Chatvertising:

how chatbots are shaping the future of advertising.

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Chatvertising:

como os chatbots estão a moldar o futuro da publicidade.

Resumo (PT): Um novo consumidor exige novas formas de relacionamento e comunicação. Com o desenvolvimento permanente e rápido das novas tecnologias e o surgimento das ferramentas digitais, as marcas tiveram que se reinventar para enfrentar as exigências de um consumidor mais informado, rigoroso e digitalmente ativo. Os *chatbots*, suportados por inteligência artificial, são uma das ferramentas criadas para interagir e manter uma conversa sem a necessidade de presença humana, que também estão a ser utilizados com objetivos comerciais. Este artigo analisa e tem como objetivo compreender todo o potencial deste novo meio para a Publicidade.

Palavras-chave: Inteligência Artificial, Chatbots, Publicidade; Envolvimento; Comunicação Personalizada.

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Abstract (EN): A brand-new consumer demands new ways of relations and communication. With the permanent and fast development of the new technologies and the rising of digital tools, brands had to reinvent themselves to face the demands of a more informed, rigorous, and digitally active consumer. Chatbots, supported by artificial intelligence, are one of the tools created to interact and maintain a conversation without the presence of humans that are also being used with commercial objectives. This article analyses and aims to understand the potential of this new medium.

Keywords: artificial intelligence; chatbots; advertising; engagement; personalized communication

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Introduction

The emergence of the internet brought, to the field of marketing and advertising, considerable changes that forced a process of adaptation and transformation much faster than ever before. At the same time, the exponential growth of new technologies and the enormous development of artificial intelligence that we have seen in recent years have been changing, among many other social aspects, the way brands communicate with their customers. One of the tools that has gained traction in recent years is conversational robots, an automated technology that works without the need for human assistance. Thus, this article explores the relationship between this new digital paradigm that we're currently living and the potential that chatbots could bring for commercial communications. The authors believe that, besides the inevitable risks, there is a huge opportunity with benefits for brands, for the advertising industry as well as for consumers.

Advertising is becoming Intelligent

In definition, advertising is a form of paid communication, whose sender is always identified, which uses mass media to reach its audience is intended to persuade the receiver to perform a certain action (Wells, Burnett & Moriarty, 2000). Advertising today surrounds us everywhere, every time, and has become so excessive that people had started to look to this traditional form of commercial communications with indifference. To regain the audience's attention, brands need to find new ways to approach and engage with these ever-demanding consumers, that are increasingly asking brands for instant communication, as well as profitable and innovative solutions that meet their needs. Not only the content needs to be more appealing and creative, but also the media channels ask for new and engaging technology innovations and developments.

Today's interactive marketing is characterized by a bidirectional flow of communication between brands and consumers, that allows consumer participation and interaction in real time. This is enhanced by the latest technological developments, especially artificial intelligence (AI).

According to Collins, Dennehy, Conboy and Mikalef (2021), although AI has a much longer history than it is commonly believed, the term "Artificial Intelligence" was

coined and defined by Jonh McCarthy in the conference in Dartmouth College in 1956, as "the science and engineering of making intelligent machines". In his book called "The singularity is near: when humans transcend biology", Kurzweil (2005) presents a simpler definition, defining AI as the general human-like intelligence.

In the mid-60´s, Professor Joseph Weizenbaum, from MIT, developed the first computer program that could engage in open-ended conversation with a real human being, called ELIZA. The system used a set of very simple mechanisms to answer the questions that were asked, using pre-written phases when it did not understand the question or reformulating the question in slightly different terms. Although the system did not have any real understanding of the conversation, many users were deceived and thought they were talking to a human being (Oliveira, 2019, p. 53-54).

