

Bachelor Thesis

**Radboud Universiteit**



**Marketing chatbots: how companies can benefit from employing  
bots for communication**

A mixed-method study exploring the opportunities and risks related to chatbots for businesses  
in IT and financial services and their customers

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## **Abstract**

Marketing chatbots are everywhere, some more obvious than others, and as technology evolves, they become even more helpful for the companies employing them. This study aims to identify these opportunities for businesses in the IT-sector as well as those offering financial services. Furthermore, it identifies the risks the opportunities pose for the customers of the companies employing such marketing chatbots. A mixed-method approach combines two in-depth interviews about the opportunities, with employees working in the sectors of interest, and a small-scale survey among 30 students, who will experience the consequences as part of the new generation. The results indicate that both the IT-sector and financial services sector can benefit from using marketing chatbots, as they help qualify leads and facilitate important processes. Students are wary of the safety of data storage and the collection of personal data but feel comfortable using chatbots. This implies that although (marketing) chatbots will likely become more present because of the opportunities they bring, it is important to always keep these privacy concerns in mind.

## **Introduction**

Artificial intelligence, often simply referred to as AI, is all around. As it becomes increasingly more common to use Automatic Speech Recognition (ASR) programs like Apple's Siri and Amazon's Alexa, we (un)consciously start growing accustomed to AI being a part of our daily lives. Not only there, but also when we communicate with things like customer service we now tend to be put in contact with a chatbot – powered by AI – to resolve our questions, only talking to an employee if the bot can't solve the problem. This shift is part of a bigger change in customer relationship management (CRM), where AI is taking on a more prominent role in these processes (Ledro et al., 2022). Here, CRM refers to collecting and managing data to foster good relationships and customer experiences as well as integrating this in the entire firm (Boulding et al., 2005).

It seems evident that the way in which we as human beings communicate is changing along with these developing techniques that are now more sophisticated than ever. The replacement of humans with machines, or rather computer programs, is inevitable and the possibilities of doing so are evermore, although it is debatable whether this is a good development for the people affected by it (Korinek & Stiglitz, 2017). Perhaps the most well-known of these computer programs used to replace human employees is the aforementioned

chatbot, but chatbots come in a variety of forms, many of which we might not even recognize as a bot at first glance.

The definition of a chatbot as found on the website of tech company IBM is “*a computer program that uses artificial intelligence (AI) and natural language processing (NLP) to understand customer questions and automate responses to them, simulating human conversation*”. This means that anything that can be described as a “virtual assistant” – from ASR programs to a customer service bot – designed to answer questions like a fellow human being would, but without a second human being getting involved, is in fact part of the umbrella term of chatbot technology (*What Is a Chatbot?*, n.d.). A similar definition is presented in the Chatbot Report 2018, namely “*A chatbot (also known as a talkbot, chatterbot, Bot, IM bot, interactive agent, or Artificial Conversational Entity) is a computer program which conducts a conversation in natural language via auditory or textual methods, understands the intent of the user, and sends a response based on business rules and data of the organisation*” (EQUITY, 2018). Research has shown that the use of AI significantly impacts the efficiency of customer service (Andrade & Tumelero, 2022), because it allows human employees to attend the more complex issues instead of spending time on simple matters.

Within this technology there is a distinction to be made between the AI-chatbots and the rule-based chatbots. Where the AI-chatbots use machine learning (ML) to continuously get better and ‘learn’ from an interaction, the rule-based bots work with a programmed set of answers and questions, meaning you will only get the desired response if the question is formulated in a very similar way to how it has been put into the program (HubSpot, n.d.). It is obvious that the former will be much more successful at satisfying the customers’ wants and needs, which is probably the reason why these are becoming more common nowadays, slowly replacing the rule-based ones where necessary.

Now that we have a definition of chatbots and know the distinction between the two categories of chatbots, we can look at the specific types of chatbots, either AI-powered or rule-based. The company NimbleWork is “*a leading B2B SaaS provider of collaborative AI-powered Enterprise Adaptive Work and Project Management products and solutions*” and has over 1 million users worth billions of dollars (*About NimbleWork*, 2022). They distinguish 5 types of chatbots (*5 Types of Chatbots That Can Aid Your Business*, 2022) employed in different sectors:

1. Menu/Button-Based Chatbots
2. Keyword Recognition-Based Chatbots
3. Contextual Chatbots

#### 4. Voice Chatbots

#### 5. Social Messaging Chatbots

This means that aside from examples mentioned before, the way we filter a news app to only show us the sports news, make a reservation at a restaurant or movie theatre, as well as searching through a FAQ-page are all moments in which we are interacting with a chatbot. Of course, some of these are more obvious than others, and not all of them have the same efficiency levels, but all of them do benefit the company behind the website or app to some extent.

For the businesses employing chatbots, chatbots are used with different purposes, from improving customer satisfaction to increasing sales. The latter would be an example of where marketing chatbots come into play, which can be either AI-powered or rule-based. Software company Intercom defines marketing chatbots as “*a marketing technique that employs computer programs to automate interactions with prospects and customers, either on your website or in your app, for the purpose of generating sales*” (Barton, 2022). Through this technique, questions can be answered, leads can be qualified, and customers can be upsold. Depending on the purpose of the particular bot, it will be rule-based (recommending products) or powered by AI (providing real-time help through customer service). For the businesses that have such bots on their apps or websites, the main benefit is being available 24/7 and helping guide customers to the products of interest to them and consequently towards buying a product/service (Kaczorowska-Spychalska, 2019) .

An example of research that investigated the effect of such conversational commerce bots found that when these chatbots have a specific product on which they are an ‘expert’ – due to being designed with expertise cues – not only did customers view the bots as possessing expertise, it also became easier for them to trust a platform and even increased the intention to purchase a product (Liew et al., 2021). However, convincing people that the chatbot had the user’s best interest in mind or that it is a moral program turned out to be a lot harder. Similarly, a different group of researchers examined millennials’ attitude toward chatbots and found that the tone of a chatbot can have a positive influence on attitude (De Cicco et al., 2020), specifically that using a socio-emotional tone enhances the idea of a ‘social presence’, which affects trust in a marketing chatbot.

