



MARKETING & TECHNOLOGY:

New Horizons and Challenges

THE IMPACT OF DIGITALIZATION ON CURRENT MARKETING STRATEGIES

LUIS MATOSAS-LÓPEZ

The Impact of Digitalization on Current Marketing Strategies

MARKETING & TECHNOLOGY: NEW HORIZONS AND CHALLENGES

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The MTNHC series aims to provide multidisciplinary references for researchers, instructors, and professionals interested in the most up-to-date research on the challenges connected with the expanding ground of digitalization and marketing.

The Impact of Digitalization on Current Marketing Strategies

EDITED BY

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INVESTOR IN PEOPLE

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List of Abbreviations

AI	Artificial Intelligence
AIaaS	Artificial Intelligence-As-A-Service
ALICE	Artificial Linguistic Internet Computer Entity
API	Application Programming Interface
AR	Augmented Reality
ARIMA	Autoregressive Integrated Moving Average
B2B	Business to Business
CAI	Conversational Artificial Intelligence
CDR	Corporate Digital Responsibility
CEO	Chief Executive Office
CRMs	Customer Relationship Management
CSR	Corporate Social Responsibility
CX	Customer Experience
DL	Deep Learning
ECT	Expectation Confirmation Theory
EDI	Electronic Data Interchange
GANs	Generative Adversarial Networks
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
ICTs	Information and Communication Technologies
IFC	International Finance Corporation
IMF	International Monetary Fund
IoS	Internet of Senses
IoT	Internet of Things
ITs	Information Technologies
KPIs	Key Performance Indicators
LLMs	Large Language Models
Martech	Marketing Technology
ML	Machine Learning

x List of Abbreviations

NLP	Natural Language Processing
NLU	Natural Language Understanding
PDA	Personal Digital Assistant
PMT	Protection Motivation Theory
R&D	Research and Development
RMSD	Root Mean Square Deviation
ROI	Revenue on Investment
SalesTech	Sales Technology
SD	Standard Deviation
SDGs	Sustainable Development Goals
SLR	Systematic Literature Review
SMEs	Small Medium Size Enterprises
TAM	Technology Acceptance Model
TC	Theoretical Construct
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UN	United Nations
VR	Virtual Reality
ZMO	Zero Moment of Truth

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Preface

In the ever-evolving business landscape, a profound transformation has swept across industries, reshaping the way organizations connect with their audiences and redefining their presence in the market. This transformation, driven by digitalization, has ushered in an era of change and opportunity. In the pages of *The Impact of Digitalization on Current Marketing Strategies* you will discover what many of these changes have been and what opportunities they present.

In this era of technological progression, the business scene has shifted radically. As we find ourselves immersed in this digital wave with intricate threads of data, connectivity, and innovation, it is imperative to understand the profound impact of this digitalization on the realm of marketing strategies.

Digitalization, in its broadest sense, has contributed to the rise of electronic transactions over the internet, the creation of new business models, and even the construction of a new paradigm of customer experience. In fact, according to many experts, digitalization has been the most transformative force in marketing ever. It has changed consumption habits, consumer behavior, and buying processes. But it has also changed marketing strategies, offering a wide range of mechanisms that allow companies of all types and sizes to improve their commercial actions.

The impact of digitalization on marketing strategies is a dynamic and changing field of study, and *The Impact of Digitalization on Current Marketing Strategies* provides a comprehensive exploration of this epic paradigm shift. This book is a guiding compass for researchers and practitioners interested in the latest challenges associated with the expanding frontiers of digitalization and marketing, as well as for anyone curious about the interplay between these two disciplines. But this title not only acknowledges the complexity and importance of bridging the disciplines of digitalization and marketing, but also satisfies the reader's need to approach this topic from a strategic perspective.

The 13 chapters in this book reflect the experiences of 29 authors from 18 universities in 12 different countries and cover a wide range of topics. These topics include the rise of social media as a marketing tool, customization of the online user experience, online store selection determinants, pricing strategies in the digitalization era, privacy and ethical considerations in the digital setting, the use of CRM solutions for customer-centric strategies, the importance of corporate digital responsibility, the role of social media influencers during a brand crisis, the use of AI and chatbots to interact with customers, or the importance of omni-channel marketing strategies today.

Nevertheless, at the core of our exploration is a fundamental question. As digitalization increases, successful marketing strategies depend on our ability to adapt, innovate, and anticipate. Thus, *The Impact of Digitalization on Current Marketing Strategies* is more than just a compilation of insights; this book invites readers to embrace the limitless horizons of digital possibilities and guides them to navigate the intricate maze of marketing strategies with intelligence.

As you embark on this journey, prepare to witness the fusion of technology and marketing. Let the pages of this book illuminate the corners of your own course in the seas of modern marketing, pushing boundaries, shifting perspectives, and revealing the profound impact of digitalization on marketing strategies.