Another inescapable author in this subject is Alan Turing, one of the most influential mathematicians ever, who became known for having contributed to decoding encrypted messages from the German army during World War II. Among its numerous contributions, the analysis of the following question stands out: can a computer behave intelligently as a human being? To try to answer the question if machines could really think, or, in other words, if they can be intelligent, the author designed a model that became known as the Turing Test, which consists of assessing whether a machine could not be identified as such, in an interaction with humans. Although no machine has passed this test, without restrictions, we know that "there are already programs that can sustain short conversations with an interrogator, indistinguishable from those that result from an exchange of messages with a human." (Oliveira, 2019, p. 44). One good example is the chatbots, a neologism that derives from the junction of the word's "chat" and "robot", and the reason why they're also known as conversation robots. The examples of chatbots are everywhere, being the most famous Apple´s Siri, Amazon´s Alexa or Microsoft´s Cortana.

Hello, Chatbot speaking. Can I help you?

Defined as "an automated, yet personalized, virtual assistant capable of having meaningful conversations with users" (Tsai, Liu & Chuan, 2021, p. 460), chatbots can improve the customers experience in the digital platforms since they "increase the

perception of the presence of brand employees" (Carrera and Kruger, 2021, p. 35). Moreover, they can also improve the performance of the relationship between companies and consumers, once machines don't have emotions, don't get tired, never complain, are available 24/24h and never leave the programed speech, making the interaction potentially more efficient, having the final objectives of the organization in mind. As Janarthanam (2017) states, chatbots aren´t just another kind of software, they are very different in terms of the expectations that they create in users. Chatbots are conversational and this ability to process language makes them project a kind of human personality and intelligence.

Another important issue to address in this discussion is the fact that machines can handle and process huge amounts of information, very quickly. This context of Big Data, used to be characterized as the era of the 3 V's: Volume, Variety, and Velocity – volume in the amount of data created, stored, and analyzed; variety in numerous formats (text, video, image, sounds, etc.) and Velocity, whether due to the speed of processing and dissemination of data, or due to the exponential growth and adoption that new technologies have brought. Recently, to these 3 V's, Stanley Loh (2019) added two more: Veracity and Value.

According to Campbell, Sands, Ferraro, Tsao and Mavrommatis (2020), A.I. allied with Big Data gives valuable insights on how to find the right customers, the best way to engage with them and create deeper analysis on the return on investment. This process, called data mining, involves techniques and methods of AI and big data to discover patterns through probability algorithms. The objective is, using the data collected, understand it, categorize it through cognitive computing programs and generate information that adds value to businesses. This fusion of knowledge is quite powerful, as marketers can, from this process, profile their audience and use this information to carry out even more targeted and effective campaigns. In fact, brands can use the A.I. data generated to identify, classify, and present individual messages that most probably will satisfy the information needs of the consumers in specific moments (Kietzmann, Paschen & Treen, 2018). Moreover, this can be used not only in the research and purchase stages of the buying behavior, but also in the after-sale moment. The use of chatbots can reduce the solving problems time from one and half days to 5 minutes,

besides it helps to identify the most valuable clients and, at the same time, evaluate the possibility of "re-engagement" of those customers (Kietzmann et al., 2018).

Rust et al. (2019) also demonstrated that by using A.I.-based text analysis on social media, it was possible to monitor the evolution of a brand's reputation over time.

As stated by Tsai et al. (2021, p. 460), powered by artificial intelligence, chatbots can be seen as a key innovation in interactive marketing that signals a new age in how brands can engage with consumers at a deeper level, as they are highly interactive and provide two-way communication and personalized content. For Carrera and Kruger (2021), the use of chatbots is the next big step in personalized advertising, once this technology is perfect for combining commercial messages and customer service. While in the traditional formats the messages are typically unidirectional, in this smart speaker, the communication flow is bidirectional and based on the individual context of each user (Ju et al., 2017). This bidirectional nature of interaction can be a huge ally on the marketing strategy as the options in a "one-on-one conversation" provide ample opportunities to understand and adapt to a user's goals, preferences, and limitations (Janarthanam, 2017). Even so, one needs to bear in mind that not all chatbots were created for commercial purposes. To do that, a chatbot must be able to understand the intent of the user in order to reply and maintain a conversation based on the objectives of the organization.

