by social media. So, it can be concluded that the development of the digital economy has not only affected marketing, but also consumer behavior. The global pandemic has accelerated the adoption and forced the use of digital technologies in our lives. Modern technologies in turn improve marketing communications in several ways(Kotler et al., 2021, p. 11):

1. Marketing decision-making based on big data analysis.

All potential consumer's online activities can be recorded, from what they type into a search bar, to the transactions they make and time they spend viewing an email. These large amounts of data can be analyzed and used for marketing purposes with

users' permission. An example is Netflix (a subscription-based streaming service), which allows you to watch TV series and movies. The company analyses user data based on which the Netflix platform makes recommendations according to the preferences of its subscribers. This not only regulates what content is delivered to the servers, but also keeps customers connected and engaged. According to Netflix, more than 75% of viewer activity is based on personal recommendations(“How Netflix used big data and analytics to generate billions,” 2019).

2. Adapting to real-time conditions.

Dynamic pricing has its origins in the transport industry. About forty years ago, American Airlines introduced fares based on predicted availability and passenger demand. Today, companies like Uber, Lyft, and Yandex analyze their data in real time. Depending on the time of day, the area of the city and drivers' offers, users see different fares. In essence, it is no different from what American Airlines did, only today, big data processing is possible thanks to artificial intelligence(Synced, 2019).

3. Delegating routine tasks to machines

In the first chapter we already wrote about the benefits of chatbots. AI combined with NLP technology can improve productivity and optimize the customer experience, for example by taking over the handling of the most frequently asked questions. AI-enabled chatbots can be useful in hotel services. They are being integrated into hotel websites, social media platforms and used in standalone mobile apps. Hotel chatbots can send text messages to guests, book rooms and answer questions around the clock, thereby improving customer interaction. Already today, hotels such as The Cosmopolitan in Las Vegas, Aloft Hotels, The Four Seasons and AccorHotels use chatbots(Petro, n.d.).

4.2 Chatbot as a digital marketing communication tool

Effective communication with consumers is an essential component of a successful business. Marketing communications help companies engage with their target

audiences to achieve their business goals. Over the past few years, digital marketing communications have been inextricably linked to social media.

Chatbot is a communication channel that shifts the focus away from social media as it can integrate into different platforms. Although there are many different definitions in the literature, essentially a chatbot is software that simulates a conversation or chat with a user in natural language through messaging applications, mobile applications, websites, or phones. In paragraph 3.3, when we touched on natural language processing, we already wrote about the first computer program that could communicate with humans in natural language. Since then, the demand for bots and other messaging systems has grown steadily. We see three main positive aspects of using chatbots: (1) Reduced stress: The hotline may be open at certain hours, calls can be charged, can take a long time due to waiting and queues. (2) Instant response: An email response from a company can often take several weeks. Chatbot replies instantly. (3) Extended service: chatbots are available 24 hours a day and free of charge.

The importance of the quality of chatbot services has been highlighted in the international literature. Perceived usefulness and perceived helpfulness have been found to play a key role in determining the use and attitude towards chatbots. Perceived usefulness corresponds to improved consumer efficiency and productivity. Perceived helpfulness, in turn, is determined by the extent to which the consumer considers the chatbots' responses to be relevant to the problem(Van den Broeck, Zarouali, & Poels, 2019, p. 151). There are 5 main types of chatbots(“The 6 types of chatbots—Which one do you need?,” n.d.):

Menu/button-based chatbots

Such bots are hierarchies of decision trees, which are displayed as buttons. The user must make a choice in several steps to get the final answer. Such a chatbot cannot handle complex requests involving complex scenarios with many variables, but it can relieve the customer service by answering the most frequently asked questions. Compared to all the others, this type of chatbot is the slowest in terms of bringing the user to the desired result. Rule based Chatbot. The choice of this type of chatbot will be justified if the types of questions that a potential user can ask are

predictable. Communication with such a chatbot will be based on the logic known to all software developers: "If/Than". Language conditions can be prescribed, for example, for word order and evaluation. If the user's query meets the conditions defined by the chatbot, the output will be instantly displayed.

Chatbots that recognize keywords

Chat bots based on keyword recognition can 'listen' to the user by responding accordingly. Customizable keywords as well as NLP technology play a key role in such a bot's ability to generate a response. If keywords are redundant, such a chatbot loses its effectiveness, especially if it must respond to many similar queries. Bots are particularly popular these days, allowing the user to ask their questions and use the menu buttons as well, if necessary.

Chatbots with machine learning

For these chatbots, context is important. AI and machine learning technology allow bots to remember conversations with specific users, using that information to learn. For example, such a bot can remember what you like to order, as well as your payment information and delivery address, so that next time you don't have to waste time entering this data. Automating routine tasks and improving the overall user experience are the main objectives the company is pursuing by implementing such a chatbot.

Voice assistants

To better imitate real dialogue, companies use voice chatbots capable of handling natural language. It is sometimes easier for a user to say than to type text. Each of the types presented above has its pros and cons. In the context of our work, it makes sense to divide all chatbots into two categories: chatbots with and without artificial intelligence support.

Chatbots without AI support

The unambiguous advantages of chatbots without AI support are(Joshi, n.d.): (1) Ease of creation and learning; (2) Low implementation costs; (3) The answers are

always known and prescribed; (4) Guaranteed self-service customer service; (5) Possibility of transferring the dialogue to a real human agent; (6) To provide solutions, such bots do not need much time to gather and analyze consumer problems. Such bots have limitations that companies may face when implementing them: any task, from simple to complex, requires rules to be prescribed; the inability to work offline; inability to personalize communication; over time, such bots become difficult to maintain.

AI driven chatbots

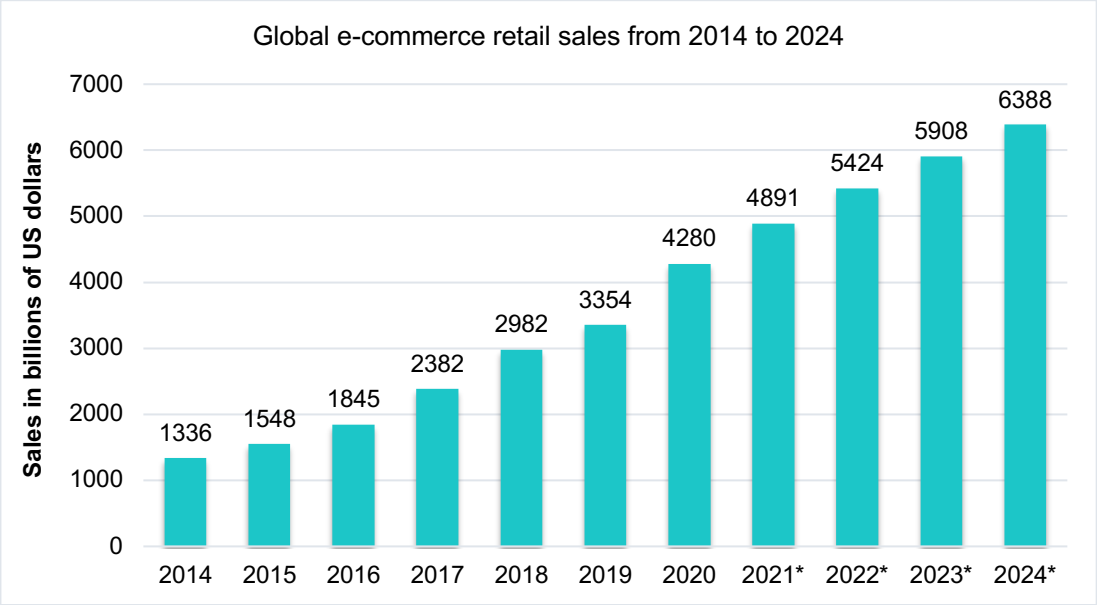
The advantages of AI-enabled chatbots include cost savings for the company in the long run; self-learning capability; personalization of communication; adaptation to users' emotions and moods; 24/7 unsupervised service. It is important to note that AI can make a chatbot smart, but the machine cannot understand the context of human interactions. For example, in a conversation with a child, a human would use simpler sentences and words. The machine communicates with everyone in the same way, regardless of gender or age. Self-learning can also cause some problems, as it depends entirely on the quality of the data provided. AI is fueled by big data. In 2016, Microsoft launched the chatbot Tay, which only 16 hours into its launch on Twitter began posting provocative and offensive tweets(“Users taught Microsoft’s chatbot about racism in just one day,” n.d.).

An analysis of the advantages and disadvantages of bots can help companies decide which chatbot is worth implementing, based on industry, budget, marketing objectives, communication channels already in place, and focus (B2B/B2C). Already today, chatbots are used in areas such as(“Chatbot Applications,” n.d.):

1. E-commerce

Global e-commerce retail sales were $4.28 trillion in 2020 (Figure 4) and e-commerce revenues are projected to grow to $5.4 trillion in 2022(“Global retail e-commerce market size 2014-2023,” n.d.).

Figure 4: E-commerce retail sales volume



Source: Global retail e-commerce market size 2014-2023

With this growth, communication via email, phone and social media can be difficult. Customer service automation is becoming a necessary steppingstone for companies on the path to growth and scalability. Chatbots in e-commerce increase conversions, provide cross-platform performance, and can serve an international audience. Swiss company “On” makes high-end sports shoes. Founded in 2010 in Zurich, the startup already has 4,000 shops in more than 50 countries in 2021. On the official website, users can interact with the bot by asking a question or selecting suggested button choices(“Schweizer Performance Laufschuhe & Bekleidung,” n.d.).

2. Banking sector

Chatbots reduce banks' operating costs and increase productivity in processing requests. Today, bank customers can transfer funds, authenticate, make transactions, and exchange details through their mobile phones. These bots are available 24 hours a day, 7 days a week, thereby improving customer interaction with banks. Chatbots for banks can also be a great source of information about customers and their queries, based on which future marketing decisions can be made. This, in turn, leads to optimization of company resources and reduced

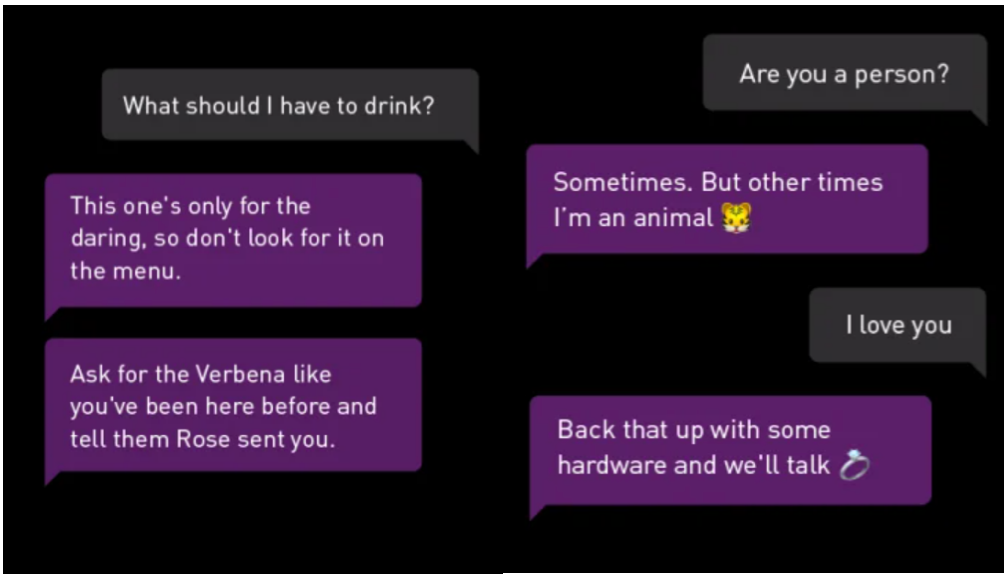
transaction times. Regulatory compliance and security are a key factor for the adoption of technology in the banking industry. Bank of America's Erica Virtual Financial Assistant sends notifications to customers, updates credit reports, provides necessary information, provides tips on saving money, and helps make simple transactions and pay bills.(“Meet Erica, Your Financial Digital Assistant From Bank of America,” n.d.).

3. Hospitality sector

Based on cloud technology, chatbots can not only reduce the time spent on frequently asked questions, but also analyze data in real time. For example, booking and reserving rooms followed by payment, providing information on local bars, restaurants. The bot can advertise various services: massages, spas, room service. Gathering feedback and recommendations for service improvement is also much easier with chatbots, as this minimizes the amount of time to complete a suggested form or feedback model for the user, and increases the company's social visibility, for example on Google or Facebook.

In January 2017, the Cosmopolitan of Las Vegas introduced Rose,(“Meet Rose, Our Digital Concierge | The Cosmopolitan,” n.d.)AI-enabled chatbot that serves guests via text messages. Mamie Pearce, director of digital commerce at the hotel's conference called the bot "a VIP host with a witty personality."(“The Cosmopolitan of Las Vegas’ Chatbot Wants to Get Intimate With Guests,” 2017)Hotel guests can text Rose to get a tour or recommendations for the hotel's bars and restaurants, order extra pillows or food delivered to the room, even play games, make reservations or spa treatments. Pierce added that Rose has developed a voice and can communicate on 1,000 conversational topics. At the reception desk, all guests are invited to meet Rose (Figure 5) and ask her anything they like(“Rose, the Hotel Chatbot | Work,” n.d.):

Figure 5: Chatbot Rose from the Cosmopolitan Hotel in Las Vegas



Source: Cosmopolitan Hotel in Las Vegas Website

The global chatbot market will grow from $2.9 billion in 2020 to $10.5 billion by 2026 at a compound annual growth rate (CAGR) of 23.5% during the forecast period(“Global Chatbot Market (2020 to 2026)—Rise in Demand for AI-Based Chatbots to Deliver Enhanced Customer Experience Presents Opportunities,” n.d.). According to a Juniper study, the introduction of chatbots will save 2.5 billion customer service hours in the coming years. The reduction in customer service costs in the retail, banking and: healthcare sectors will be US$11 billion per year by 2023(“Chatbots to Deliver $11bn in Annual Cost Savings for Retail, Banking & Healthcare Sectors by 2023,” n.d.).