The question is, which sectors currently gain the most from employing AI. According to a report by ING Sector Research, as described in Business Insider Nederland (Kuin, 2020), the three sectors for which the added value of AI is highest, are the IT-sector, corporate services and financial services. The criteria set to draw this conclusion who were the largest (external)

customers for the IT-sector; the data dependency (and management) of a sector; and to extent to which ICT contributes to productivity in the sector. Based on these criteria it comes as no surprise that the IT-sector itself will benefit the most, but it is interesting that the potential for corporate and financial services in product and process innovation is also ranked highly. Examples of ways in which AI can be employed in these sectors named in the report include cyber security, customer service, fraud detection and analysis of documents and processes (Kuin, 2020).

As beneficial as these developments in AI and chatbots are for the companies using them to collect data about their customers and improve their services, there is a different side to the growing presence of AI: privacy issues. Privacy can be defined as the sharing of personal information between parties in an appropriate manner, important to note is that this is almost always contextual, not every situation requires the same amount of personal data to be shared (Sanfilippo et al., 2021). Wherever there is an opportunity for a business, there is a risk for customers, because the data that is collected on different platforms or through different channels concerns personal information. If a company is hacked, all this personal information can be used for malicious purposes. However, setting aside a scenario of cyber crime, even just companies having this much information about customers – which is often more than strictly necessary to serve them – can be regarded as an intrusion of privacy because the clients might not want a company to have certain information. It becomes an even bigger issues when customers aren't aware that a company is collecting certain data in the first place. Research backs up assumptions like these, showing that privacy concerns negatively affect the attitude toward chatbots and with that, the intention to use the technology (de Cosmo et al., 2021). Furthermore, it has been proven that the main influences on privacy concerns are creepiness (ambiguity of human vs. machine interaction), perceived risk and need for privacy (Bouhia et al., 2022). This means that the attitude toward chatbots collecting personal information is in line with the attitude toward standard online data collection and that people who are generally wary of data collection continue to feel that way when interacting with chatbots. It is important to keep these privacy issues and concerns in mind when working with a marketing chatbot, because customers have a limit to what information they feel comfortable sharing with a computer program that saves their data (even if it is used to further personalise an experience).

A great example of where these privacy issues meet one of the sectors that will benefit most from AI, namely financial services, is in the case of chatbots handling financial transactions. This concerns a great amount of personal information and led Bhuiyan et al. (Bhuiyan et al., 2020) to develop a blockchain empowered chatbot in order to better protect

this data and alleviate the issues previously presenting itself. In another study, they looked into the understanding managers working in financial services had of AI and their awareness of opportunities related to AI (Mogaji & Nguyen, 2021). They found that although the awareness is there, speeding up the implementation of AI poses a challenge for these managers. Interesting is that the focus is already on the marketing aspect of said financial services and Mogaji & Nguyen (2021) used their results to develop a framework (of AI in marketing) to show the relations between different the stakeholders in these financial services companies.

For this reason, the purpose of this paper is to focus on studying the business opportunities related to chatbots – specifically in customer service and facilitating processes – for Dutch companies in the IT-sector and financial services through an interview-based method, while also looking into the privacy issues that these opportunities might present for customers with the help of small-scale survey among students to ask them about their experience with chatbots. It is relevant to do this to create awareness surrounding the opportunities that chatbots offer for businesses, but also the risks they pose for consumers. On top of that, the future of communication changes along with technological changes, making certain jobs less complicated or simply redundant. Simultaneously, it will approach chatbot research from a different angle. Although there is research on marketing chatbots, there is barely any, if any, research into the opportunities for (Dutch) companies in specific sectors with the changing communication technologies.

Therefore, the research question is: *how can companies in the IT-sector and financial services benefit from marketing chatbots? – and what are the consequences for customers?*

## **Methodology**

The study employed a mixed-method research method for the reason that it could gather useful information about the business opportunities (and their risks) from the perspective of businesses meanwhile investigating the knowledge of and experience with chatbots among the new generation (students), who will probably be impacted the most by these opportunities and possible consequences in their daily lives but also their future workplaces (based on educational level). Moreover, students are likely to be most open-minded about these technologies as they have grown up with technology whereas other (older) generations use these technologies to varying degrees, making it more difficult to get a representative view through a survey. Both interviewees and survey participants were informed about the research and asked to consent to taking part in the research.

In order to gain deeper insight on the opportunities from the perspective of a business in the IT-sector and financial services, a semi-structured (in-depth) interview research method was used. This meant approaching companies in these sectors and asking them questions related to whether they currently employ chatbots for marketing purposes, how these chatbots collect the data necessary to serve customers and how data is stored, as well as figuring out if the people responsible for the use of AI in communication techniques are aware of the advantages of chatbots and if they think it can eventually lead to human beings becoming redundant in certain aspects of marketing – here ChatGPT was also mentioned. Due to limited time and resources, a total of two in-depth interviews were conducted, the purpose therefore wasn't being to make assumptions about entire sectors, but rather taking a first step into researching the opportunities, which might also be applicable to other companies in the same sector. The first interview was with an employee of a financial services company that wants to simplify insurance and become a financially independent supermarket, referred to as Company A from now on. The second interview was with two employees of an IT-company that develops and provides innovative software for property and facility management, referred to as Company B from here on out. This allowed for a comparison between the two companies (and sectors on a broader scale) – are marketing chatbots equally beneficial in different contexts? The interviews were audio-recorded and transcribed for the analysis, making it possible to code for the current situation; the advantages of using chatbots; the opportunities and/or future plans; consequences for human employment (current and future); and the collection, storage and management of data. This coding method is based on the theory of thematic analysis (TA) by Clarke & Braun (2006, 2017), a method that analyses and reports patterns in data from qualitative research by creating codes of analysis and then grouping these codes into bigger themes that let a researcher interpret the gathered data. It can be used for data sets ranging from two to dozens of interviews of both homogenous and heterogeneous samples. After the coding process, in which the choice was made to create themes based on the general topics of interview questions, similarities and differences between Company A and B were inferred by interpretation of the data. The coding was done by one person (the researcher).