Like Humans, Machines also learn.

Another important issue to address is the independent and automatic evolution of the chatbot programs, through the so-called machine learning. This concept, also proposed by Alan Turing in 1950, is based on the idea that computers could learn from experience, and intelligently adapt their behavior, just like a child. According to the IBM Cloud Education report (2020), machine learning is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy. This means that machines could learn by themselves independently of human intervention. Dealing with a huge amount of information that can be read and analyzed by an intelligent mechanism, allows to save data and preferences of consumers, which can then be used to, among others: a) suggest products, ideas, and create personalized offers and promotions; and b) understand and

learn from their behavioral habits. But there is always the other side of the coin. In 2016, Microsoft presented Chatbot Tay, a robot with artificial intelligence, whose objective was to relate to young people on social media. Equipped with self-learning mechanisms, this chatbot quickly began to reveal prejudiced and unethical language, using slang and other racist and sexist terms, and even verbally offending people, such as women and people of black or Jewish race.

Getting back to the focus of our topic, we saw that to be useful for commercial purposes, a chatbot must understand the intention of the user. The question is: is that possible nowadays? According to Oliveira (2019, p. 68), it is already possible to design systems that process large volumes of information and determine, for example, potential customers for a given product or the characteristics of a given system that could make it more successful on the market.

Many chatbots use speech instead of written words (e.g., Siri or Alexa) and turn our devices into virtual assistants with the purpose of making life easier. They can, for instance, be used to make purchases. People who own an Amazon Echo, a smart speaker in which Alexa is integrated, can order anything they want without moving a finger (Yuen, 2017). One might simply say "Alexa, order me toilet paper" during the corona crisis, and an order will be placed automatically.

As we can see, chatbots can fulfill a variety of business functions. The most common use is probably for customer service purposes: many companies use chatbots to support or even replace their human call center agents (Kamalika, 2018), while other companies do this by providing customer care through an online chat on their website (Milenkovic, 2020). However, fewer have heard of how chatbots can be used as an advertising tool that is not integrated on their website.

Back in 2004, Christopher Mims raised this issue in an opinion article on the pages of the Wall Street Journal called "Advertising's new frontier: talk to the bot". The author said, back then, that "chatbots built by brands can be used for entertainment, but they can also be used to inform" and added: "imagine conversing with your bank or utility company's bot when you have a customer service question." Today, this is the "new normal".

Personalize now, sell later

According to the U.S. Federal Trade Commission, more than 90% of online stores use customer's personal information for marketing and advertising purposes (Bang & Wojdynski, 2016). For Wolin and Korgaonkar (2003), personalized advertising can be defined as a type of advertising which uses consumer's personal data and shopping-related information to individually target customers to increase their attention span towards a product or service and impact their decision-making process. In fact, personalized advertising, especially in Social Network Sites (SNS), is proved to more effective than non-personalized commercial messages in the sense of being more memorable, more likeable, and more likely to trigger behavioral changes (De Keyser et al., 2015). Another study conducted by Howard and Kerin (2004) found that personalization enhances ad's efficiency, as customers had a higher purchasing probability when the viewed advertising message contained their first name.

Although personalized communication may be seen as the future, the traditional concept of advertising - aired through the mass media -, lacks that possibility for obvious reasons. This is one of the problems that conversation robots solve. Through its communicative bidirectionality and the ability to personalize the speech, chatbots can be specifically designed to project a certain brand personality and corporate character that engage with customers simulating real interpersonal communication. It seems plausible to say that chatbots can bring many benefits for companies, but what about for the advertising industry?

One can say that advertising needs to evolve, at least, at the same pace as society, in terms of social, cultural, and technological development. As Oliveira (2019) wrote, we are rapidly approaching a point of development of incredibly complex and flexible systems, which, at some point, will interact with human beings in a way that we will consider almost natural. So, the advertising industry must adjust fast to this new reality and start to look for new ways to reach consumers.