4.3 Analysis of the use of chatbots in Russia and Austria

The programme for the development of artificial intelligence in Russia.

Until October 2019, Russia was among the few major countries that did not have its own strategy for the development of artificial intelligence at the time. On 10 October 2019, the President of the Russian Federation issued a decree "On the Development of Artificial Intelligence in Russia"(“Decree of the President of the Russian Federation of 10.10.2019 No. 490 · Official publication of legal acts · Official internet portal of legal information,” n.d.) and approved the "National Strategy for Artificial Intelligence Development until 2030 in the Russian Federation", which

highlighted important areas for AI implementation in Russia: NLP, Computer vision**,** Recommender systems and intelligent decision support systems**,** Speech recognition and synthesis**,** Emerging AI methods and technologies.

Russian financial conglomerate Sberbank has brought together developers to create a strategy. Together with Sberbank, companies such as Yandex, Gazprom Neft, Mail.ru(“Sberbank to bring together developers of artificial intelligence strategy,” n.d.). The strategy for AI development in the Russian Federation defines nationally specific priorities:

- Accelerating the technological development of the Russian Federation, increasing the number of organizations engaged in technological innovation to 50% of their total number.
- Ensuring accelerated implementation of digital technologies in the economy and social sphere.
- Creation of a highly productive export-oriented sector in the basic sectors of the economy, primarily in manufacturing and agribusiness, developed based on modern technology and with a highly skilled workforce.
- Creating a comprehensive system for regulating social relations.

The strategy for the development of AI in the Russian Federation also defines and prescribes some principles: security, transparency, technological sovereignty, protection of human rights and freedoms, reasonable thrift, and the integrity of the innovation cycle.

According to IDC Worldwide Artificial Intelligence Spending Guide, the AI market in Russia exceeded USD 290 million in 2020(“Russia’s AI market size exceeds $290 million in 2020,” n.d.). According to the same source, AI-assisted decision-making in commercial and government organizations grew by 22.4% year-on-year in 2019. Microsoft conducted a study in January 2019 involving 800 senior managers from companies in the US, Italy, France, Switzerland, Germany, the Netherlands, Russia, and the UK with more than 250 employees. The results showed that 30% of Russian companies are actively implementing AI, while the global average is 22.3%. This is the highest figure of the countries participating in the survey(“Russia is ahead of the

US and Europe in actively adopting artificial intelligence," 2019). There is also an AI Readiness Index, which gives an indication of the potential for AI development. Based on the 2020 report, Russia ranks 33rd and Austria 22nd. The top three countries are: USA, United Kingdom, Finland("Government AI Readiness Index 2020," n.d.).

Artificial Intelligence Programme in Austria

Since 2018, Austria has had a programme called Artificial Intelligence Mission Austria 2030, which defines the development and use of AI in all areas of life. The main goal of the programme is to promote the responsible and widespread use of AI in the public interest based on European fundamental values in Austria (respect for privacy, the principle of equality and the inviolability of human dignity).

The programme also emphasizes Austria's need to strive to preserve its sovereignty and reduce its dependence on market leaders and global monopolies. The programme also pursues the following objectives:

- Preventing, recognizing, mitigating adverse effects resulting from the application of AI
- Raising awareness and organizing social dialogues on how to deal with AI
- Promote research and position Austria as a leading location for AI research and innovation
- Promoting the introduction of AI applications in Austrian SMEs
- Creating new added value through the application of AI
- Establishment of a legal framework to ensure that the use of AI is safe for people and society, meeting the requirements of EU legislation

The programme has also identified priority areas("Austria AI Strategy Report | Knowledge for policy," n.d.): (1) Qualifications and training, Research and innovation, (2) AI in economics, (3) AI in the public sector, (4) Society, ethics and the labor market, (5) AI governance, security and legal aspects. Improving customer interaction through chatbots is one of the many applications of existing and potential AI capabilities. National AI programmes and their priorities point to a direct link to the development of chatbot technology in the future.

Application of chatbots in Russia and Austria

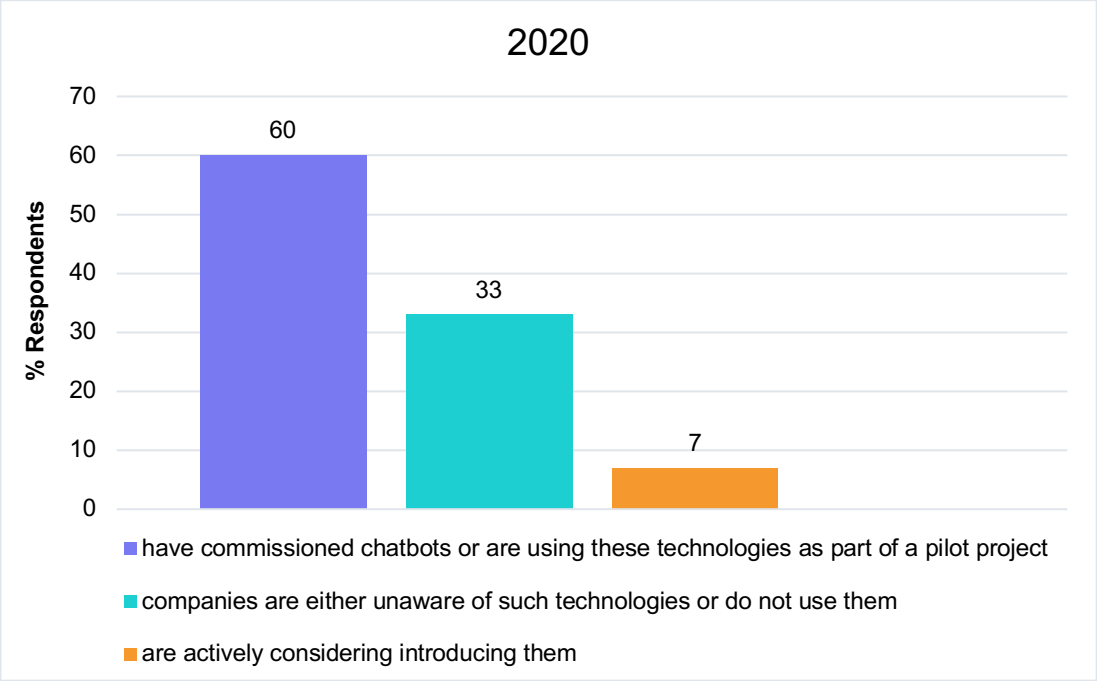
10% of Austrian businesses offer customer-responsive chatbots, but so far only 1% of Austrian businesses use AI-based chatbots. The EU average is 2%. Finland 6% and Malta 5% lead the EU in the use of AI-enabled chatbots (“Statistics Austria,” n.d.). Service businesses use chatbots particularly frequently, as can be seen in the graph below (Figure 6). One in ten Austrian businesses uses a chatbot as a means of communicating with customers.

Figure 6: The use of chatbots in Austria

Source: Statistics Austria

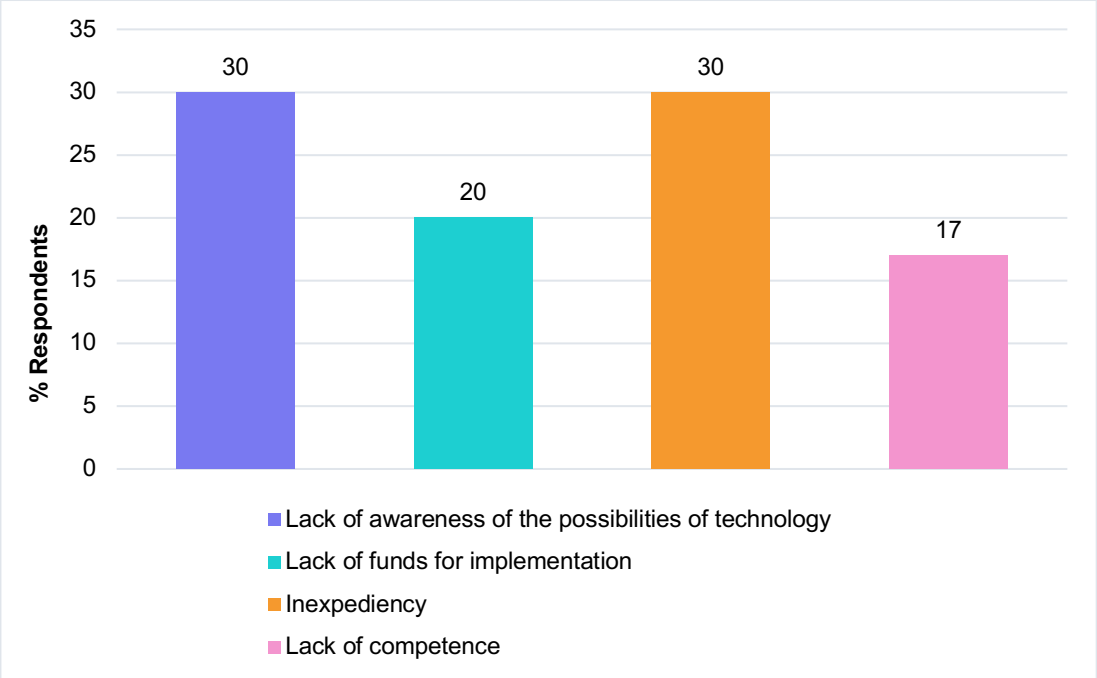
According to a study by Accenture,(“Self-isolation will accelerate the growth of the chatbot market | Accenture,” n.d.) which surveyed respondents representing more than 18 different industries in Russia, the chatbot market is expected to grow at an annual rate of 30% over the next three years. Based on the survey results (Figure 7), 60% of participants already use chatbots, 33% do not use chatbots or are unaware of the technology. And only 7% see chatbots as a possible channel of communication with their customers. For many companies, devoting resources to creating a chatbot seems impractical and not a priority. The study also cited reasons for not introducing chatbots (Figure 8).

Figure 7: The use of chatbots in Russia



Source: Accenture

Figure 8: Reasons why chatbots are not implemented

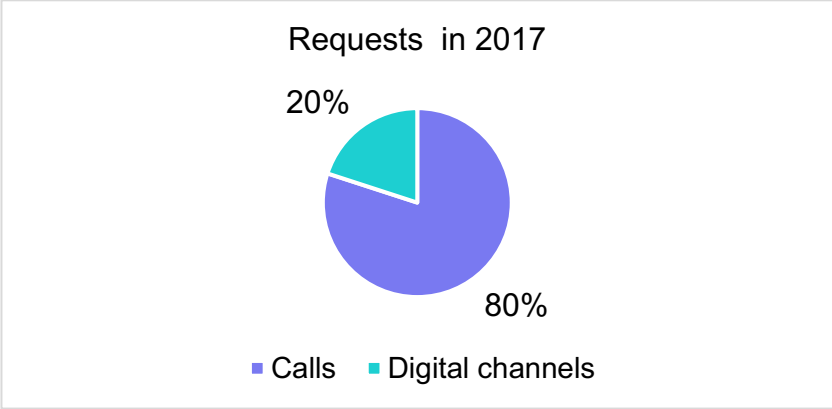


Source: Accenture

Unfortunately, the statistics available to us do not reflect the use of chatbots in Russia by industry. But based on the research mentioned above, the active adoption

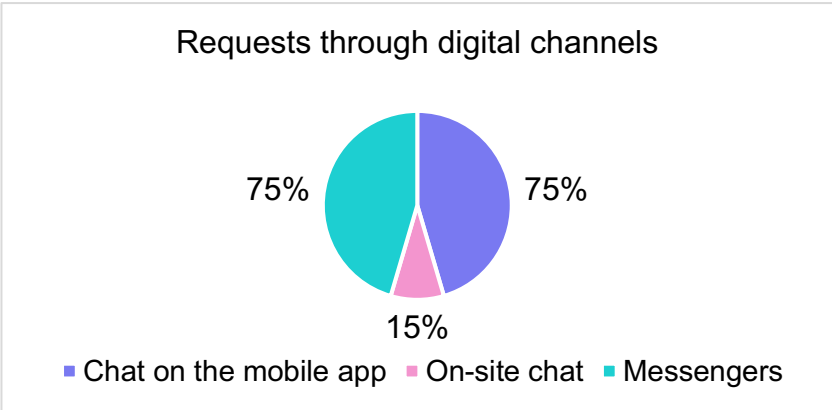
of chatbots in Russia is taking place in the retail and banking sectors. A prominent example of the use of chatbots in the banking sector in Russia is Tinkoff Bank, which focuses entirely on remote services and has no retail branches. The bank positions itself as an "online ecosystem that is based on financial and lifestyle services"(“Tinkoff Bank,” n.d.). The bank has 13 million customers across Russia, making it the third largest bank in the country. In addition to a voice assistant in the mobile app called Oleg, who can, for example, buy tickets, make a money transfer, or sign up for a beauty salon, Tinkoff has introduced a chatbot on its website, in its mobile app, as well as in Telegram. The results of the bot's implementation can be seen in the following figures 9 and 10:

Figure 9: Tinkoff Bank customer enquiries



Source: Webim.ru, Tinkoff Bank study

Figure 10: Customer applications Tinkoff Bank



Source: Webim.ru, Tinkoff Bank study

In the case of Tinkoff, the bot helped achieve two main goals: (1) Increase customer loyalty as they receive an instant response at any time of the day or night. (2) Reduce customer service costs. The bot offloads operators, allowing them to focus on more complex tasks. How the bot works at Tinkoff:

1. The user enters a query.
2. The bot "prompts" multiple choice questions in such a way that the client does not have to complete it themselves.
3. The chatbot then responds to the request or transfers the dialogue to an operator if it does not understand what it is being asked about.