The second part of the research was concerning the privacy issues, which asked students about their knowledge of and experience with chatbots, as they are the new generation who will likely experience the consequences of the opportunities chatbots offer businesses. This was done with the help of an online survey in English, which contained 4 questions for descriptive statistics, followed by 16 questions, both multiple-choice and open questions, about knowledge of and experience with/opinions about chatbots. After the question “what is a



chatbot? Describe in your own words” and 3 examples images with the question “do you think this is a chatbot?”, the definition of a chatbot as provided by IBM was given to ensure that participants were aware of what qualifies as a chatbot for more accurate answers to the follow-up questions about their experience with (the use of) chatbots. The sampling method used to distribute was snowball sampling, through which a group of 33 students at Dutch universities (of applied sciences) were reached. This survey made the perceived risks and privacy concerns students might have when it comes to chatbots tangible. For the analysis of the data, the intention was to find the consensus among participants about the topic at hand, which was done without the use of statistical tests, both due to limited resources and because there was no intention to test correlation/causation between variables or find differences between experimental conditions. This way, it was aimed at finding the general sentiments and perceived risks or issues among the participants rather than finding statistically significant differences. For the open questions this was done through looking for keywords in the participants’ answers, finding the most common ones, while identifying the most common answer(s) for the multiple-choice questions. The results may provide useful insights for a variety of businesses currently employing chatbots in relation to the needs and wants of (possible) customers.

The interviews were conducted before the survey to leave room for changes in response to the interviews. All but one of the questions were already written along with the interview questions, but after conducting the interviews it was decided to add a question about the general satisfaction with chatbot conversations before sending it out to participants.

## **Results**

### **Interviews**

The interviews revealed that there are notable differences and similarities between the two companies and their respective sectors. To start off, when it comes to the current situation of the two companies, Company A currently employs a chatbot not aimed at marketing, but rather at customer service. It asks the person visiting the website to state their ‘role’ in order to allow the chatbot to answer their questions appropriately. In the past, they have attempted to ‘sell’ a chatbot as part of their product to the connected advisors, but it soon became clear the market was not yet ready for that. As for Company B, their chatbot is built for marketing purposes, its focus being to qualify incoming leads as marketing or sales qualified by gathering information and making sure these leads can be forwarded to the sales team. What is the same

about the set-up of these two chatbots, however, is that both are rule-based, the interviewed companies having purchased the technology from a provider. This means that employees of Company A and B have programmed a set of questions and answers they expect from people visiting their websites. Company A's chatbot does have a Machine Learning aspect, being able to identify questions that might be aimed at the same answer and asking if that question can indeed be answered the same as the programmed question leading to the same answer.

Another notable difference is that for Company A they assess how successful the chatbot is by looking at the percentage of times a question has (not) been answered adequately. For now, they are happy with the percentage the chatbot can provide a correct answer to, meaning the chatbots functions as they intended. In the case of Company B, there are no such requirements, as explained by the employees of Company B:

We're in a user group of [the provider] and what did we find out? This is the case industry-wide, (...) Everyone in our group had problems getting those figures above the conversion rate of more than 2-3% and for normal forms you are sometimes at 20-30%, so there is a really big difference in that so chatbots in themselves are sometimes quite difficult for us, because the conversion rate is really low relatively.

The conversion rate here meaning the amount of people that actually end up downloading the Buyer's Guide after clicking on the chatbot symbol, thus moving on to the next step in the process of becoming a (qualified) lead. Although the number of leads is low, almost every single one of these leads actually becomes either marketing or sales qualified. The qualifying is done through a scoring system, taking into account which information about the visitor is (not) known to Company B, and trying to obtain more information throughout a chatbot conversation, or a contact form, in order to elevate the score.

Additionally, the two companies differ on the provider of their chatbot, Company A is currently working with a provider on European soil, therefore bound to the legislation of the European Union, while Company B is currently working with a provider on American soil, therefore bound to the legislation of the United States of America. This is reason for Company B to want to switch to a provider based in Europe, as the legislation of the U.S.A. allows the government to access a company's data at any point in time, whereas European legislation is much stricter when it concerns privacy matters. However, Company B is strict about which data they collect from their clients, legally bound to the European General Data-Protection

Regulation law (GDPR, or AVG in Dutch), that obligates them to tell (potential) clients which data they're storing as well as not being allowed to store certain information in the first place. The interviewee for company A also explained:

There is a roles and rights system [in the cloud provider] so that means certain senior people have more insight than junior people, (...) those are principles we have to make sure that data 1) is not accessible to everyone 2) is in a secure place and 3) cannot (...) be seen by just anyone.

On the topic of the advantages and disadvantages of chatbot, both the interviewee of Company A and the interviewees of Company B were able to name multiple of both, some specifically applicable to their sectors, some others more general. A disadvantage that was mentioned in both interviews is the fact that you will always need a form of control to make sure the chatbot functions as intended, which is currently being handled by employees of the companies. During the interview with company A, it was also mentioned that there is not a lot known about automated advice, something that makes it hard to say how this might impact the sector. As for Company B, the interviewees pointed out that the costs of a proper AI-chatbot can be around 80.000 euros a year, which is rarely viable. On the other hand, the rule-based bots that use similar questions to answer your own, hardly ever provide the answer you're looking for. The last disadvantage is something that could happen as a consequence of developments of chatbots like ChatGPT, namely external chatbots providing answers that satisfy someone enough to the point where they no longer visit the company website as there is no need to – as compared to current search engines that only show a preview and require you to visit the website.

Luckily, both companies also saw several advantages in using (marketing) chatbots. The chatbots allow a company to help clients in a more active way; provide better aftercare (staying updated on someone's situation); and separate the easy from the complicated questions or requests. Not only that, but there is also the possibility of data enrichment through closer contact with clients – improved customer knowledge contributing to findability on search engines like Google. On top of that, in the interview with Company B, the open source chatbots were brought up, these are chatbots that when programmed with the right know-how can easily provide added value. There was also the answer that chatbots can continuously be trained with new data, which also plays into the aforementioned advantages, most of which relate to higher efficiency.

Concerning the possible consequences for employment, the interviewees from both companies felt that it is not so much the case that people will be become redundant, but rather that the interpretation of certain jobs will change. As elaborated by the employee of Company B:

(...) then it just removes some of the work and not all of it, (...), I don't believe that [you can shut down a helpdesk], there will always be questions that really require human knowledge.

Therefore, there is no 1-on-1 replacement of humans by chatbots. Marketing departments, like other departments, are likely to experience changes due to computerisation. Important to mention is that for Company B this 'replacing' is not applicable due to the nature of their product.