After the big social networks boom in the early 2000s, social media marketing became the next big thing (Ortiz-Ospina, 2019). Facebook, Twitter, LinkedIn, and Instagram remain some of the most relevant advertising channels to this day, combining a total number of

over 4.09 billion users (Kelogg, 2020). But there is also this even more popular communication channel, and its advertising potential has been barely tapped into: private messengers have outgrown social media platforms in number of users and relevance. Back in 2015, the four biggest private messaging apps WhatsApp, Facebook Messenger, WeChat, and Viber already had as many active global users as the previously mentioned social media platforms combined (Ballve, 2015). Ever since then, there has been a shift in relevance and the number of people who frequently use one of the six biggest messenger apps has continued to grow up to 6.230 million in 2022 (Mehner, 2022). This shift created the urgency for brands to figure out ways to reach their target groups in this new medium.

The response some companies have implemented is called *conversational advertising*, which is "the agreed messaging-based communication between the consumer and a brand to deliver consumer benefits to the consumer" (Lane, 2010, p. 3). Instead of trying to shout generic advertising claims into the world, brands are trying to engage with consumers where they are and with what they want to hear. Using private messengers, they engage in individual conversations with consumers, hoping to build a long-lasting relationship with each interaction over the course of a long time. Because of the popularity of messaging and the emergence of chatbots, advertisers can now take these steps to achieve one-on-one connections with consumers. Rather than sending generic one-way messages, brands are now trying to improve a customer's view of them through ongoing back and forth engagements. A strategy that would be unfeasible without chatbots due to the number of resources that are required by human-to-human interaction. Not only is this a new way to reach consumers, but some authors also suggest that this can leave a more significant impression on consumers: if they agree to talk to your brand, consumers will be more willing to listen to what you have to say (Lane, 2010, p. 7).

Although there are not enough scientific studies to assure this assumption conclusively, a study from Van den Broeck et al. (2019) was able to confirm the consumers' voluntary willingness to listen had positive implications for the perceptions of chatbot communication. Despite being impossible to know exactly how many chatbots are already out there, according to Kim (2020), there are more than 400.000 chatbots just on Facebook nowadays, used to generate leads, close sales, recruit talent, and perform other business tasks for organizations.

Of course, not all of them are used for advertising. But some great examples of what is possible are already established. For instance, H&M operates a chatbot on the private messaging platform Kik. It provides users with outfit inspiration based on their preferences and ultimately redirects them to the H&M online shop for purchase. Sephora is doing the same for its make-up product category (O'Brien, 2018), and Lidl launched a virtual wine expert, on Facebook Messenger, that they decided to call "Margot" to remind the wine connoisseur of the French wine-making region (Margaux), while generally being a popular first name in the UK (Goebel, 2018).

Artificial creativity

Another interesting discussion on this theme can - and probably should - be made about an inseparable topic of advertising: creativity. Its importance in advertising has got wide recognition by many researchers (Sharma, 2012) and when the autonomy of machines to choose, adjust, adapt, and even create personalized messages is discussed, we enter a new field that is important to explore. Is a machine capable of creating by itself?

Professor Arlindo Oliveira (2019) wrote that Ada Lovelace, daughter of Lord Byron, translated, in 1853, a definition originally written in French by Luigi Menabrea, about an analytical mechanism. Lovelace added a few personal notes to the translation, where she describes the potential of the "machine" for complex mathematical calculations and other tasks, but, curiously, considers that it would not be able to create anything new, original. For her, the machine could not display an intelligence similar to that of humans, since it requires, precisely, creativity and originality. One of the main criticisms directed at the idea of "computational creativity" is related to the fact that the act that is generated by artificial intelligence is not produced by the machine, but by the human being who programmed it (Miller, 2020).