At the time of the Webim study(Webim, n.d.) approximately 2/3 of the requests where the bot prompt was selected went through without operator involvement. Up to 400 operators handled requests from digital channels simultaneously. 25-30 thousand messages were received each day by Tinkoff Bank via digital channels.

We did not find as many striking and successful examples of chatbots in the Austrian banking sector. Austrian bank Hypo Tirol(AG, n.d.)offers a chatbot called Mihi, which is able to answer customers' questions about online banking, losing cards, opening accounts, finding branches, but is not able to conduct transactions or handle reference and document requests.

Another Austrian bank, Erste Bank(“Erste Bank – Das modernste Banking Österreichs | Erste Bank,” n.d.)offers the opportunity to talk to a real bank employee in a mobile app. Each account is assigned to a specific bank employee who responds as quickly as possible and only works during certain hours.

Today, chatbots are becoming popular in a wide variety of businesses, offering companies the opportunity to provide a better customer experience and increase their revenue(Baris, n.d., p. 19). Chatbots are very popular, but many companies are still unaware of or have only recently started using the technology. However, they will soon take over many tasks, depending on the application. The author has mentioned it in more detail in paragraph 4.2.

Interim Conclusion Chapter 4

The impact of digitalization on the macro- and micro-economy has been substantiated. It is proved that companies which do not adapt to the changes in time risk withdrawal from the market.

A comparative analysis of statistical data on Internet use and time spent on the Internet by Russian and Austrian population was conducted. As of January 2021, 89 percent of Austria's 9.2 million residents were online, while 79 percent were active users of social networks, up 4.4 percent from January 2020. On average, Austrians aged 16 to 64 spend 5 hours 46 minutes online, of which 1 hour 22 minutes is spent on social media. Of Russia's 159.9 million residents, 59.5% use the internet and 53.6% are active social media users, an increase of 13.2% since January 2020. On average, Russians aged 16 to 64 spend 7 hours and 52 minutes online, of which 2 hours and 28 minutes are spent on social networks.

A change in consumer behavior due to the COVID-19 pandemic has been proven. This has led to consequences in which consumers: (1) change products and brands; (2) switch to cheaper goods as a cost-saving measure; (3) buy online and less in shops; (4) use the internet to find real value, (5) become more health-conscious, (6) even more influenced by social media.

The global pandemic has also accelerated adoption and forced the use of digital technology in our lives. Modern technological developments have had an impact on marketing communications. Now: 1. Marketing decision-making is based on big data analysis. 2. Market conditions can be adapted to in real time. 3. Machines are delegated routine work.

Chatbot is a great tool for communicating with consumers. However, the technology has its limitations and people also need time to adapt and understand how to work with chatbots. For a company to succeed in using chatbots as its chosen marketing communication, it needs to monitor user behavior and constantly improve chatbots, making them clearer and more effective. We have described and characterized the main types of chatbots: (1) Menu or button-based chatbots; (2) Rule-based chatbots; (3) Chatbots that recognize keywords; (4) Chatbots with machine learning;

(5) Voice assistants. This chapter also identified the differences between chatbots with and without AI support, identifying the benefits of each category. The applications of chatbots are shown and examples of successful implementations in the e-commerce, banking and hospitality sectors are given.

A comparative analysis of the national AI development programmes of Russia entitled National Strategy for Artificial Intelligence Development until 2030 in the Russian Federation and Austria Artificial Intelligence Mission Austria 2030, which directly influence the implementation of digital technologies in different business sectors, was conducted. We also provided statistics on the use of chatbots in Russia and Austria, collected and analyzed statistical data on the use of chatbots in different industries. We have presented and compared examples of the implementation of chatbots in the banking sector in Russia and Austria. We concluded that the degree of adoption of this technology in the Russian banking sector is higher than in Austria.

5 Chatbot as a new marketing communication channel in the hotel industry: case study of Hotel das Sieben, Austria

This chapter gave an overview of Hotel das Sieben and presented an analysis of the webpage. Recommendations for the design and implementation of a chatbot were given. The different platforms offering the creation of chatbots as a service in Austria were analyzed. Chapter 5 also provides relevant statistics for Austria and Russia on the use of the different communication platforms.

5.1 Development of recommendations for the implementation of a chatbot on the Das Sieben Hotel website

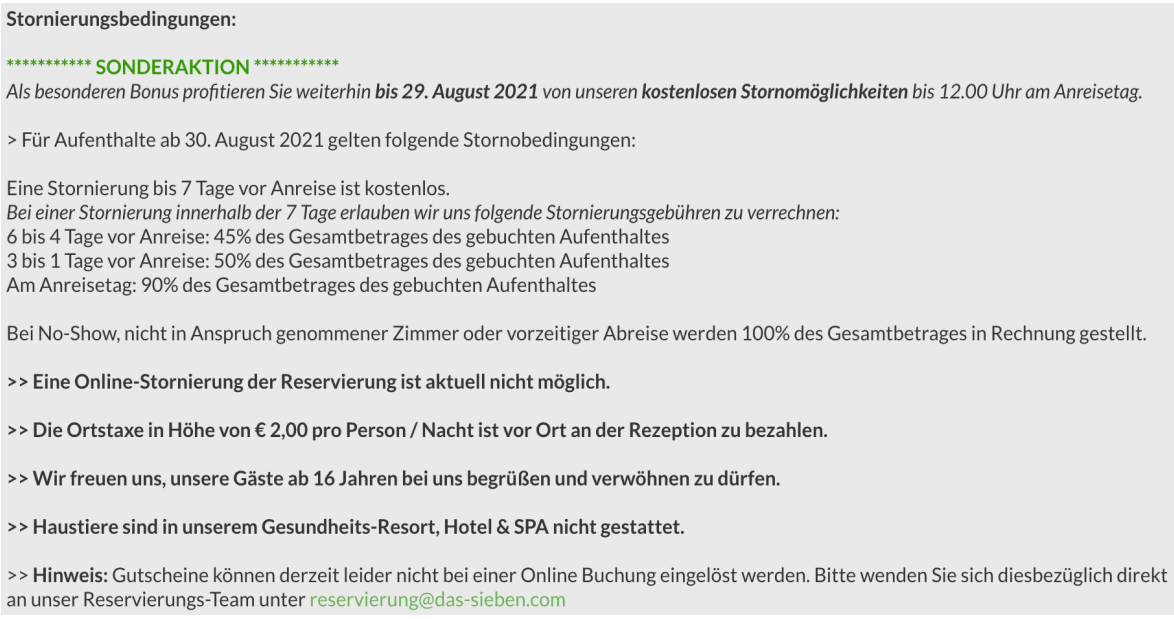
The spa hotel Das Sieben is based in the mountains of the federal state of Tyrol, in the picturesque town of Bad Häring. The four-star hotel can offer its guests a large spa area with steam baths and infrared cabins, an indoor pool, a heated outdoor pool which is open all year round, a fitness center and a restaurant. The simple rooms have a balcony with mountain views, a flat-screen TV with satellite channels, a refrigerator, a tea/coffee maker, a seating area and a bathroom with bathrobes and slippers. The hotel has a 24-hour front desk. Private underground parking is available free of charge. There are many cycling and hiking trails nearby. The hotel has received the highest ratings from travelling couples. The hotel positions itself not only as a place for relaxation but also as a place for regeneration, offering various programmes including massages and wellness treatments under the guidance of qualified staff. The hotel also hosts meetings and conferences. Videos can be viewed on the website, and a virtual tour of the hotel can be taken using the 360° camera function. The Hotel das Sieben is also present on platforms such as Instagram and Facebook.

You can book a room on the website. The hotel is also featured on Booking. In 2021, das Sieben operates under its own COVID-19 regulations. The website has information on what you need to do before checking into the hotel, as well as what rules you need to follow while on the property. Information on hotel rules in relation

to pandemics is the only link to the FAQs on the website. Other information about cancellations, permitted age of guests, special offers, separately levied taxes, pets and other information can be found at the booking link. We analyzed the hotel's website from the user's point of view, putting ourselves in the shoes of a potential guest. The analysis of the website was done according to the following points: (1) Pop-ups; (2) Special offers and promotions; (3) Availability of frequently asked questions; (4) Forms of communication and availability of chatbots, (5) Links to social media, (6) Booking page.

Pop-ups: the website has pop-ups that only ask for permission to use cookies. The homepage is not set up to generate leads through a discount or newsletter subscription. *Special offers and promotions:* the only special offer on the website relate to free cancellation, which appears as plain text in small italics on the booking page. We think this information should either be placed on the homepage as a persuasive element in a pop-up window, or on the booking page, but visibly designed.

Figure 11: Text in the booking section



Stornierungsbedingungen:

********** SONDERAKTION **********
*Als besonderen Bonus profitieren Sie weiterhin **bis 29. August 2021** von unseren **kostenlosen Stornomöglichkeiten** bis 12.00 Uhr am Anreisetag.*

> Für Aufenthalte ab 30. August 2021 gelten folgende Stornobedingungen:

Eine Stornierung bis 7 Tage vor Anreise ist kostenlos.
Bei einer Stornierung innerhalb der 7 Tage erlauben wir uns folgende Stornierungsgebühren zu verrechnen:
6 bis 4 Tage vor Anreise: 45% des Gesamtbetrages des gebuchten Aufenthaltes
3 bis 1 Tage vor Anreise: 50% des Gesamtbetrages des gebuchten Aufenthaltes
Am Anreisetag: 90% des Gesamtbetrages des gebuchten Aufenthaltes

Bei No-Show, nicht in Anspruch genommener Zimmer oder vorzeitiger Abreise werden 100% des Gesamtbetrages in Rechnung gestellt.

>> Eine Online-Stornierung der Reservierung ist aktuell nicht möglich.

>> Die Ortstaxe in Höhe von € 2,00 pro Person / Nacht ist vor Ort an der Rezeption zu bezahlen.

>> Wir freuen uns, unsere Gäste ab 16 Jahren bei uns begrüßen und verwöhnen zu dürfen.

>> Haustiere sind in unserem Gesundheits-Resort, Hotel & SPA nicht gestattet.

>> **Hinweis:** Gutscheine können derzeit leider nicht bei einer Online Buchung eingelöst werden. Bitte wenden Sie sich diesbezüglich direkt an unser Reservierungs-Team unter reservierung@das-sieben.com

Source: Das Sieben Hotel Website

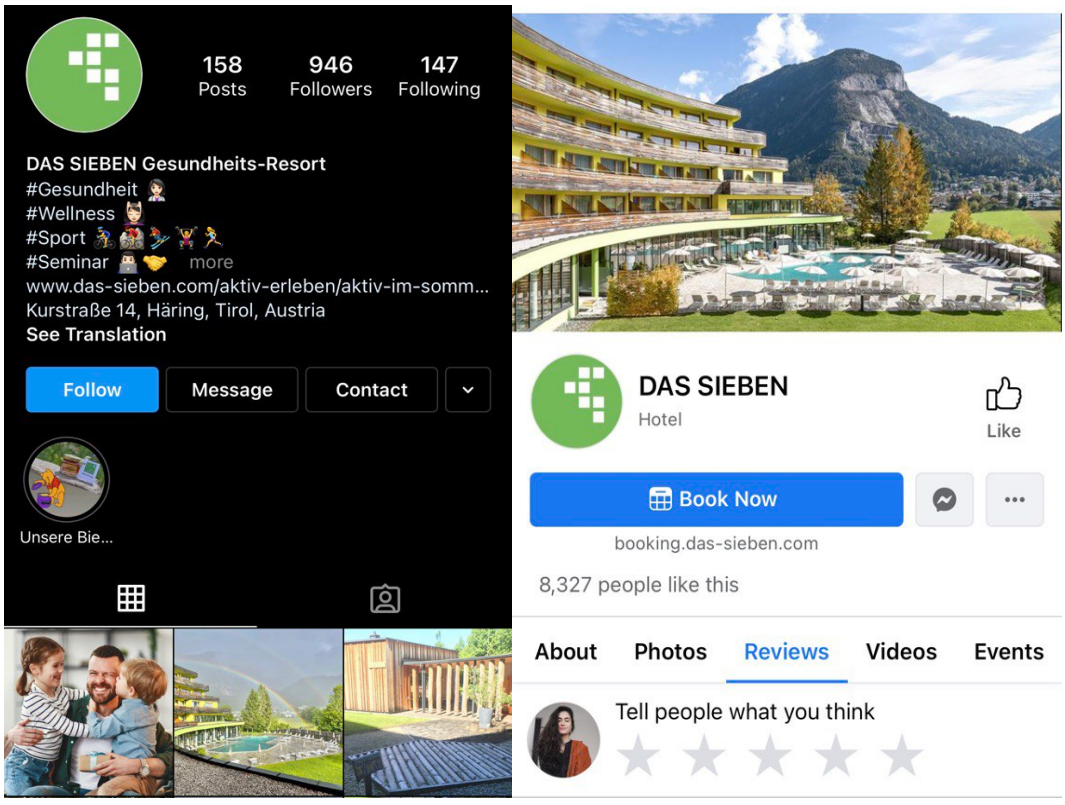
The booking page is overloaded with text with information that could have been placed in the hotel section of the website, as well as in the 'Frequently Asked

Questions' section. For example: extra tax and how to pay for it, the age of guests allowed, pets allowed, what is not included in the room price, cancellation of the booking (fig. 11). *Availability of frequently asked questions:* here we see the biggest drawback of the website, as having such a section can reduce the workload of hotel staff, who are only contacted by phone and email. *Forms of communication and availability of chatbots:* the website does not provide the opportunity to ask questions in real time, either to a bot or to a person.

Links to social media

The website includes links to the hotel's social media sites such as Facebook and Instagram, which are difficult to spot on the page due to the grey elements. Social networks cannot boast of reviews and positive comments (Figure 12).