As for the future opportunities, the answers were more sector specific for the most part. For example, the interviewee from Company A saw possibilities in relation to processes like concluding a product (insurance) as long as this can be done in an ethically responsible manner. Similarly, the chatbot could help when filing damage claims, or just help in general when it sees people getting stuck while filling out a form as well as aiding in the process of communicating changes in someone's life that are relevant for insurance. This would not only be useful for Company A's online (direct) clients, but also for the advisors linked to Company A, who would take on a specialist role instead of doing generalist work. For this reason, they're looking into using more technology in the chatbot that will allow them to work with 'intents', thus immediately asking people what they're looking for.

In the interview with Company B, the opportunities of deploying your own chatbot was deemed to have added value compared to the scripted bot that are currently being used. By analysing one's own website through data scraping/data crawling possible questions and answers can be detected and compiled, thus making it possible to create that added value. Moreover, the chatbot could become part of the service they offer by uploading manuals, which creates a bot with expert knowledge that is available 24 hours a day to answer technical questions. With these changes, there will be a shift from rule-based to Machine Learning bots, which plays a big part in increasing the efficiency – although it should be mentioned that as of right now the marketing department of Company B cannot operate independently, which also affects the efficiency of their work.

Finally, the interviewees were asked about their experience with and opinions about ChatGPT. In both interviews, it was mentioned that it is a useful for writing and makes work more scalable, but one of the interviewees from Company B pointed out some other uses as well as possible consequences. Examples of other uses being that ChatGPT can summarise a patent or find a chemical formula that excludes certain elements. However, a possible risk of ChatGPT that was mentioned, when it supports plug-ins, is that it could be a threat to search engines. This is based on the assumption that when ChatGPT answers someone’s question with the essential information, they may no longer feel the need to visit the website, which means you need to be in the top 3/5/10 within in your sector to be relevant in these chatbots’ answers. As this could lower the number of incoming leads, it becomes even more important to have a well-functioning marketing chatbot since these marketing chatbots help qualify leads.

## Survey

Out of the 33 participants who filled out the demographic questions of the survey, 31 continued to the questions concerning their knowledge of and experience with chatbots. The 33 participants were ages 18 to 38, with an average age of 21.39, of which a majority is female as can be seen in Figure 1. Most participants (42.4%) mentioned Communication as their Field of study; followed by English (15.2%); then Business (12.1%); and Medical imaging, Leisure & event management, Social studies (6.1% each). The remaining 4 participants were spread from Psychology to Art and more. Most of these participants were students at a University (69.7%), the rest were students at a University of Applied Sciences (30.3%).

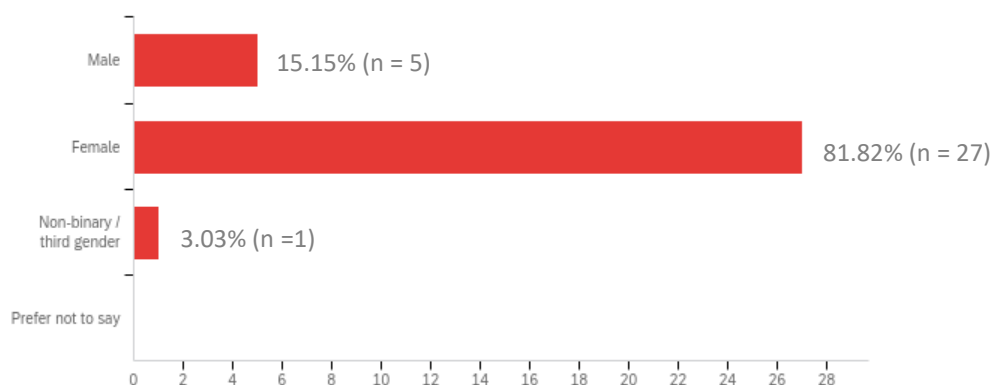


Figure 1: Answers Q2 “Gender”.

When prompted to describe a chatbot in their own words, most participants mentioned the elements of an AI-generated program or computer/software/tool that is able to (automatically) answer questions/have conversations with a human being. Some mentioned the AI on its available data to do so, others named the pre-set answers to common questions as well as the mimicking of human intelligence/behaviour. One answer also stated that chatbots take away simple tasks so employees can focus on the other ones. There was a mention of chatbots being automated messages with advertising (catered to you) as purpose. The follow-up questions about three examples of chatbots with the question “Do you think this is a chatbot?” got mixed replies. For the first example, 77.4% of participants were able to identify the chatbot (Figure 2), contrary to the second and third example, where 80.6% and 77.4% respectively did not think the images showed a chatbot.

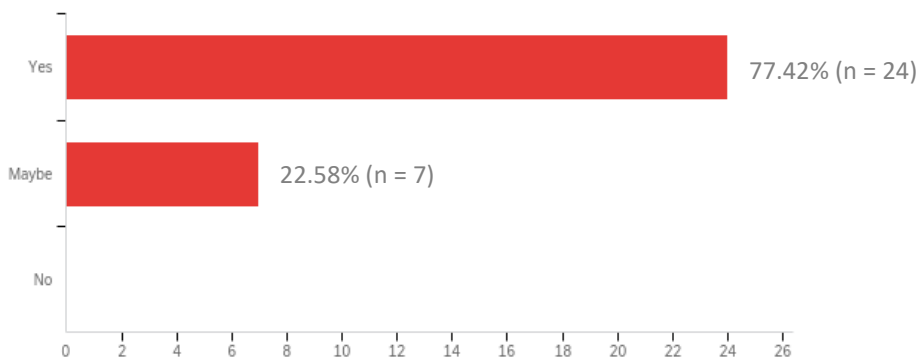


Figure 2: Answers Q6 “Do you think this is a chatbot?”.

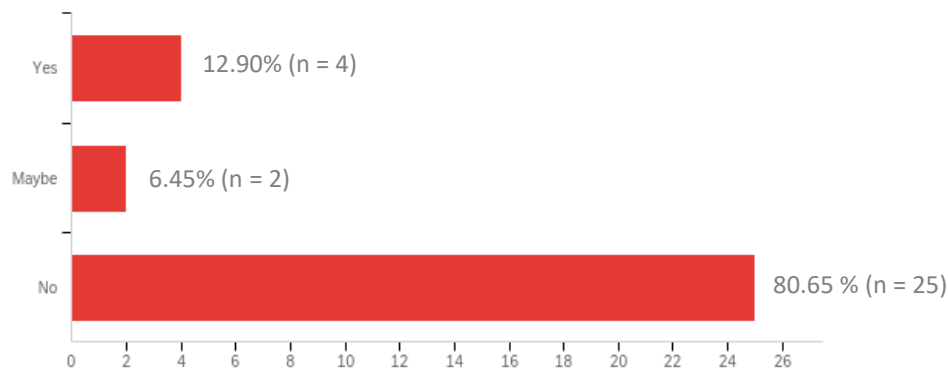


Figure 3: Answers Q7 “Do you think this is a chatbot?”.