For Margaret Boden (2009) this discussion on whether or not machines have the capacity to create (in this case works of art) is more philosophical than scientific and involves concepts such as consciousness, intentionality and meaning. But at this point, it is necessary to take a step back in this discussion and first define what creativity is. Duarte (2021) collected numerous definitions from different authors, however, we can assume Csikszentmihalyi's (1996) definition, that defines creativity as any act, idea or

product that transforms an existing domain into a new one. Using this definition, one can say that, in this strict sense, in theory, a machine can create. In fact, there are several examples of simple software that can create, without instructions, artistic works, such as melodies. Project Magenta from Google is one example, based "only" on the analysis of thousands of songs. Well, humans, in a way, do exactly the same, starting, albeit often unconsciously, from all the references they have to generate new sounds.

This is an interesting discussion, which should deserve special attention and further and deeper investigation in the future.

Are conversations the new campaigns?

According to Donahue and Hajizahed (2019), intelligent advertising allows high levels of personalization and a more accurate and efficient target reaching. But like any new medium, it is essential to understand how to use it right. Firstly, it is important to note that private messengers are not merely an alternative way to text. Users engage because they expect a multimedia content experience: they trade emojis, digital stickers, GIFs, videos, photos, and video calls with one another (Ballve, 2015). One-on-one online communication is nuanced, and brands will have to learn how to transmit their identity through this complexity.

Also, people who use private messengers expect to engage in conversations, and not to receive generic advertising slogans that have been recycled from the latest campaign. So, what should advertisers do instead? In an AdAge article, Christian Baesler (2016) suggests that "brands need to fit into a chat environment as authentically as possible if they want to be successful. As bots evolve, advertisers need to weigh the risks of being awkward or annoying with the rewards of adding value and relevance". As a best practice, the author mentions *Forkable*, a lunch bot that learns people's tastes and then curates and delivers a different lunch for each day. The bot reacts differently to each user by analyzing their behaviors and statements, collecting the data, and ultimately reacting to it. These are the chatbot practices that make people want to engage instead of using the same generic methods for everybody.

Up to this point, there is evident progress in terms of the potential of chatbots and conversational advertising. But is it all good news? Are a thousand little interactions better than big generic campaigns? There are a few concerns advertisers, brands, and creative agencies should bear in mind. For instance, some authors have found that chatbots are not well received by all audiences. One survey implicated that people between the ages of 18 and 34 are twice as open to communicating with chatbots as an assistant when shopping, compared to other age groups (BRAIN, 2019). This indicates that older target groups are more critical and would rather not want to communicate with a chatbot if they have the choice.

There are several challenges to overcome when getting started with conversational advertising. In some cases, consumers may have to invite brands to chat before an interaction can happen. This means that one may need to advertise the chatbot before it can start advertising. Even though it may sound rather strange, it means that no brand can solely rely on bots for advertising. Moreover, the risk of communicating the wrong things or with the wrong tonality is more prominent, due to the complexity of online chatting.

Also, some brands may not simply hold enough engagement potential for chatbots. For instance, while established makeup or fashion brands often have a big product variety that makes for interesting content, some brands might not be relevant enough for consumers to engage (Baesler, 2016). This does not mean that chatbots are irrelevant for all products or services that are not fast-moving consumer goods. But if a brand is settled in the business for *that tiny little button on that generic product that no one likes to use*, then it might be useful to think really hard about it before getting started.

Conclusion

After looking closer at artificial intelligence, especially chatbots and how they can be used for advertising, one can conclude that chatbots potentially open a new horizon of possibilities when it comes to business purposes in general, advertising being one of them. Through the increasing development of technology and targeting capabilities, chatbots are likely to become more popular in the future – amongst consumers and advertisers.

Analyzing all the considerations raised in this article, the authors consider that it is unlikely that brands can solely rely on this new type of conversational advertising any time soon. For some brands, this will probably never be a suitable form of advertising. Nonetheless for younger consumers, that are more curious about new trends and will always look for what's new and noteworthy, chatbots can come in handy. Although this is still the beginning of technological advances that are to come, with the growing presence of A.I. in our daily lives, the time has come for brands but also agencies to take a step forward towards the future.