Figure 12: Instagram and Facebook of the Das Sieben Hotel



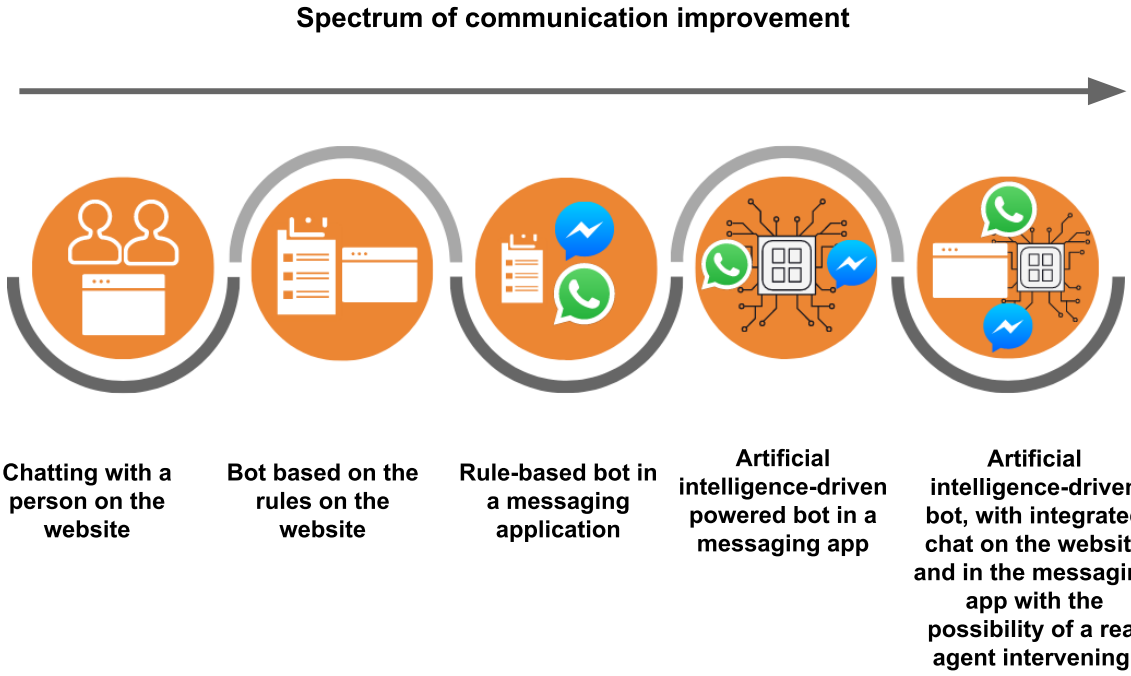
Source: Instagram & Facebook accounts of the Das Sieben Hotel

1. Potential guests would like to know more about some of the nuances of staying at the Hotel das Sieben before proceeding to the booking section.

2. Even if there was a 'frequently asked questions' section of the website, users do not always reach this tab.
   Some potential guests might find it easier and quicker to get the information they need in real time from a chatbot than to call or email the hotel and wait for a reply.
3. By using chatbots, you can avoid distracting staff from solving more complex problems.
4. Information from the chatbot is available 24/7 and there is no need to be on hold listening to music on the phone line or waiting for an email response.
5. The chatbot can also save data from user requests to improve communication with users in the future. Data analysis from chatbots is much easier to analyze than phone calls and emails.
6. If the bot cannot find and recognize all the keywords from the user's query, it can ask a clarifying question. If it answers positively, it will send the planned answer, and if it does not, it will offer to redirect the question to a real person.
7. Digital translators are getting better every day, by integrating them into the chat room, the bot will be able to automatically translate responses into the user's native language.
8. If the user is in doubt about whether to book a hotel, depending on the time spent on the website, the bot can send them a special offer.

It is possible to optimize communication with potential guests by using a new communication channel integrated into the hotel website. The chatbot can solve the above problems by answering frequently asked questions instead of the hotel staff. In paragraph 4.2 we described the different types of bots and how they work. If we look at the variety of messaging with a bot, we can see a scale of communication improvement (Figure 13)(“Why Chatbots Are the Future of Marketing: The Battle of the Bots,” n.d.):

Figure 13: A scale to improve communication with the chatbot



Source: Compiled by author

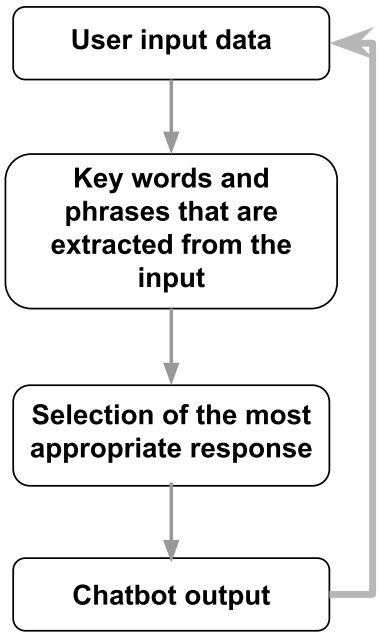
From our point of view, a rule-based bot is suitable for the above tasks and problems that a potential guest of the Das Sieben Hotel may encounter. This choice is because the types of questions a potential user can ask are quite predictable. We will write about how to create such a chatbot in detail in the next paragraph.

The decision to implement a rules-based chatbot will enable potential guests to process and respond to enquiries without the need for hotel staff 24/7 without interruption, thereby reducing staff costs and increasing the efficiency of communication with consumers. According to IBM, chatbots can help reduce customer service costs by 30%(“How chatbots can help reduce customer service costs by 30%,” 2017).

By communication, we often mean interacting with people. Many hotels think that communication should only take place through actual agents, while one study by Business Insider states that(“Consumers Are Abandoning Traditional Customer Service Channels,” n.d.): (1) 45% of consumers don't care whether they interact with a live agent or a chatbot. Consumers care about efficiency, accuracy of response

and speed of processing their questions; (2) 59% of consumers would rather use additional channels to communicate with the helpdesk than use their voice to communicate; (3) 33% of all consumers and 52% of millennials would like all their customer service needs met through automated channels. It turns out that introducing a chatbot into a hotel can be mutually beneficial for both the hotel and the potential guest. ReviewPro found that hotels waste valuable resources answering repetitive questions, or simply don't have time to answer guests(“ReviewPro (Shiji) launches innovative Guest Experience Automation™,” 2020): 63% of the letters/messages were received from the same 8 issues (network of 30 hotels); 91% of the emails/messages were related to the same 18 questions (network of 800+ hotels). Figure 14 shows the process of communication between a person and a chatbot of the selected type.

Figure 14: Communication with the chatbot



Source: Compiled by author

We didn't bring up the topic of frequently asked questions by chance, as this is the database from which the chatbot can work. First you need to survey the hotel staff for frequently asked questions by phone and email and record the desired answers to each of them, and then create a database of keywords. The machine compares the keywords from the user's query with the database and sends the appropriate

response in natural language. Answer options in the form of prompts can be given to the user to choose from so that the chatbot can steer the dialogue in the right direction. A guided dialogue allows the user not to think about the question they want to ask, but simply select the option they are interested in from those offered by the bot. If a client asks for something but the bot is missing some keywords, the bot can simply ask the user if they meant it, and if the answer is yes, the appropriate answer will be given, if not, the bot will be shown another message. Below we give a small example of what a database (Table 8) could be like with specific keywords and pre-defined answers:

Table 15: Database example for a chatbot

Request	Keywords	Answers
What are the conditions for cancelling a reservation?	Cancellation, reservation	We will be pleased if you let us know in advance if you want to cancel your reservation. Free cancellation is possible until 12 noon on the day of arrival. This offer is valid until 29 August 2021. In case of cancellation or early departure, 100% of the total amount will be charged.
Does the price include tax?	price, tax	The room price already includes tax, but a local tax of €2 on arrival is payable at reception on the day of arrival.
Do you have WiFi in your rooms?	WiFi, room	High-speed internet is available in all our rooms and in the main lobby. You can check in to use the WiFi immediately after checking into your room.

Source: Compiled by the author

Instead of creating the database and programming the chatbot yourself, it is possible to contact a company that can provide such a service and provide service and further development of the bot. We will write about such companies present in Austria in the next paragraph.

5.2 Chatbot platforms and their comparison

There are many companies on the market today that provide software as a service (Software as a Service/SaaS). SaaS companies host the application and make it

available to customers over the Internet(“What is a SaaS Company? | Digital Guardian,” n.d.). SaaS companies have solutions for customers who need help in areas such as: Customer resource management (CRM), enterprise resource planning (ERP), project management, accounting and billing, project management, web hosting and e-commerce, human resource management, and data management. Installing software on site is far less efficient than using a centrally managed company application. In this way, customers of SaaS companies enjoy the following benefits:

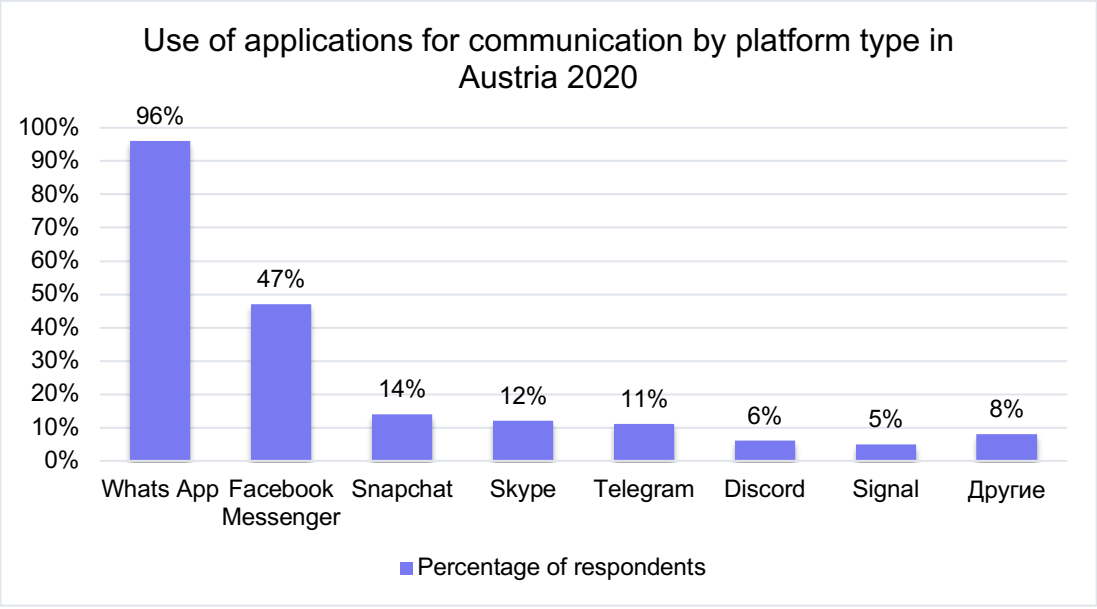
1. Cost savings. Most companies offer the possibility to subscribe to the service, so customers have low initial costs.
2. Scalability. A subscription-based service allows you to expand functionality, increase capacity, and add users without having to purchase hardware or install new software.
3. Mobility. Systems from such companies can be accessed from virtually any device. This is especially important for those employees who are not permanently based in a central office if there is one.
4. Cost-free updates. The software is supported and updated by SaaS companies' resources.
5. IT expertise. System security and reliability and investing in IT is the responsibility of the company.

Companies try to make their services and applications as simple and straightforward for users as possible, but there are some nuances that must be faced when selecting a quality service. Before purchasing a product from a software-as-a-service company, the following questions need to be asked: What happens to the data when you stop being a customer of the company? How well does customer support work? Does the company offer reliable system protection and support? Are there any hidden fees and what exactly is and is not included in your subscription? Is the app compatible with your platform and does it work on all required devices and browsers? An important aspect of working with such services is training. For any software, it takes some time to learn how to use it. Once the ideal solution to a company's problem has been found and the service has been selected, it is important to make sure that the necessary team members are involved in the

training process, which will allow the tool (chatbot) to be introduced into the customer communication system.

Communication apps have become part of our lives with the advent of smartphones. Many companies offer to integrate chat not only on the companies' website, but also in messengers. A presence on a consumer-friendly platform can be a great competitive advantage. One important factor in the development of chatbots as a means of communication between brands and consumers is the popularity of communication apps such as Telegram, WhatsApp, and Facebook Messenger, which people use every day. Today, with the help of such apps, we can also deliver useful content, serve customers, and sell products. According to Datareportal("DataReportal – Global Digital Insights," n.d.)Austria has a population of 9.02 million people, of which 7.21 million use social media. The annual growth of users is 4.4%. In Russia, there are 145.9 million people of whom 99 million are active users of social networks. The annual growth of users is 5.1%, which is approximately 4.8 million. In Austria, the most used applications for communication in 2020 according to Statista("Social media usage by platform type in Austria 2020," n.d.)are (Figure 15):

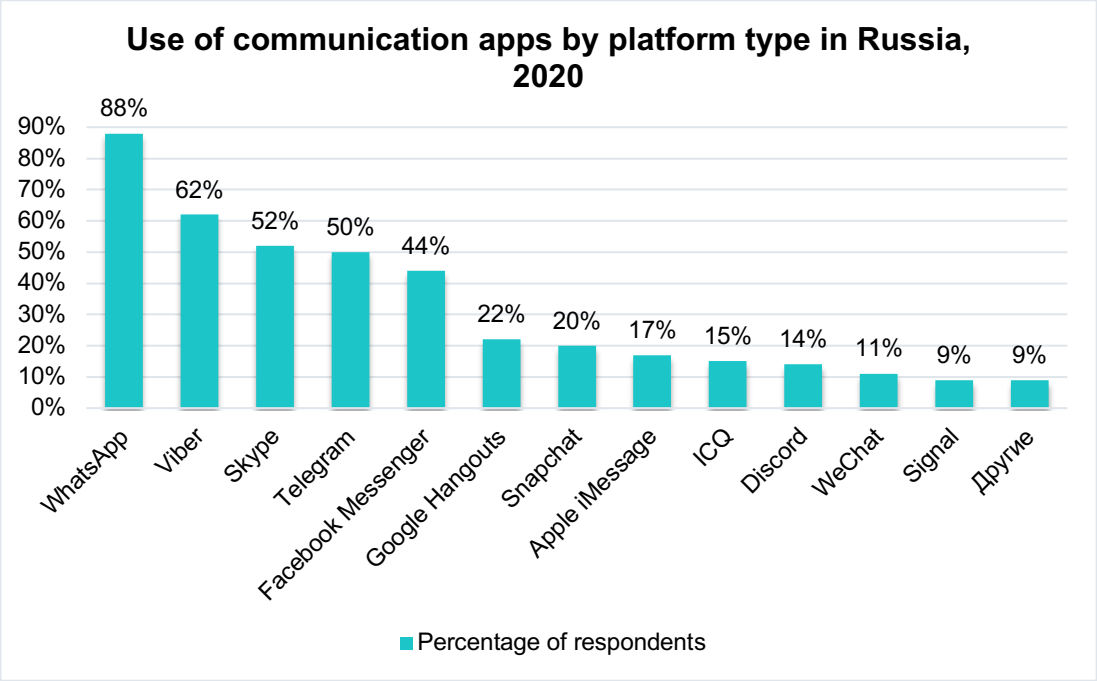
Figure 15: Popularity of communication platforms in Austria



Source: Statista

In Russia, the most used communication apps in 2020 according to Deloitte(“Media consumption in Russia 2020 | Deloitte, CIS | High Technology, Telecommunications, Entertainment & Media,” n.d.)are (Figure 16):

Figure 16: Popularity of communication platforms in Russia



Source: Statista

We have chosen three suitable companies Assono, Akoa, Botsify, which provide the possibility of integrating a chatbot at least into the hotel website. Each of them has its own characteristics, positives, and negatives.