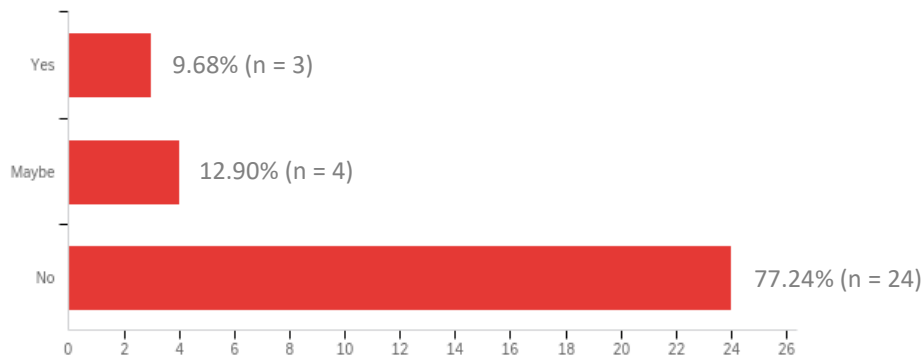


Figure 4: Answers Q8 “Do you think this is a chatbot?”.

Participants were asked to answer questions about this experience with chatbots after being given a definition and short explanation. As can be seen in Figure 5 and 6, there is a clear difference between participants encountering a chatbot and using a chatbot – the frequency of the latter shifting from regularly/often to sometimes(/regularly). Participants were allowed to give multiple answers for the context in which they used chatbots, which turned out to be pretty evenly distributed across the answer options (Figure 7).

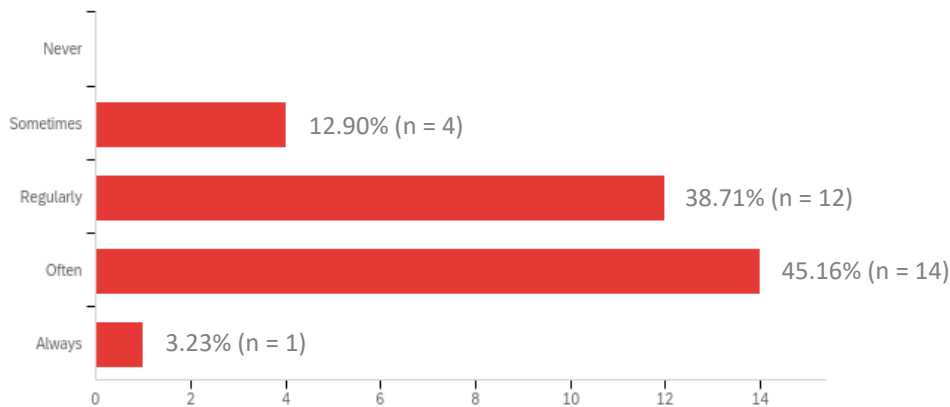


Figure 5: Answers Q9 “How often do you encounter a chatbot?”.

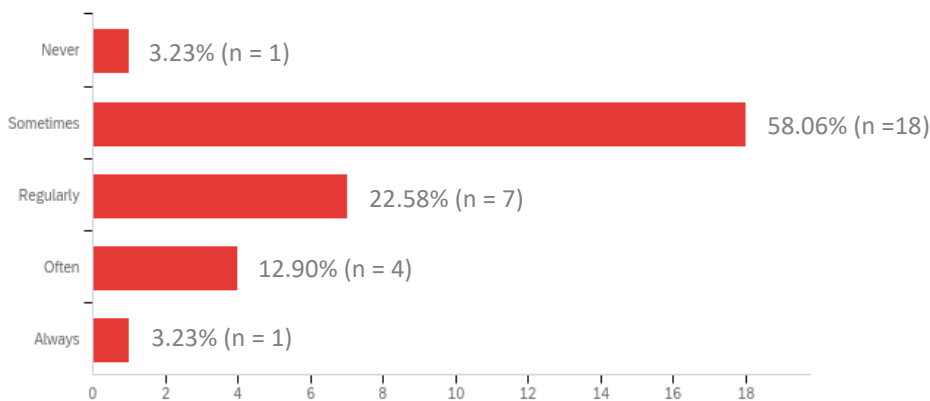


Figure 6: Answers Q10 “How often do you use a chatbot?”.

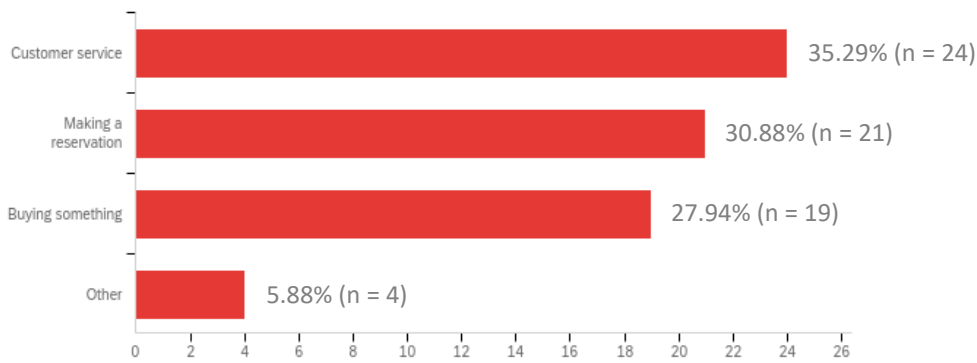


Figure 7: Answers Q11 “In what context?”.

Consequently, the questions about general satisfaction and comfortability showed participants were sometimes/regularly satisfied (Figure 8), but would want to be redirected to an employee when this was not the case (Figure 9). The majority of participants also indicated being comfortable with using a chatbot (Figure 10) – those who weren’t comfortable or unsure were asked to explain why. Their answers ranged from not getting an appropriate answers to not knowing what to think of chatbots since it’s a relatively new technology, as well as feeling that it could be annoying since it’s not a real person.