As personalization and targeting capabilities increase, chatbots will probably become "the new normal". And advertisers who get started now using this technology, could be a step ahead of the trend.

For the authors, chatbots should be seen as another communication tool that must be integrated in a holistic advertising strategy, side by side with the other instruments. As discussed before, there are several advantages in using big data, artificial intelligence, learning machine, and many other digital possibilities, like chatbots. However looking at it as the panacea that will solve all the problems, substitute all the other communication tools could be a mistake.

Brands and companies should continue to focus on consumer's needs, discovering truly human insights to trigger their motivations, create innovative and relatable communication concepts and deliver their creative messages in the platforms that are more appropriate, according the social and cultural context of the market in which it operates, the category of its product or service and, mainly, the customers it is intended for. Moreover they can communicate wisely and transmit their messages through sensibly conversations with consumers and, in this way, *chatvertising* could be a really important communication tool for the future.

REFERENCES

Baesler, C. (2016, July 22). Lunch bot, anyone? How brands can use chatbots in advertising. *AdAge.* https://adage.com/article/digitalnext/brands-chatbots-advertising/305095.

Ballve, M. (2015, October 4). Messaging apps are overtaking social networks to become the dominant platforms on phones. *Business insider.* https://www.businessinsider.com/messaging-apps-have-completely-overtaken-social-networks-to-become-the-dominant-platforms-on-phones-2015-4.

Bang, H. & Wojdynski, B. W. (2016). Tracking users' visual attention and responses to personalized advertising based on task cognitive demand. *Computers in Human Behavior*, 55, 867-876.

Bauman, Z. (1999). *Modernidade e ambivalência*. Coleção Antropos. Editora Relógio de Água.

Boden, M. A. (2009). Computer models of creativity. *AI Magazine*, *30*(3), 23-23.

BRAIN (2019, April 19). Chatbot report 2019: Global trends and analysis. *Chatbots magazine.* https://chatbotsmagazine.com/chatbot-report-2019-global-trends-and-analysis-a487afec05b.

Carrera, F. & Krüger, P. (2020). Publicidade inteligente convergências entre os chatbots e as marcas. *Signos do Consumo*, *12*(1), 27-41.

Campbell, C., Sands, S., Ferraro, C., Tsao, H. Y. J. & Mavrommatis, A. (2020). From data to action: How marketers can leverage AI. *Business horizons*, *63*(2), 227-243.

Collins, C., Dennehy, D., Conboy, K. & Mikalef, P. (2021). Artificial intelligence in information systems research: A systematic literature review and research agenda. *International journal of information management*, 60, 102383.

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. Harper Collins.

Donahue, L. & Hajizadeh, F. (2019). Artificial Intelligence in cloud marketing. *Artificial Intelligence and machine learning for business for non-engineers*, 77-88.

Duarte, A. (2021) A new reality in the labour market demands new strategies in education. In R. Surugiu, A. Stefanel & N. Apostol (Eds.), *30 de ani de învățământ jurnalistic și de comunicare în fostele țări comuniste din Estul Europei* (pp. 365-380). Tritonic Books.

Goebel, T. (2018, February 25). How we built the wine bot margot for Lidl. *Chatbots magazine.* https://chatbotsmagazine.com/how-we-built-the-wine-bot-margot-for-lidl-b54f42cda4dd.

Howard, D. J. & Kerin, R. A. (2004). The effects of personalized product recommendations on advertisement response rates: The "try this. It works!" technique. *Journal of consumer psychology*, *14*(3), 271-279.

IBM Cloud Education (2020). *What is machine learning?* https://www.ibm.com/cloud/learn/machine-learning.

Janarthanam, S. (2017). *Hands-on chatbots and conversational UI development: build chatbots and voice user interfaces with Chatfuel, Dialogflow, Microsoft Bot Framework, Twilio, and Alexa Skills*. Packt Publishing Ltd.