Assono is a chatbot in German with artificial intelligence and an individual speech style. The company develops chatbots that are easy to manage and linguistically adaptable to the target group. According to Assono representatives, this approach "makes customer service scalable and future-proof"(“Für Unternehmen: Chatbot auf Deutsch, mit Künstlicher Intelligenz und individuellem Sprachstil – assono,” n.d.). In addition to the standard features that every chatbot has, Assono can offer users: (1) Personalized design and speech style. Assono dialog developers create the bot's communication style and adapt it to the company's design; (2) Targeted conversation. The chatbot is not only capable of responding to requests, but can also save information, facilitate lead generation, set appointments, and address the

dialogue to a real person; (3) Integrating a chatbot into messengers; (4) Support for several foreign languages; (5) Full control over collected data from chatbots and statistics; (6) Chatbots can be used in accordance with the General Data Protection Regulation (GDPR). The last point is particularly important from our point of view because users can download their chat history via the menu, conversation histories can be deleted. The chatbot can also be used anonymously. Assono also offers a programme to work with its customers which consists of the following steps:

1. Requirement's analysis. Development of a vision for the chatbot, clarification of the technical details. Result - a clear project plan for the implementation of the chatbot.
2. Creating a persona. Analyse the needs of the target audience and create a chatbot persona.
3. Dialogue design. Designing the structure of the dialogue and textual responses.
4. Development. Implementation of dialogs and database connections, bot training.
5. Launch. Integration on the platforms after training.
6. Improvement.

Companies such as Sparkasse and Panasonic have already partnered with Assono. The company has three subscription options: for small, medium, and large businesses. For our purposes, a basic subscription from Assono suits us, which includes AI-enabled chatbot, up to 250 calls per month, up to 50 topics or problems, one user account to manage and analyze the operation of the chatbot, IBM Watson Assistant license, regular maintenance, and updates.

Botsify, a company specializing in developing chatbots, has only recently entered the Austrian market. The company offers its customers the following solutions: (1) Unlimited users at the chatbot (business and custom subscription options only); (2) Trial period 14 days; (3) A personal manager who leads the chatbot project (available to all customers except those with a personal subscription); (4) Free support (only for business and custom subscription options). (5) Analytics; (6) The mechanism of lead generation. On the website, you can chat with the company's

bot, but only by providing it with your personal data. The company operates in the areas of e-commerce and business, education, fintech, marketing, customer support and sales. The company's unambiguous advantages are its fully user-controlled platform. Botsify has four subscription options: personal, professional, business, and custom. In addition, there are additional features: "hire a chatbot specialist" and "WhatsApp business automation". Of all the subscription plans offered by the company for Hotel das Sieben, we assume that “Professional” would be the most suitable that include integration of 5 chatbots on websites, Facebook, and SMS; handling chats with 15,000 users, unlimited number of talks, forms and media materials; free development of the 1st chatbot; free training for 1 chatbot every fortnight for 12 months.

Faqbot has positioned itself as a chatbot with "best-in-class AI support with up to 90% automation of customer support, sales and lead generation efforts."(“Faqbot | A helper bot that answers FAQ automatically in real-time.,” n.d.) Faqbot is an artificial intelligence-based bot that automatically answers frequently asked questions and builds a database of frequently asked questions based on users' requests. The company proposes to improve communication and overall customer service as follows: (1) By creating a database of frequently asked questions; (2) By integrating the "directed conversation" function we mentioned in paragraph 5.1; (3) Handing over the conversation to the real agent; (4) Easy integration with other platforms. Faqbot can be embedded in a website, a Facebook page, a mobile app. After creating a database of frequently asked questions based on existing content, the AI learns from each conversation to improve its answers. Companies such as Social Energy, Forumjobs and Wlink have already become clients of Faqbot. The company has two subscription options: standard and custom. The only difference between them is the design of the database. If we consider that we have already developed the first version of the database with frequently asked questions, keywords, and prepared answers, then the standard subscription option meets our needs well: managing a database of frequently asked questions; messaging and contact interface, manageable conversation flow; AI support, analytics; support for other languages; user integration.

We consider it worthwhile to compare the platforms we have chosen and to determine the most suitable one for Hotel das Sieben. Below is a comparison table with the indicators that we consider important and critical for platform selection (Table 9):

Table 16: Comparative table of selected companies

Services and functions	The company		
	Assono	Faqbot	Botsify
Bot availability 24/7	✓	✓	✓
Integration on the website	✓	✓	✓
Facebook integration	✓	✓	✓
Instagram integration	✓	✓	✗
SMS integration	✗	✓	✓
Integration on other platforms	✓	✓	✗
AI support	✓	✓	✓
Support for other languages	✓	✓	✗
Analytics	✓	✓	✓
Manageable conversation flow	✓	✓	✗
Small Talk	✓	✗	✗
Free development	✓	✓	✓
Free technical support and updates	✓	✓	✗
Setting the time for sending messages	✗	✗	✓
Personalised speech style design	✓	✗	✗
IBM Watson Assistant licence	✓	✗	✗
Trial period	✗	✗	✓
Unlimited number of calls	✗	✗	✗
Unlimited number of chat topics	✗	✗	✗
Unlimited number of scheduled responses	✗	✗	✗
Acquisition of additional functions	✓	✗	✓
Easy installation	✗	✓	✗
Price for the selected subscription	**890€**	**499€**	**105€**

Source: Compiled by the author

Based on the comparison table, Faqbot is perfect for our purposes. Such a chatbot would have sufficient functionality and would be able to integrate into all necessary

and already existing communication channels with the hotel's consumers (Instagram and Facebook). Compared to other counterparts, Faqbot has several advantages: controlled conversation flow, foreign language support, and price. After the first launch and analysis of the results, the bot needs to be updated and refined.

5.3 Interim Conclusion Chapter 5

A general review of the Hotel das Sieben was carried out. The hotel website was analyzed on the following points: pop-ups, special offers and promotions, availability of FAQs, forms of communication and chatbot availability, links to social media, booking page. Based on the analysis, the need for a new channel of communication with consumers was identified - a chatbot that would be able to quickly process requests and instantly answer frequently asked questions from potential guests and connect the user with a real agent in real time. Such a solution would be an alternative to communication via email or phone, which were listed on the hotel's main website as contact information.

Based on chatbot research, we presented a scale for improving customer communication through chatbots and selected the right type of technology to address the task at hand. It has been proven that implementing a chatbot in a hotel can be mutually beneficial for the hotel and the potential guest because: (1) 45% of consumers do not care whether they interact with a live agent or a chatbot; (2) 59% of consumers would rather use additional channels to communicate with customer service than use their voice to communicate.

We illustrated the process of communication between a human and a chatbot and gave an example of a database on which a bot could work, consisting of query, keywords, ready answers. It has been proven that one of the factors in the development of chatbots as a means of communication between brands and consumers is the popularity of communication platforms such as Telegram, WhatsApp, and Facebook Messenger, which people use every day. Statistics were given on the use of the different platforms in Russia and Austria. Austria has a population of 9.02 million people, of which 7.21 million use social media. The annual growth of users is 4.4%. Russia has 145.9 million people, of which 99 million are active social network users. Annual user growth is 5.1%, which is approximately 4.8

million people. Various platforms offering chatbot creation as a service in Austria were analyzed. Services that are offered by companies were analysed according to the following criteria: bot availability 24/7, website integration, Facebook integration, Instagram integration, SMS integration, integration with other platforms, artificial intelligence support, foreign language support, analytics data collection and browsing, availability of managed conversation flow and more. We concluded that the chatbot "Faqbot" is suitable for integration into the Das Sieben Hotel website with the possibility of further integration into the company's social media.

6 Empirical Study

The previous chapters have described the theoretical aspects of this thesis. The next chapter presents the practical part of the research. The overall objective of the empirical and theoretical research is to prove that in today's world of digital consumption, the introduction of a chatbot can establish and improve mutually beneficial communication between consumers and companies in the hospitality industry. We have described all the benefits that a company can gain from the introduction of a chatbot in the previous chapters and provided examples. This chapter reveals the user's perception of the chatbot in relation to the preferences regarding the choice of communication channel with the hotel.

6.1 Research question and hypothesis

The aim of this study is to prove the chatbot can be an effective communication tool in the hotel industry. The research question is based on the precious theoretical chapters and is as follows: *If the chatbot is an effective communication tool, what are the determining factors that contribute to this effectiveness in the hotel industry?*

The interest in studying the effectiveness of chatbots in the hotel industry stems from the lack of research on attitudes towards chatbots in the hotel industry. We have already mentioned in previous chapters that chatbots have been used successfully in the banking sector, for example. Today, there are banks that have almost no physical offices, all communication with which can be done online, through a chatbot. This reduces the workload of bank employees, allows them to analyze query data and improve customer service(“Tinkoff.ru—A digital financial ecosystem built around customer needs,” n.d.). And if it is a standard for Tinkoff cardholders to communicate with the bank via a chatbot, could this become the norm for hotels? For the purposes of our research, we limited ourselves to two hypotheses, which will only be a first step towards exploring chatbots as a channel of communication with hotels. Based on the research we described in Chapter 2 and the literature we have examined; we conclude that the following factors may influence the effectiveness of chatbots in the hotel industry: (1) Positive perception of a chatbot; (2) Positive experience in other industries; (2) Desire to use it as a

communication channel with hotels; (3) Chatbot competence in answering requests. Considering these factors, we formulated 2 hypotheses for the study:

Table 17:Hypothesis & Variables

Hypothesis	Variables
H1: The more positive the consumer's perception of the chatbot as a technology is, the more likely they are to choose it as a communication channel with the hotel.	• Perception • Experience • Channel preference • Attitude
H2: Consumers that find chatbots trustworthy will also find them competent in answering queries as humans.	• Trust • Competence • Positive attitude

Source: Compiled by the author

Method: for this thesis, the quantitative empirical method has been chosen. Quantitative method of a research is a great solution in terms of pandemic situation and COVID-19 measures.

The clear advantages of this method are: (1) the precise and clear definition of independent and dependent variables in the survey process, (2) the possibility of obtaining more objective results, (3) testing the accuracy of the hypothesis, (4) establishment of cause-effect relations, (5) high level of reliability and accuracy of data obtained in structured interviews. However, this method has its drawbacks: (1) the lack of opportunity to obtain information about the situational context of the phenomenon under study, (2) the impossibility to control all those circumstances and contexts that do not affect the quality of respondents' answers, (3) limited conclusions, which are due to the format of the survey.

An online survey was developed for Austrians and Russians, men, and women between the ages of 18 and 50 from Vienna, Austria and men and women of the same age group from Moscow, Russia, N=200.

6.2 Sample and research design

Sample: the sample must be taken by deliberate, random selection to represent the population according to age, country, and gender. The calculations and the resulting table are presented below. There will be 200 respondents in total. The population participating in this survey consists of Austrians aged 16-35 and Russians in the same age group. All the necessary calculations and the sample table are shown below. The statistical data for Russia was taken from the Federal State Statistics Service("Population of the Russian Federation," 2020). The statistical data for Austria was taken from the website statistic.at("Bevölkerung nach Alter und Geschlecht," n.d.). All the numbers for the calculation, presented below were taken from the excel sheets from Russian Federal State Statistics Service and statistic.at.

Russia, Moscow population: 12 678 079 = 100%. Our sample based on the target age group: 5 846 857 ≈ 46% from the whole population**.** Number of men in our sample: 2 831 186 ≈ 48,4% from our sample**.** Number of women in our sample: 3 015 671 ≈ 51,6% from our sample.

Number of **men** in selected age groups from our sample:

Age group (18-30):
812 036 men

$$\left(\frac{812\ 036}{5\ 846\ 857}\right) \cdot 100 = 13{,}9\% \approx 14\ men$$

Age group (31-50):
2 019 150 men

$$\left(\frac{2\ 019\ 150}{5\ 846\ 857}\right) \cdot 100 = 34{,}5\% \approx 35\ men$$

Number of **women** in selected age groups from our sample:

Age group (18-30):
836 518 women

$$\left(\frac{836\ 518}{5\ 846\ 857}\right) \cdot 100 = 14{,}3\% \approx 14\ women$$

Age group (31-50):
2 179 153 women

$$\left(\frac{2\ 179\ 153}{5\ 846\ 857}\right) \cdot 100 = 37.3\% \approx 37\ women$$

Austria, Vienna population: 1 920 949 = 100%. Our sample based on the target age group: 922 109 ≈ 48% from the whole population. Number of men in our

sample: 462 074 ≈ 50,1%≈ 50% from our sample. Number of women in our sample: 460 035 ≈ 49,8%≈ 50% from our sample.