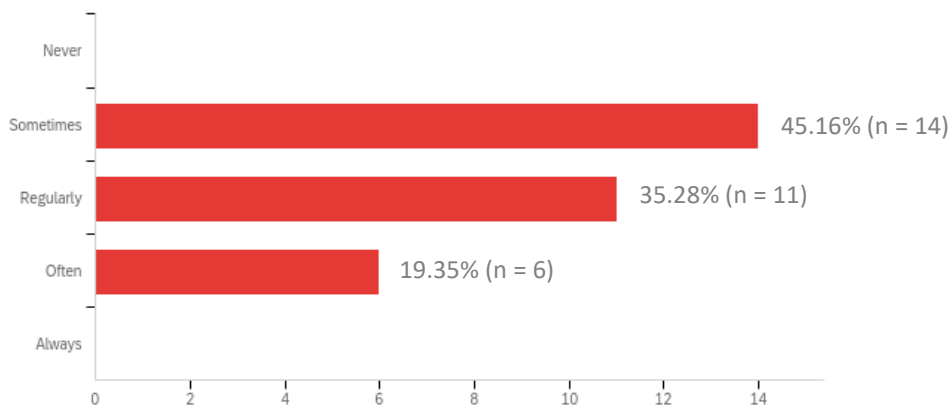


Figure 8: Answers Q12 “Are you generally satisfied with the results of a chatbot conversation?”.

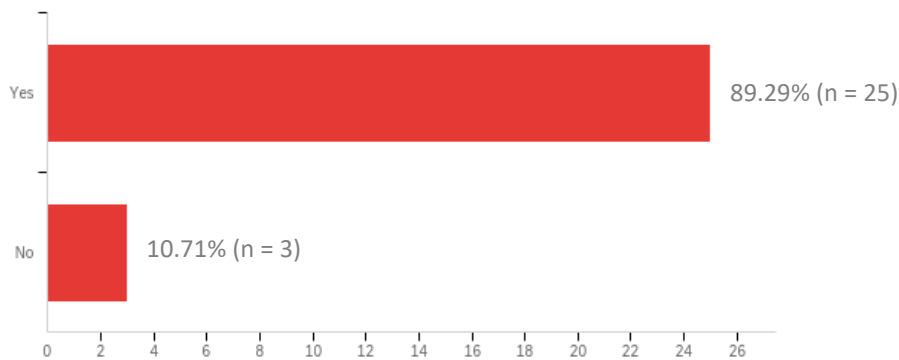


Figure 9: Answers Q13 “When you’re not satisfied, do you want to be redirected to an employee chat?”.



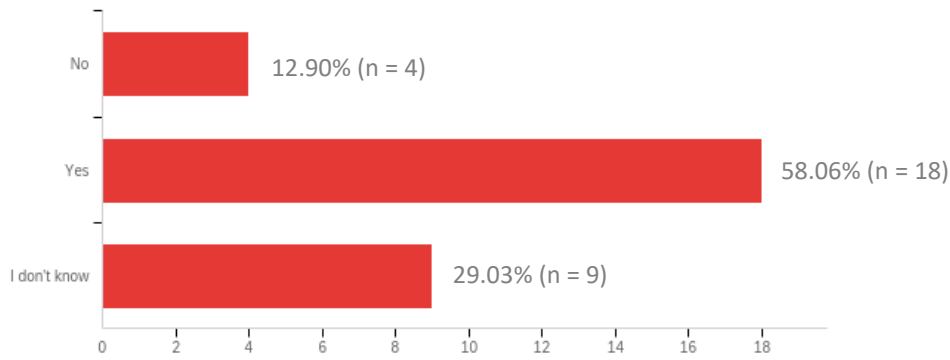


Figure 10: Answers Q14 “Are you comfortable using a chatbot?”.

Questions 16-19 were aimed at the participants’ thoughts about (the security of) data storage. They were sure that at least part of the data collected by a chatbot was stored, but weren’t unanimous about whether this is all or just some data (Figure 11). Similarly, the participants were divided about whether the data, if saved, is stored safely, with about half of them saying no (Figure 12). This also reflects in the answers to whether participants have ever encountered a situation in which they didn’t want to give a chatbot certain data (Figure 13) and if yes, when and why. Here, a majority said this type of situation exists, with the main reason being that they’re being asked to give sensitive/personal/private information like bank or log in details, followed by not trusting a website or the security of data storage – hacks or data leaks. They also argued the information not always being relevant or algorithms being built to benefit the makers, who might not have ethical intentions.

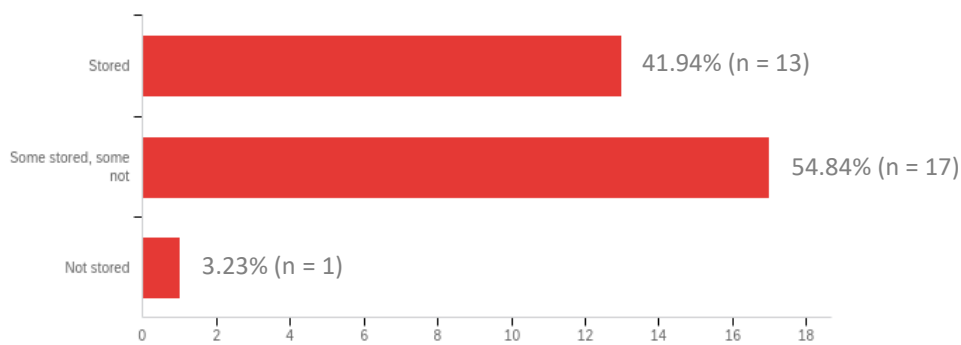


Figure 11: Answers Q16 “What do you think happens with the data you give a chatbot?”.

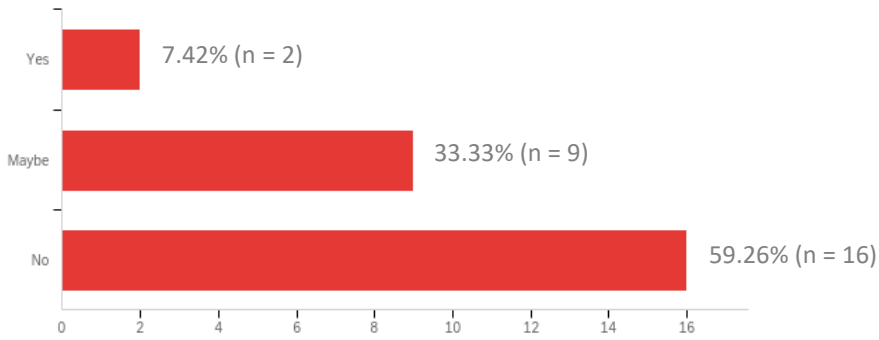


Figure 12: Answers Q17 “Do you think this data (if saved) is all stored securely?”.