Ju, J., Kim, D., Park, K., Park, Y., Yun, J. & Ahn, J. H. (2017, December). Is advertising on an AI speaker effective? The role of interactivity, product type, and thematic congruence. In *Proceedings of the 2017 International Conference on Information Technology* (pp. 360-365).

Lane, N. (2010). Conversational Advertising. *Mobile Squared*, 1-23. https://mobilesquared.co.uk/wp-content/uploads/2017/12/Conversational-Advertising.pdf.

Loh, S. (2019). *Volume, velocidade, variedade, veracidade e valor: Como os 5 Vs do Big Data estão impactando as Organizações e a Sociedade*. Edição do autor.

Kaczorowska-Spychalska, D. (2019). How chatbots influence marketing. *Management*, *23*(1), 251-270. https://doi.org/10.2478/manment-2019-0015.

Kelogg, K. (2020, March 2). *The 7 biggest social media sites in 2020*. https://www.searchenginejournal.com/social-media/biggest-social-media-sites/.

Kietzmann, J., Paschen, J. & Treen, E. (2018). Artificial intelligence in advertising: How marketers can leverage artificial intelligence along the consumer journey. *Journal of advertising research*, *58*(3), 263-267.

Kim, L. (2020), 9 ways to use Facebook chatbots to grow your business. *All business.* https://www.allbusiness.com/use-facebook-chatbots-to-grow-your-business-132318-1.html.

Kurzweil, R. (2005). *The singularity is near: When humans transcend biology*. Penguin.

Mehner, M. (2022, January 5). Nutzerzahlen Messenger Apps Deutschland und Weltweit. *Messenger People.* https://www.messengerpeople.com/de/weltweite-nutzer-statistik-fuer-whatsapp-wechat-und-andere-messenger/

Miller, A. (2020). Can AI be truly creative? *American Scientist, 108*(4), 244.https://www.americanscientist.org/article/can-ai-be-truly-creative.

Mims, C. (2014, July 27). Advertising's new frontier: talk to the bot. *The Wall Street Journal.* https://www.wsj.com/articles/advertisings-new-frontier-talk-to-the-bot-1406493740?mod=dist_smartbrief .

O'Brien, M. (2018, August 8). Chatting with bots: How well 5 brands' chatbots actually work. *ClickZ.* https://www.clickz.com/chatbots-working-well/216220/.

Ortiz-Ospina, E. (2019, September 18). The rise of social media. *Our world in data.* https://ourworldindata.org/rise-of-social-media.

Oliveira, A. (2019). *Inteligência Artificial*. Coleção Ensaios FFMS. Fundação Francisco Manuel dos Santos.

Rust, R. T., Rand, W., Huang, M. H., Stephen, A. T., Brooks, G. & Chabuk, T. (2021). Real-time brand reputation tracking using social media. *Journal of marketing*, *85*(4), 21-43.

Sharma, P. (2012). Advertising effectiveness: "understanding the value of creativity in advertising", a review study in India. *Online journal of communication and media technologies*, *2*(3), 1.

Tsai, W.-H.S., Liu, Y. & Chuan, C.-H. (2021), How chatbots' social presence communication enhances consumer engagement: the mediating role of parasocial interaction and dialogue. *Journal of research in interactive marketing*, *15*(3), 460-482. https://doi.org/10.1108/JRIM-12-2019-0200.

Van den Broeck, E., Zarouali, B. & Poels, K. (2019). Chatbot advertising effectiveness: When does the message get through? *Computers in Human Behavior*, 98, 150-157. https://doi.org/10.1016/j.chb.2019.04.009.

Wells, W., Burnett, J. & Moriarty, S. (2000). *Advertising: Principles and practice* (5th ed.). Pearson.

Wolin, L. D. & Korgaonkar, P. (2003). Web advertising: gender differences in beliefs, attitudes, and behavior. *Internet research*.