Number of **men** in selected age groups from our sample:

Age group (18-30):
179 602 men

$$\left(\frac{179\ 602}{922\ 109}\right) \cdot 100 = 19{,}4\% \approx 19\ men$$

Age group (31-50):
282 472 men

$$\left(\frac{282\ 472}{922\ 109}\right) \cdot 100 = 30{,}6\% \approx 31\ men$$

Number of **women** in selected age groups from our sample:

Age group (18-30):
179 186 women

$$\left(\frac{179\ 186}{922\ 109}\right) \cdot 100 = 19{,}4\% \approx 19\ women$$

Age group (31-50):
280 849 women

$$\left(\frac{280\ 849}{922\ 109}\right) \cdot 100 = 30{,}5\% \approx 31\ women$$

According to the calculation mentioned in formulas above, we can make a table of the sample for our online survey:

Table 18: Population sample for the survey

	Men			Women			Total
	18–30	31–50	Σ	18–30	31–50	Σ	
Austria	14	35	49	14	37	51	100
Russia	19	31	50	19	31	50	100

Source: Compiled by the author

Age groups: the are several reasons why this dissertation is concentrated on people aged 18 to 50. Firstly, even though some hotels let 16-year-old teenagers book a hotel, in most cases the minimum age to check in to a hotel is 18. Secondly,

our first target group (from 18 – 30) consists of representatives of the generation Z and young Millennials, that were born in 1990-s. They either adopted the Internet in early age or are considered first digital natives. “They consume content continuously through multiple screens, even when they are in social situations. As a result see no boarders between the online and offline worlds.” (Kotler et al., 2021, p. 25). Kotler also mentions that by the time of 2025 generation Z will make up most of the workforce and become the most significant market for services and goods. Thirdly, the second target group (31–50) are generation X representatives that were born in between 1965 and 1980. These people experienced consumer technology shifts and that made them adaptable. Besides it is the most influential workforce today. In our study we would like to show the correlation between these target groups. The empirical research of this master thesis can be visualized in the following table:

Table 19: Research design

Research paradigm	Quantitative
Population	Muscovites and Viennese aged 18-50
Sample	N = 200
Sampling procedure	Quota sampling based on country, city, age, and gender
Method	Online-Survey (Google Forms)
Survey Tool	Questionnaire
Field time	September 17, 2021 – September 20, 2021

Source: Compiled by the author

6.3 Questionnaire creation and operationalization

The questionnaire of this study is carried out in the English and Russian languages. In this chapter the questions are presented only in the English language. The complete questionnaire can be found in the appendix of the master thesis.

Questionnaire design

To provide structure in the questionnaire it is divided into several sections:

1. *Introduction:* the author introduces herself, gives a summary of the topic of the study, and explains the confidentiality of the data and the anonymity of the questionnaire.
2. *Screening:* Respondents then answer the questions that filter them according to their gender, age, and education. These types of cushions help to determine the target group.
3. *Chatbot recognition and experience:* Here participants are tested whether they know what a chatbot is and whether they have had an experience with it.
4. *Experience rate:* This section is shown only to those participants that had an experience with a chatbot before. If so, they are asked to rate their previous experience.
5. *Factors of communication channel choice:* Here the factors like time saving comfort, competence of the respondent, empathy are examined with the Likert scale.
6. *Preference and Attitude:* In this section, the participants show their willingness or unwillingness to have a chatbot as an additional channel of communication with the hotel. Here we also investigate whether chatbots, from the users' point of view, can partially replace humans when answering queries and whether they consider virtual agents to be competent. We also asked both of our age groups if they trusted the information provided by the chatbot and if they would prefer to have a real person answer their questions.

Q1–5 serve as screening questions. To test the H1, questions 7, 8, 10, 11 were conducted. Q10–14 serve H2.

The survey design is presented in the following table that was compiled by author (Table 20):

Table 20: Survey Design

Section 1: Introduction			
Section 2: Screening			
Q	**Hypothesis/Variable**	**Text**	**Scale/items**
Q1	Age	How old are you?	**Nominal scale:** 1. 18-30 2. 31-50
Q2	Residence	Where do you live?	**Nominal scale:** 1. Russia, Moscow 2. Austria, Vienna
Q3	Gender	Sex	**Nominal scale:** 1. Male 2. Female
Q4	Online experience	Have you ever visited a hotel webpage?	**Nominal scale:** 1. Yes 2. No
Q5	Level of education	What is your highest level of education?	**Ordinal scale:** 1. Compulsory schooling 2. AHS/BHS/middle school without Matura 3. Completed apprenticeship/specialized school/BMS or Matura 4. Bachelor (Undergraduate) 5. Master (Graduate) 6. PhD, Doctorate (Postgraduate) 7. Other
Section 3: Chatbot recognition and experience			
Q6	Chatbot recognition	Do you know what is a chatbot?	**Nominal scale:** 1. Yes 2. No
Q7	General experience **H1**	Have you ever had an experience with a chatbot? (Banking, hospitality, e-commerce)	**Nominal scale:** 1. Yes 2. No

Section 4: Experience Rate (IF YES)			
Q8	Experience Quality **H1**	Please, describe your experience with a chatbot:	**Likert scale:** 1 – Very unsatisfied 2 – Unsatisfied 3 – Neutral 4 – Satisfied 5 – Very satisfied
Section 5: Factors of communication channel choice			
Q9	Choice factors	Please rate the importance of each factor that influences your choice of communication channel with the hotel: 1. Time saving 2. Comfort 3. Competence of the respondent 4. Empathy Accessibility	**Likert scale:** 1 – Not at all important 2 – Low Importance 3 – Neutral 4 – Important 5 – Very important
Section 6: Preference and Attitude			
Q10	Channel preference **H1** **H2**	Would you like to be able to contact the hotel via a chatbot besides telephone or email?	**Nominal scale:** 1. Yes 2. No
Q11	Chatbot Attitude **H1** **H2**	Do you think a chatbot can partially replace a real person in answering requests to a hotel?	**Likert scale:** 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
Q12	Chatbot Competence **H2**	Do you think that chatbots are less competent in answering queries compared to humans?	**Likert scale:** 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree

Q13	Chatbot Trust **H2**	Do you trust the information provided by the chatbot?	**Nominal scale:** 1. Yes 2. No
Q14	Answer Preference **H2**	Is it important for you to have a real person answer your query?	**Nominal scale:** 1. Yes 2. No

Source: Compiled by the author

Pretest: During pretest of 3 participants from each age group, several questions were deleted from the questionnaire, some reformulated for the easier understanding. One participant from the older age group claimed that the questionnaire was too long. And all 6 reported about that they could not understand some of the questions after reading them once. One participant from the second age group (31-50 years old) asked me to clarify the question about education and stated: "I hope that as a result of the study you will not offend people with a lower level of education".

Quality criteria: there are main standard criterions of a quantitative research: validity, reliability, generalizability, and objectivity. (1) *Validity criterion* is closely related to theory. There are two main types of the validity: predicative and concurrent. To establish this criterion, there must be a good knowledge of theory, so that we can expect variables to be predicted to it, and a measure of the relationship between our measure and those factors(Muijs, 2004, p. 67). (2) *Reliability criterion* is a key criterion in measurement. If we measure something, we sometimes may face error elements, which can be simply called measurement errors. Reliability refers to the extent to which the test results are free from measurement error(Muijs, 2004, p. 71). (3) *Objectivity criterion* refers to the extent to which research projects are undistorted by the biases of researchers. (4) *Generalizability criterion* refers to the extent to which we can generalize the findings from a sample to an entire population.

6.4 Evaluation method

As soon as the field phase is over, all the data is saved and collected for the evaluation in statistics software IBM SPSS (Statistical Package for the social Sciences).

Firstly, before the evaluation, all the data need to be cleared up, so that it is possible to work with it further. Only then the descriptive analysis and statistical tests can be undertaken. Descriptive analysis indicates standard deviations, range of scores for the variables and the means. After the descriptive analysis a regression analysis, with significance assessment based on p-value was taken place to verify or falsify hypothesis. The following table shows the hypothesis with its variables and corresponding scale level:

Table 21: Hypothesis with variables and scale levels

Hypothesis	Variables	Scale level
H1: The more positive the consumer's perception of the chatbot as a technology is, the more likely they are to choose it as a communication channel with the hotel.	General experience	Nominal scale
	Experience Quality	Interval scale
	Channel preference	Nominal scale
	Attitude	Interval scale
H2: Consumers that find chatbots trustworthy will also find them competent in answering queries as humans.	Trust	Nominal scale
	Competence	Interval scale
	Human answer	Nominal scale

Source: Compiled by the author

6.5 The results and conclusion of the study

The field phase took place from September 17, 2021, to September 20, 2021. The gross sample consists of 265 respondents. 65 participants were removed by the author due to the overrepresentation. *Descriptive Analysis:* after the introduction,

the respondents were asked about their age, residence, gender, and if they ever visited a webpage of a hotel. **Q1**: The first screening question dealt with the age of respondents. **Q2:** The second screening question was about the residence of the participants. As it is illustrated, the requirements of the study were met. We also asked out participants if they ever visited an online page of a hotel. **Q4:** The last screening question filtered our participant according to their level of education. **Q5:** The next section of our questionnaire is: *Chatbot recognition and experience.* We asked both of our age groups weather they know what a chatbot is. **Q6:** Here we check if the participants know what a chatbot is. **Q7:** Participants were also asked if they had a communication experience with a chatbot in other industries. **Q8:** This question is not shown to those participants that replied no to the previous question. In SPSS for the missing data, we set the valuable "0= No Data". **Q9:** factors of communication channel choice were examined here. Q10: deals with the communication channel preference. **Q11-14** Shows overall the attitude to chatbots.

Figure 16: Descriptive statistics in SPSS

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
1.How old are you?	200	1	1	2	1.67	.471
8.Please rate your communication experience with a chatbot	200	5	0	5	2.90	1.669
9.Time saving	200	4	1	5	4.13	1.026
10.Comfort	200	4	1	5	4.17	1.021
11.Competence of the respondent	200	4	1	5	4.30	1.022
12.Empathy	200	4	1	5	3.55	1.267
13.Accessibility	200	4	1	5	4.28	.926
15.Do you think a chatbot can partially replace a real person in answering requests to a hotel?	200	4	1	5	3.43	1.274
16.Do you think that chatbots are less competent in answering queries compared to humans?	200	4	1	5	3.62	1.246
Valid N (listwise)	200					

Source: Compiled by the author in SPSS

We chose the most relevant descriptive statistics to be shown. Most of our variables are nominal. Age and residence results fully match the requirements of the study.

Tests: To answer the research question, we conducted a regression analysis, with significance assessment based on p-value for H1 and H2. Before testing the hypothesis, a correlation analysis was carried out (see correlation matrix in the appendix) and significant correlations between the parameters of interest were identified. For example, there is a significant correlation between the quality of the user experience with the chatbot and the convenience, time savings and accessibility of the chatbot. To interpret the results of the regression analysis, we need to know the level of statistical significance(Braunecker, 2016, p. 112):

Table 22 Braunecker Significance level

Error probability	Explanation	Significance
p > 0,1	Weak proof against H0	Not significant
p > 0,05	Mediocre proof against H0	Not significant
p ≤ 0,05	Moderate proof against H0	Significant
p ≤ 0,01	Strong proof against H0	Highly significant
p ≤ 0,001	Very strong proof against H0	Extremely significant

Source: Braunecker, 2016

In the next two figures we will examine the results of the regression analysis made in SPSS. The first regression shows that chatbot experience has no significant effect on the dependent variable (Q15). However, having a positive experience with the chatbot in the past increases the probability of answering "yes" to Q15. Answering "no" to Q16 leads to a significant increase in the probability of answering "yes" to Q15. We also faced an interesting problem here. Regression 1 shows that it doesn't matter if you've had any experience with the chatbot at all. What really matters is whether it was a positive one.

Table 23: Regression 1, SPSS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.088	.314		13.007	<.001
	chatbotexp	-.568	.400	-.174	-1.419	.158
	8.Please rate your communication experience with a chatbot	.271	.094	.355	2.883	.004
	16.Do you think that chatbots are less competent in answering queries compared to humans?	-.271	.070	-.265	-3.857	<.001

a. Dependent Variable: 15.Do you think a chatbot can partially replace a real person in answering requests to a hotel?

Source: Compiled by the author in SPSS

According to regression 2 (competence – dependent, trust -– explanatory), trust does not have a statistically significant effect on user rated competence of the chatbot (p-value 0.997). However, those who believe that a chatbot can partially replace a human being in answering requests, give a significantly higher rating to the chatbot competence perception (p-value 0.047).

Table 24: Regression 2, SPSS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.884	.219		17.712	<.001
	trust_1	-.001	.190	.000	-.003	.997
	15.Do you think a chatbot can partially replace a real person in answering requests to a hotel?	.121	.061	.151	1.998	.047

a. Dependent Variable: 11.Competence of the respondent

Source: Compiled by the author in SPSS

According to regression 2 (competence – dependent, trust -– explanatory), trust does not have a statistically significant effect on user rated competence of the chatbot (p-value 0.997). However, those who believe that a chatbot can partially

replace a human being in answering requests, give a significantly higher rating to the chatbot competence perception (p-value 0.047).

Thus, it can be seen from the results of the study that **Hypothesis 1** is **verified**. To a large extent, the choice of chatbots as a means of communication with the hotel in the future depends on the experience of communication in other industries. **Hypothesis 2** is **falsified** as we did not find a strong influence of trust on rated competence of chatbots.