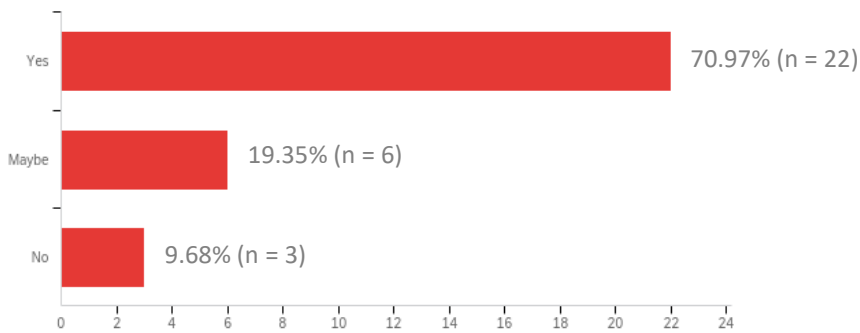


Figure 13: Answers Q18 “Is there ever a situation where you don't want to give a chatbot certain information?”.

The last question about whether chatbots will become more common in the future also received almost exclusively positive answers as shown below in Figure 14.

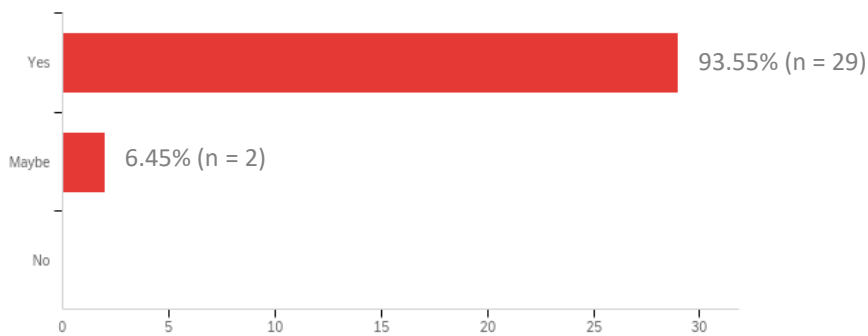


Figure 14: Answers Q20 “Do you think chatbots will become (even) more common?”.

## Discussion

### Interviews

Based on the interviews it can be said that both of the interviewed companies are already well-aware of the importance of AI, which shows in the fact that both Company A and B have an active chatbot on their website. This reflects the shift in CRM that is currently taking

place on a much bigger scale in order to improve relationships with customers and their experiences (Boulding et al., 2005). Moreover, it became clear that although humans are being replaced with computer programs in the form of chatbots among other things (Korinek & Stiglitz, 2017), the interviewees noted that the situation is not as black and white as it seems. Where one job might change, the opportunity for fulfilling that same job in a different way opens up – and if a job does disappear there is likely also a new one created elsewhere since you can never fully replace humans in communication. The human aspect of communication is simply too important to get rid of human employees in customer service or marketing altogether. While services might become more efficient by granting human employees the possibility to focus on the more complex issues at hand thanks to a chatbot resolving the simple questions (Andrade & Tumelero, 2022), a company will still need its human employees to assist customers with these complex problems.

The results of the interviews indicate that while the chatbots currently deployed are rule-based, it would be ideal to have chatbots that fully function on ML as the success rate of the latter is much higher since they don't work with programmed questions and answers (HubSpot, n.d.). The problem is that these AI-chatbots that use ML are still very expensive compared to the rule-based ones and therefore not viable for the great majority of companies, regardless of being a market leader or not. Thus, it is reasonable to ask the question whether it is realistic to expect AI-chatbots to replace every single rule-based bot – at least short-term.

The answer to this question obviously depends on more than just the available money (and viability) since not all chatbots have the same purpose and the answer might differ for different purposes. For example, a marketing chatbot could either have the purpose of recommending something (which can still be rule-based) or processing and consequently learning from the customer service conversation at hand (for which AI-powered technology is much more beneficial). Both of these chatbots have the same final purpose of qualifying leads and generating sales (Barton, 2022), but have different ways of reaching this goal, neither of which is better than the other by definition – as long as they're available to customers anywhere, 24 hours a day, to help them find the products they want and purchase the product/service (Kaczorowska-Spychalska, 2019).

Furthermore, on the topic of chatbots with expertise cues, it appears that these chatbots that have been programmed with 'expert' knowledge could provide added value to both Company A and B. In the case of Company A, they could use this to their advantage in making processes like damage claims less complicated and quicker, as this is a development that's already being worked on in their sector. The same goes for Company B, where manuals can be

used to train a chatbot so it can help resolve more complex questions as well so customers might not have to wait until an employee with said expert knowledge is available to help. Not only would it be beneficial for overall efficiency, it could also improve trust in the platform and purchase intention (Liew et al., 2021).

Lastly, it is important to mention that the findings of the interviews seem to correspond with the ING Sector Research Report, as described in Business Insider Nederland (Kuin, 2020). Both the answers of the interviewee from Company A, in the financial sector, and the interviewees from Company B, in the IT-sector, comply with the idea that their respective sectors can find great added value in using AI. This is not just because it makes customer service easier, but because the sectors are dependent on data and ICT contributes to improved productivity. While there might be differences between the two sectors, marketing chatbots appear to have a use for both Company A and B as the interviewees of the respective companies either indicated they see potential future use for it or that they are already using a marketing chatbot.

## **Survey**

On the other hand, it is apparent that the privacy concerns surrounding chatbots are ever-present in the minds of students. The majority of participants (71% yes, and 19.4% maybe) answered they have found themselves in a situation where they didn't want to give certain information, which is an overwhelmingly large group. It should be noted that this isn't necessarily contradictory with the 61.3% of participants that said they felt comfortable using a chatbot, since the comfortability is about chatbots in general and not directly linked to the reasons given for not wanting to give a chatbot certain information in specific situations/instances. Doubts about the security of a website, fear of hacking, or morality of chatbots (as mentioned in Liew et al. (2021)), as well as being asked personal information don't have to apply to every instance in which a user encounters a chatbot. The example of being asked for data that might not be relevant in the eyes of users is related to one of the key aspects of privacy, context, as not every situation requires you to share to the same personal data (Sanfilippo et al., 2021). Moreover, it is important to bring up the storage of collected data here, as most participants were sure that either all data (42%) or at least part of the data (54.8%) is stored. At the same time, participants said they think this data is not stored securely (59.3%) or are unsure (33.3%) whether it is done securely. This relates back to privacy concerns likely impacting the willingness/intention to use the technology as found in previous research (de

Cosmo et al., 2021) as well as the explanation that perceived risk, creepiness and need for privacy influence privacy concerns (Bouhia et al., 2022).

Additionally, the survey showed that participants will most likely be able to identify a customer service chatbot, but will probably have more trouble identifying a marketing chatbot. This difference can be explained through the reasoning that marketing chatbots don't really 'respond' to a human user, but rather interact by showing options/recommendations that have the goal of increasing sales (Barton, 2022) – instead of making conversation as the first part of chatbot, 'chat', implies.

Participants also indicated that although the majority encounters chatbots regularly (38.7%) or often (45.2%), they do not use the chatbots with the same frequency, most participants choosing sometimes (58.1%) or regularly (22.6%). This use is almost equally spread over the contexts of customer service (35.3%), making a reservation (30.9%) and buying something (27.9%), which could indicate that the marketing chatbots are already decently integrated into the participants' daily lives. The general satisfaction of participants when using these chatbots seems to show that chatbot technology still has (a lot of) room for progress, as the majority says they are satisfied either sometimes (45.2%) or regularly (35.5%), rather than often (19.3%) or always (0%). Similarly, 89.3% answered that they would prefer to be redirected to an employee when not satisfied with the results, which would lead one to believe that employees remain a necessity in customer service and marketing.

Regardless of opinions about privacy concerns related to chatbots, the frequency of use and general satisfaction of chatbots conversations, participants are almost unanimous about the idea of chatbots becoming more common, with 93.5% answering yes and the remaining 6.5% answering maybe. This could be related to the notion of opportunities for businesses, created by AI, going hand in hand with consequences for the privacy of consumers as it looks like although participants are hesitant about their privacy and satisfaction, they seem convinced that chatbot technology will continue to expand irrespective of that.

### **Limitations & Future studies**

One of the limitations of this study is the number of interviews conducted, as limited time and resources made it difficult to find other companies that might have been willing to do an interview as well. Due to this limitation, it cannot be said whether the findings of the study can be generalised to the financial services and IT-sector as a whole, at most it gives an idea of what the situation might be like as there is no data to compare the results to. Furthermore, the job positions of the interviewees weren't the same, which could have influenced the knowledge

about certain specifics with regard to either the technology or the marketing aspect/application. As for the limitations of the survey, the sample isn't representative of society as a whole as it consisted of mostly female students at higher educational levels, it is therefore impossible to say what men or people with a lower educational level know or think about chatbots. The same goes for people who are in the working population or have already retired, as it is likely that opinions as well as knowledge will differ between individuals from these distinct demographic groups. Moreover, since the survey was distributed through snowball sampling, even though there seems to be a clear trend, the sample might not be representative for the entire student population, as students from different backgrounds/fields of study might know different things/feel differently about the development of these chatbot technologies. With about half of the participants studying Communication and the other half was spread over a number of different studies, it's probably not as representative for their study as for those studying Communication. Lastly, the survey could maybe have included more specific questions, although this could impact the number of students dropping out as they may perceive this as too technical or hard to understand.

Future research could investigate into the opportunities of chatbots within the financial services and IT-sector at a larger scale by interviewing some of the biggest players in the industry. It could also be interesting to see if companies within these sectors in a foreign market have similar perspectives on the use of chatbots and possible future applications. Additionally, it might be of interest to interview top management about this topic, opportunities and risks, as it could reveal whether the people running these businesses are aware of the changes in communication technologies. It might also be of interest to ask different demographic groups of the population about their knowledge of and experience with chatbots as this could present valuable new insights in relation to someone's age/educational level/position in society. Similarly, using a bigger sample of the student population or looking at the opinions in a specific Field of study (e.g. Technology, Education, etc.) might show whether the findings of this study are indeed more widely applicable to the general Dutch student population or not.

## **Conclusion**

The research question: *how can companies in the IT-sector and financial services benefit from marketing chatbots? – and what are the consequences for customers?* can be answered as follows:

Based on the insights of Company B, the main benefit of a marketing chatbot for Dutch companies in the IT-sector is being able to qualify the incoming leads by asking the questions that will provide the company with the necessary information about a potential client so this client can be moved to the next stage where they meet with the sales team to buy their product/services. For their customers it becomes easier to get in touch and get the information necessary to know whether they want to buy/use the product/services. Based on the insights of Company A, the main benefit of a marketing chatbot for Dutch companies in the financial services sector would be facilitating processes like concluding a product (insurance), filing damage claims, or updating personal information necessary for insurance by having the chatbot ask questions about the problem/situation or jump in when someone gets stuck because of doubts. For their customers this would make it easier to fill out forms or find the right product without having to contact an employee with questions. Due to the way of collecting storing data, customers of both Company A B do not have to worry about privacy issues, but the privacy of customers should always remain a priority in a company's policies.

This privacy matter seems to be the main discrepancy, the survey participants appearing wary of the safety of data storage and not wanting to give out certain information, while Company A and B put a lot of effort into safely storing the collected data. However, it is difficult to say whether this same sentiment of doubt applies to the customers of the interviewed companies, since the target group of Company B is multinationals/governmental institutions and the target group Company A is separated into two groups, with some students possibly fitting into the online target group, while other students might not.

It does look like the companies and survey respondents agree on the fact that chatbots will only become more omnipresent in the future, as the interviewees mentioned that tools like ChatGPT can be useful as well as chatbots making the work of customer service employees more efficient by taking away the simple tasks – also mentioned by a respondent. Moreover, they seems to agree that human employees will not become redundant, because the far majority of respondents wants to be redirected to an employee when the chatbot cannot answer their question (which still happens regularly), the possibility of which was also mentioned during the interviews as being essential.

In conclusion, this study indicates that while there is a lot of room for improvement and new applications of (marketing) chatbots, the future looks promising. If companies are transparent about data collection and storage, they might be able to take away doubts about privacy, so people become more comfortable with using chatbots (and giving data), which could ultimately benefit both sides.

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