Research question answer: *If the chatbot is an effective communication tool, what are the determining factors that contribute to this effectiveness in the hotel industry?*

According to the result that we got during the study we may conclude that only positive experience and attitude to the chatbot technology in general may be among the determining factors to the effectiveness of chatbot in the hotel industry. On the contrary, connection between trust and competence of chatbots wasn't verified. More detailed review of variables correlation can be found in the appendix of the thesis.

Limitations and future research: Certainly, there are some limitations of the study. Only Austrians from Vienna and Russian from Moscow were sampled for the study. Large study groups also can be seen as a limitation of the study. Moreover, we could make age a numeric variable, but participants could only choose their age group instead of mentioning their actual age. The study was focused of very specific factors of communication channel effectiveness which should be corrected by future scholars. We also suggest that future research in this direction could be conducted in a more sophisticated way. More elegant models of analysis can be chosen to classify factors important for the chatbot user experience. The chatbot experiences of Russians and Austrians could also be examined in a more comparative way. The further research could find similarities and cultural factors in chatbot perception, acceptance, and user personal preferences in communication channels.

7 Conclusion

This chapter presents the conclusion to the master's thesis. The theoretical and empirical results of the are reflected.

Theoretical and practical aspects of the formation of the system of integrated marketing communications in the conditions of digitalization were considered in this paper. Based on the stages ("versions") of marketing according to F. Kotler and the considered periodization of various authors, we concluded that the main challenge for marketing today is the desire to preserve traditional values while adapting to the new technological reality. The challenge for marketers is to unite the offline and online worlds by integrating modern technology and using it to improve communication with consumers. The essence of the concepts of digital advertising and digital marketing is revealed: Digital marketing is a set of processes to facilitate marketing activities using digital communication channels and digital technologies to attract and retain consumers.

A comparative analysis of digital communication markets in Russia and Austria in different business areas has been carried out. Statistical data shows the growth of AI adoption in different business areas. This stimulates the introduction of AI-enabled chatbot technology in industries such as education, telecommunications, medicine, food, fashion and beauty, banking and finance, real estate, insurance, transport, and hospitality.

Chatbots are a great tool for communicating with consumers. However, the technology has its limitations and people also need time to adapt and understand how to work with chatbots. For a company to succeed in using chatbots as their chosen marketing communication, they need to monitor user behavior and constantly improve their chatbots, making them clearer and more effective. Based on an analysis of the Das Sieben Hotel website, the need was identified for a new channel of communication with consumers - a chatbot that can quickly process queries and instantly answer frequently asked questions from potential guests, as well as linking the user to a real agent in real time.

The scientific novelty of the thesis lies in the following:

1. The conceptual apparatus is clarified, in particular 'digital marketing', 'internet marketing' or 'online marketing', and 'email marketing', which in the author's view have been unjustifiably used as synonyms in the academic literature. The author's concepts of 'digital marketing' and 'integrated marketing communications' are proposed: "Digital marketing" is a set of processes to facilitate marketing activities using digital communication channels and digital technologies to attract and retain consumers. "Integrated marketing communications" is the use of complementary communications that are integrated with other marketing tools to achieve maximum effectiveness.
2. Developed recommendations for implementing a chatbot on a hotel website; substantiated the bot development platform, which has many advantages over analogues presented in the Austrian SaaS market by companies specializing in implementing AI-enabled chatbots on various platforms.
3. Scientific papers and studies of recent years about chatbot technology were examined. The empirical research was conducted. The author created an online survey for Austrians and Russians aged from 18 – 50 from Vienna and Moscow. 264 questionnaires were fulfilled and n=200 participants took part in research. The research question was answered, and hypothesis verified of falsified. Limitations and future research recommendations were also reflected in the last chapter of the thesis.

Table 25: Hypothesis verification

H1: The more positive the consumer's perception of the chatbot as a technology is, the more likely they are to choose it as a communication channel with the hotel.	Verified
H2: Consumers that find chatbots trustworthy will also find them competent in answering queries as humans.	Falsified

Source: Compiled by the author

Publications of the author connected to the topic of the thesis:

- Article on the topic "Improvement of the advertising process in the development of the digital economy" in Russian, published in the collection of the IV International Symposium "Aesthetics and Pragmatics of Advertising", PSU, 2019.
- Article on "Digital commerce: service-dominant logic and value creation" in English, which was published in the collection of the YI International Scientific and Practical Conference "Science, Business, Power - the Triad of Regional Development", Novgorod State University, 2021.

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10 Appendix

EXPOSÉ

Familienname, Vorname	Burliyat Zavrumova
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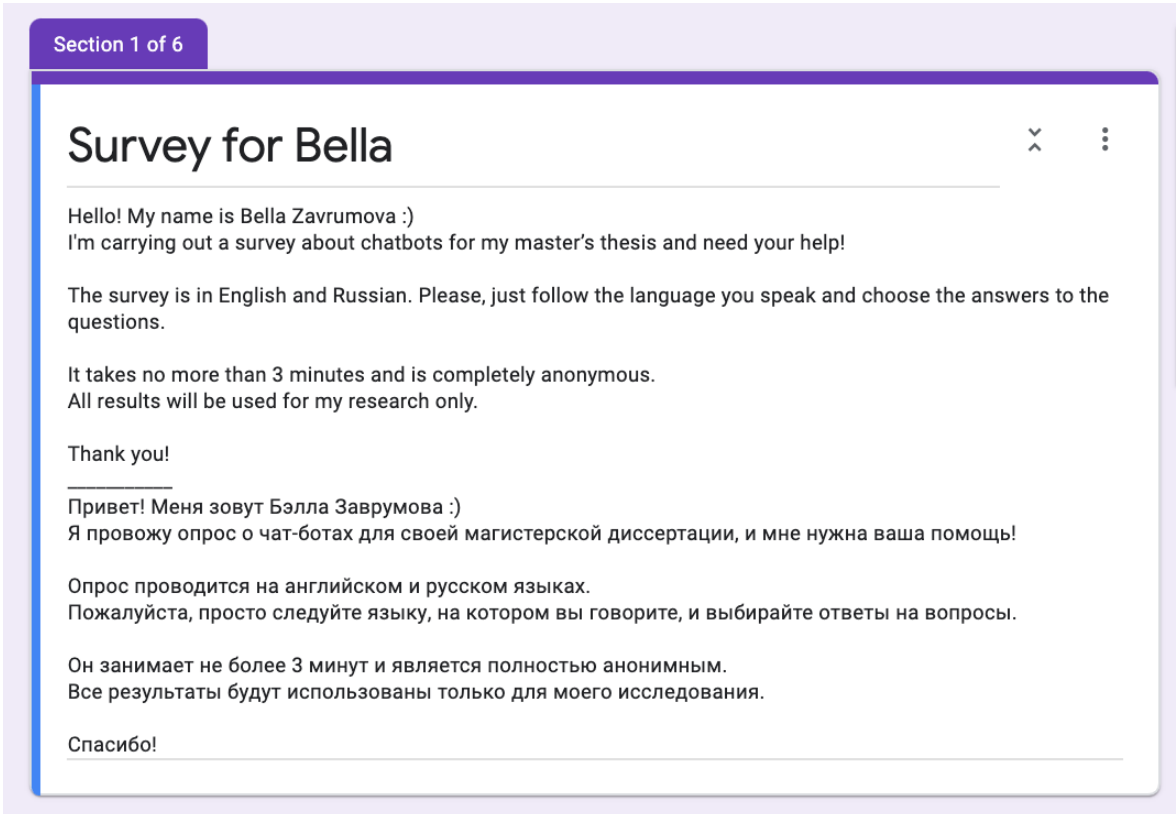
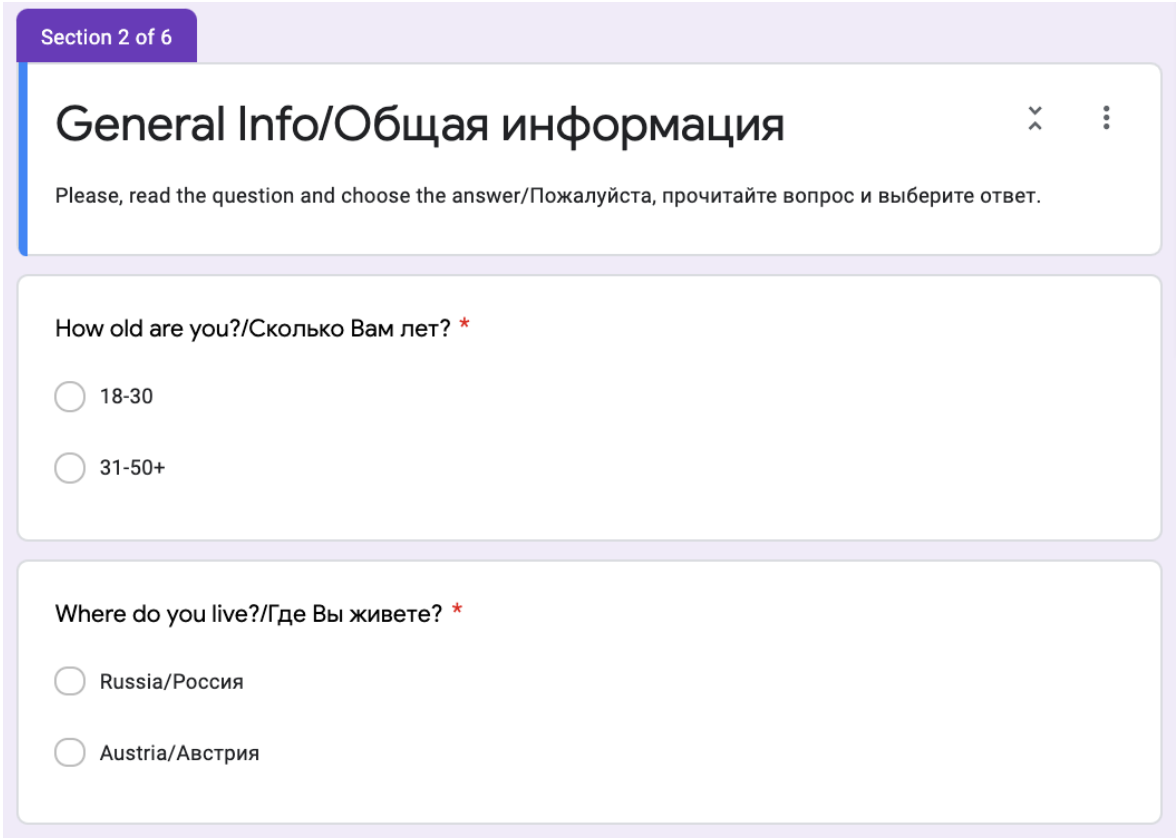
Arbeitstitel	**Marketing Communications and Technology in the Digital Economy**
Fragestellung der Master-These	**Problem Definition:** Each year, digitalization is increasingly penetrating the economy, changing traditional structures and business models.(Swaminathan & Meffert, 2017, p. 13) The digital economy has a direct impact on marketing, and therefore also on advertising, in some cases reducing the effectiveness of a company's previous promotion methods and channels of communication with potential consumers. By analyzing and researching current technology and new channels of communication, and then using the results of the research can be a competitive advantage for the business. **The relevance** of this paper stems from the fact that activities aimed at effective communication between companies and consumers are an essential element of an integrated marketing communications system. The analysis of communication channels and their selection before shaping a digital advertising strategy is a mandatory step to achieve commercial goals. The marketing strategy of a modern B2C company cannot exist without digital communication channels and information systems. Communication is changing in the era of active digital consumption, opening new business opportunities. Those companies that can understand technology and improve communication with their target audience will have a competitive advantage. Technologies such as artificial intelligence, natural language processing, sensor technology, augmented reality, virtual reality, internet of things, blockchain, chatbots, and big

	data and the ability to analyze it all have a direct or indirect impact on marketing activities(Kotler et al., 2021), creating a huge field to explore. The chatbot technology penetrates all industries: education, telecommunication, medicine, food, fashion and beauty, banking and finance, real state, transport, and tourism. Chatbots are particularly relevant due to the popularity of messengers such as WhatsApp and Facebook Messenger. The relevance of the topic stems from the need to: • Increased awareness of digital technologies. • Improvement of digital communication channels between companies and consumers. • Introducing chatbot technology into the hospitality industry to optimize resources spent on customer service. • Better consideration and analysis of the possibilities of chatbots due to the development of artificial intelligence. Various aspects of the problem of formation and development of integrated marketing communications are reflected in the works of such scholars and economists as A.V. Arlantsev, K. Bluth, P. Valen, R. Leuterborn, F.G. Pankratov, E.V. Popov, T.K. Serugina, S. Tannenbaum, V.G. Shakhurin, D. Schultz and others, who consider marketing communications as the most effective way of product and enterprise promotion in modern conditions. Digitalization, the development of digital technologies and marketing communications are the objects of research, both Russian and foreign scientists. Studies in this area are engaged in: E.I. Kulikova, V.I. Cherenkov, A.Y. Shora, O.D. Andreeva, A.N. Abramova, D.A. Shevchenko, F. Kotler, A. Steven, J. Stern, A. De Bruyn, M. Taylor, T. Gillpatrick, D. Reilly, D. Grudney, S. Rehn, E. Van den Broek, B. Zaruali, A. Gongoali. Zaruali, W. Gong, P. Gench, C. Harvey, C. Moorman, M. Castillo Toledo, D. Jordan, W. Pride, O. Ferrell, M. Taylor, C. Wren, G. Brunswick, H. Lane. It should be noted that some of these studies are incomplete and that there are no fundamental works that consider the digital tools of the integrated marketing communications system as the object of research. On the basis of the above, there is a high degree of relevance to issues related to digital technologies and their impact, in particular on companies' marketing communications. The **hypothesis** of the study is that in today's world of digital consumption, it is necessary to monitor the development of technology and its impact on marketing communications in order not to fall out of the general flow of transformation. This approach creates the conditions for an informed and appropriate implementation of technology in business. The introduction of a chatbot can facilitate better and more mutually beneficial

	communication between consumers and companies in the hospitality industry. The **aim** of this paper is to conduct a comprehensive study of modern digital marketing communication tools and develop practical recommendations for the implementation of a chatbot on the Das Sieben Hotel website. The **object** of the study is digital marketing communication tools. The **subject** of the study is a chatbot technology as a digital marketing communication tool. **Research question:** If the chatbot is an effective communication tool, what are the determining factors that contribute to this effectiveness in the hotel industry?
Wissenschaftliche und praktische Relevanz	**Scientific relevance:** Theoretical significance lies in the fact that it clarifies and specifies the conceptual apparatus, describes modern technology and its application in marketing, developed theoretical conclusions to improve the effectiveness of communication with consumers of hospitality enterprises, for further use of the chosen technology and its subsequent improvement. **Practical relevance:** The practical significance lies in the analysis of the use of chatbots and the development of recommendations for the implementation of the technology for the hotel Das Sieben. The results of the study can be used to create and implement chatbots in other hotels and subsequently improve the automated channel of communication with potential guests in the future.
Aufbau und Gliederung	**Table of Contents Master Thesis** – Affidavit – Abstract – Table of contents – List of Figures – List of Tables **1. Introduction** 1.1 Problem Definition 1.2 Aim of the thesis 1.3 Methodology 1.4 Structure of the Thesis **2. Current state of research**

SURVEY


Section 1 of 6
Survey for Bella
Hello! My name is Bella Zavrumova :)
I'm carrying out a survey about chatbots for my master's thesis and need your help!
The survey is in English and Russian. Please, just follow the language you speak and choose the answers to the questions.
It takes no more than 3 minutes and is completely anonymous.
All results will be used for my research only.
Thank you!
Привет! Меня зовут Бэлла Заврумова :)
Я провожу опрос о чат-ботах для своей магистерской диссертации, и мне нужна ваша помощь!
Опрос проводится на английском и русском языках.
Пожалуйста, просто следуйте языку, на котором вы говорите, и выбирайте ответы на вопросы.
Он занимает не более 3 минут и является полностью анонимным.
Все результаты будут использованы только для моего исследования.
Спасибо!


Section 2 of 6
General Info/Общая информация
Please, read the question and choose the answer/Пожалуйста, прочитайте вопрос и выберите ответ.
How old are you?/Сколько Вам лет? *
18-30
31-50+
Where do you live?/Где Вы живете? *
Russia/Россия
Austria/Австрия

Sex/Пол *

- Male/Мужчина
- Female/Женщина

Have you ever visited a hotel webpage?/Вы когда-нибудь посещали веб-страницу отеля? *

- Yes/Да
- No/Нет

What is your highest level of education?/Каков ваш уровень образования? *

- Compulsory schooling/Обязательное школьное образование
- AHS, BHS, middle school without Matura/Средняя школа без аттестата
- Apprenticeship, specialised school, BMS or Matura/Аттестат о среднем общем образовании
- Bachelor (Undergraduate)/Бакалавр
- Master (Graduate)/Магистр
- PhD, Doctorate (Postgraduate)/PhD, докторская степень (аспирантура)
- Other/Другое

Section 3 of 6

Chatbot recognition and experience/Опыт и использование чат-ботов

Please read the question and rate every factor/Пожалуйста, прочитайте вопрос и оцените каждый фактор.

Do you know what is a chatbot?/Знаете ли Вы, что такое чат-бот? *

- Yes/Да
- Maybe/Возможно
- No/Нет

Have you ever had an experience with a chatbot?(Banking, hospitality, e-commerce)/Был ли у вас опыт общения с чат-ботом?(Банковское дело, гостиничный бизнес, электронная коммерция) *

- Yes/Да
- No/Нет

Section 4 of 6

Rating/Оценка

Please read the question and rate your experience/Пожалуйста, прочитайте вопрос и оцените свой опыт.

Please rate your communication experience with a chatbot/Пожалуйста, оцените свой опыт общения с чат-ботом. *

	1	2	3	4	5	
Very unsatisfied/Очень неудовлетворен	○	○	○	○	○	Very satisfied/Очень удовлетворен

Section 5 of 6

Please rate the importance of each factor that influences your choice of communication channel with the hotel:/ Пожалуйста, оцените важность каждого фактора, влияющего на ваш выбор канала связи с отелем:

Please read the question and rate every factor/Пожалуйста, прочитайте вопрос и оцените каждый фактор.

Time saving/Экономия времени *

	1	2	3	4	5	
Not important at all/Совсем не важно	○	○	○	○	○	Very important/Очень важно

Comfort/Удобство *

	1	2	3	4	5	
Not important at all/Совсем не важно	○	○	○	○	○	Very important/Очень важно

Competence of the respondent/Компетентность респондента *

	1	2	3	4	5	
Not important at all/Совсем не важно	○	○	○	○	○	Very important/Очень важно

Empathy/Эмпатия *

	1	2	3	4	5	
Not important at all/Совсем не важно	○	○	○	○	○	Very important/Очень важно

Accessibility/Доступность *

	1	2	3	4	5	
Not important at all/Совсем не важно	○	○	○	○	○	Very important/Очень важно

After section 5 Continue to next section

Section 6 of 6

Preference and Attitude/Предпочтения и отношение

Please read the question and choose the answer/Пожалуйста, прочитайте вопрос и выберите ответ.

Would you like to be able to contact the hotel via a chatbot besides telephone or email?/Хотели бы вы иметь возможность связаться с отелем через чат-бот помимо телефона или электронной почты? *

- ○ Yes/Да
- ○ No/Нет

Do you think a chatbot can partially replace a real person in answering requests to a hotel?/Как вы думаете, может ли чат-бот частично заменить реального человека в ответах на запросы в отель? *

	1	2	3	4	5	
Strongly disagree/Однозначно нет	○	○	○	○	○	Strongly agree/Однозначно да

Do you think that chatbots are less competent in answering queries compared to humans?/ Считаете ли вы, что чат-боты менее компетентны в ответах на запросы по сравнению с людьми? *

	1	2	3	4	5	
Strongly disagree/Однозначно нет	○	○	○	○	○	Strongly agree/Однозначно да

Do you think that chatbots are less competent in answering queries compared to humans?/ Считаете ли вы, что чат-боты менее компетентны в ответах на запросы по сравнению с людьми? *

	1	2	3	4	5	
Strongly disagree/Однозначно нет	○	○	○	○	○	Strongly agree/Однозначно да

Do you trust the information provided by the chatbot?/Доверяете ли вы информации, предоставленной чат-ботом? *

- ○ Yes/Да
- ○ No/Нет

Is it important for you to have a real person answer your query?/Важно ли для вас, чтобы на ваш вопрос ответил реальный человек? *

- ○ Yes/Да
- ○ No/Нет

CORRELATIONS MATRIX

Correlations

			1.How old are you?	8.Please rate your communication experience with a chatbot	9.Time saving	10.Comfort	11. Competence of the respondent	12.Empathy	13. Accessibility	15.Do you think a chatbot can partially replace a real person in answering requests to a hotel?	16.Do you think that chatbots are less competent in answering queries compared to humans?	Gender_1	hotel_p	residence_1	chatbot_rec_1	chatbotexp	trust_1	human_ans_1	channel_pref_1
Spearman's rho	1.How old are you?	Correlation Coefficient	1.000	-.026	.083	.031	.071	.121	.080	-.076	-.044	.007	.056	-.106	-.059	-.115	-.153*	-.008	-.035
		Sig. (2-tailed)	.	.712	.244	.667	.320	.088	.260	.284	.536	.921	.429	.134	.426	.104	.031	.909	.622
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	8.Please rate your communication experience with a chatbot	Correlation Coefficient	-.026	1.000	.253**	.232**	.040	-.079	.195**	.274**	-.192**	.166*	.225**	-.121	.439**	.689**	.387**	-.268**	.249**
		Sig. (2-tailed)	.712	.	<.001	<.001	.573	.266	.006	<.001	.006	.019	.001	.087	<.001	<.001	<.001	<.001	<.001
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	9.Time saving	Correlation Coefficient	.083	.253**	1.000	.469**	.456**	.138	.312**	.181*	-.094	.113	.047	-.003	-.001	.059	.093	-.107	.213**
		Sig. (2-tailed)	.244	<.001	.	<.001	<.001	.052	<.001	.010	.187	.112	.512	.967	.992	.408	.192	.131	.003
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	10.Comfort	Correlation Coefficient	.031	.232**	.469**	1.000	.514**	.291**	.310**	.228**	-.153*	.143*	.048	-.091	-.042	-.035	.164*	-.122	.298**
		Sig. (2-tailed)	.667	<.001	<.001	.	<.001	<.001	<.001	.001	.030	.043	.499	.198	.572	.624	.021	.087	<.001
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	11.Competence of the respondent	Correlation Coefficient	.071	.040	.456**	.514**	1.000	.301**	.386**	.156*	-.005	.209**	.008	.009	-.018	.004	.051	-.048	.189**
		Sig. (2-tailed)	.320	.573	<.001	<.001	.	<.001	<.001	.027	.948	.003	.915	.903	.813	.950	.471	.504	.008
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	12.Empathy	Correlation Coefficient	.121	-.079	.138	.291**	.301**	1.000	.347**	.075	.108	.056	-.084	-.109	-.235**	-.186**	-.098	.183**	.080
		Sig. (2-tailed)	.088	.266	.052	<.001	<.001	.	<.001	.294	.129	.430	.236	.126	.001	.008	.169	.010	.261
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	13.Accessibility	Correlation Coefficient	.080	.195**	.312**	.310**	.386**	.347**	1.000	.187**	-.097	.161*	-.016	-.081	.006	.087	.070	-.048	.206**
		Sig. (2-tailed)	.260	.006	<.001	<.001	<.001	<.001	.	.008	.173	.023	.825	.251	.935	.220	.323	.504	.003
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	15.Do you think a chatbot can partially replace a real person in answering requests to a hotel?	Correlation Coefficient	-.076	.274**	.181*	.228**	.156*	.075	.187**	1.000	-.326**	-.039	-.034	-.247**	.027	.106	.352**	-.233**	.380**
		Sig. (2-tailed)	.284	<.001	.010	.001	.027	.294	.008	.	<.001	.585	.638	<.001	.718	.134	<.001	<.001	<.001
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	16.Do you think that chatbots are less competent in answering queries compared to humans?	Correlation Coefficient	-.044	-.192**	-.094	-.153*	-.005	.108	-.097	-.326**	1.000	.028	-.147*	.021	.005	.021	-.132	.326**	-.312**
		Sig. (2-tailed)	.536	.006	.187	.030	.948	.129	.173	<.001	.	.696	.038	.768	.943	.769	.063	<.001	<.001
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	Gender_1	Correlation Coefficient	.007	.166*	.113	.143*	.209**	.056	.161*	-.039	.028	1.000	-.102	-.010	.000	.172*	.103	.049	.051
		Sig. (2-tailed)	.921	.019	.112	.043	.003	.430	.023	.585	.696	.	.150	.888	1.000	.015	.145	.490	.475
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	hotel_p	Correlation Coefficient	.056	.225**	.047	.048	.008	-.084	-.016	-.034	-.147*	-.102	1.000	.166*	.275**	.248**	.139*	-.145*	.067
		Sig. (2-tailed)	.429	.001	.512	.499	.915	.236	.825	.638	.038	.150	.	.019	<.001	<.001	.049	.040	.343
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	residence_1	Correlation Coefficient	-.106	-.121	-.003	-.091	.009	-.109	-.081	-.247**	.021	-.010	.166*	1.000	-.103	.039	-.025	-.081	-.067
		Sig. (2-tailed)	.134	.087	.967	.198	.903	.126	.251	<.001	.768	.888	.019	.	.167	.587	.730	.255	.347
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	chatbot_rec_1	Correlation Coefficient	-.059	.439**	-.001	-.042	-.018	-.235**	.006	.027	.005	.000	.275**	-.103	1.000	.660**	.193**	-.236**	.026
		Sig. (2-tailed)	.426	<.001	.992	.572	.813	.001	.935	.718	.943	1.000	<.001	.167	.	<.001	.009	.001	.725
		N	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182
	chatbotexp	Correlation Coefficient	-.115	.689**	.059	-.035	.004	-.186**	.087	.106	.021	.172*	.248**	.039	.660**	1.000	.260**	-.206**	.047
		Sig. (2-tailed)	.104	<.001	.408	.624	.950	.008	.220	.134	.769	.015	<.001	.587	<.001	.	<.001	.003	.508
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	trust_1	Correlation Coefficient	-.153*	.387**	.093	.164*	.051	-.098	.070	.352**	-.132	.103	.139*	-.025	.193**	.260**	1.000	-.274**	.307**
		Sig. (2-tailed)	.031	<.001	.192	.021	.471	.169	.323	<.001	.063	.145	.049	.730	.009	<.001	.	<.001	<.001
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	human_ans_1	Correlation Coefficient	-.008	-.268**	-.107	-.122	-.048	.183**	-.048	-.233**	.326**	.049	-.145*	-.081	-.236**	-.206**	-.274**	1.000	-.272**
		Sig. (2-tailed)	.909	<.001	.131	.087	.504	.010	.504	<.001	<.001	.490	.040	.255	.001	.003	<.001	.	<.001
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200
	channel_pref_1	Correlation Coefficient	-.035	.249**	.213**	.298**	.189**	.080	.206**	.380**	-.312**	.051	.067	-.067	.026	.047	.307**	-.272**	1.000
		Sig. (2-tailed)	.622	<.001	.003	<.001	.008	.261	.003	<.001	<.001	.475	.343	.347	.725	.508	<.001	<.001	.
		N	200	200	200	200	200	200	200	200	200	200	200	200	182	200	200	200	200

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).