Luis Matosas-López
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Chapter 1

Strategic Implications of Chatbots in Marketing: Exploring Applications and Factors of Customer Acceptance

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Abstract

This chapter provides an overview of the strategic implications of chatbot use and implementation, including potential applications in marketing, and factors affecting customer acceptance. After presenting a brief history and a classification of conversational artificial intelligence (AI) and chatbots, the authors provide an in-depth review at the crossroads between marketing, business, and human–computer interaction, to outline the main factors that drive users’ perceptions and acceptance of chatbots. In particular, the authors describe technology-related factors and chatbot design characteristics, such as anthropomorphism, gender, identity, and emotional design; context-related factors, such as the product type, task orientation, and consumption contexts; and users-related factors such as sociodemographic and psychographic characteristics. Next, the authors detail the strategic importance of chatbots in the field of marketing and their impact on consumers’ perceived service quality, satisfaction, trust, and loyalty. After discussing the ethical implications related to chatbots implementation, the authors conclude with an exploration of future opportunities and potential strategies related to new generative AI technologies, such as ChatGPT. Throughout the chapter, the authors offer theoretical insights and practical implications for incorporating conversational AI into marketing strategies.

Keywords: Chatbots; conversational artificial intelligence; acceptance; trust; ethics; generative AI

1. Conversational Artificial Intelligence and Chatbot: Definition and Brief History

Conversational artificial intelligence (CAI) is a subfield of artificial intelligence (AI) that aims to simulate human conversation through chatbots or virtual assistants like Alexa, Google Home, or Siri. Since the very beginning of AI research, the ability to understand and handle language has played a central role. As far back as the 1950s, McCarthy and his colleagues underscored seven crucial dimensions of AI, with “programming a computer to use language” being the second on the list. This quest to automatically understand and handle language has thus been present from the very beginning of AI research. It is important to note that when the authors mention CAIs, they refer to AIs that are not embodied in the form of avatars, humans, or robots (in this case, the authors rather talk about embodied conversational agents).

The first CAIs were chatbots, and they have a long history. Chatbots are intelligent computer programs designed to simulate a conversation with a user, in real time (Suta, Lan, Wu, Mongkolnam, & Chan, 2020). Their history began in the 1960s, notably with the creation of ELIZA by Joseph Weizenbaum (1966). ELIZA was a rule-based system that imitated a consultation with a psychotherapist using a simple script. Back then, the ultimate goal was to pass the Turing test (Turing, 1950), which assesses whether a machine can be at least as intelligent as a human. In short, a machine passes the Turing test if it can fool a human into thinking that they are conversing with another human. In 1971, Colby et al. developed PARRY, a chatbot capable of simulating a conversation with a patient suffering from schizophrenia. Another important chatbot in the history of CAIs is PsyXpert, an expert system that responds to questions in a specific domain by reasoning from predefined facts and rules (Overby, 1987). PsyXpert was used to provide psychological advice and played a significant role in the advancement of chatbot technology.

Overall, the first chatbots in the history were based on predefined rules and were used for psychological research (Epstein & Klinkenberg, 2001). These early systems were rather primitive, rigid, and unable to produce coherent and credible conversations. However, with the advent of machine learning (ML) algorithms, such as Markov chains or deep neural networks, chatbots became not only more sophisticated but also more convincing and humanlike in their responses. One of the earliest chatbots to incorporate ML was ALICE (Artificial Linguistic Internet Computer Entity) in 1995 (Wallace, 2003). ALICE’s learning algorithm adjusted its predictions based on a large number of analyzed conversations, allowing it to mimic human conversation more effectively. This shift to data-driven methods was made possible by the introduction of new and more sophisticated algorithms, the advent of big data, and the deployment of increasingly powerful processors. While historically chatbots were based on deterministic rules, today they are powered by ML and deep learning (DL) algorithms to generate more natural responses by learning from existing textual data. One of the key tools enabling human-machine interaction is natural language processing (NLP). The idea

behind NLP is to use ML and DL to understand human language, both written and spoken, and to generate consistent responses to user requests.

2. Chatbot Types: From Rule-Based Chatbots to AI-Based Chatbots

On a technical level, chatbots can be categorized on the way they generate responses to user inquiries and the type of techniques used to design them. In particular, chatbots can be categorized into rule-based, retrieval-based, or generative-based models (Suhaili, Salim, & Jambli, 2021). Rule-based chatbots respond to simple inquiries using predetermined messages and predefined rules. These types of chatbots are easy to design, and due to their simplicity, they are preferable for simpler task-oriented, standardized conversations. Examples can be virtual bots that turn customer service into self-service (Huang & Rust, 2018). As they follow predefined rules, however, they are not able to answer and adapt to more complex users' queries.

Retrieval-based chatbots are instead AI-based chatbots that use preconstructed conversation repositories to find the best-matching response for users' requests (Wang, Ziyi, & Junyu, 2019). This type of AI-based chatbot is trained to provide the best possible answer from a database of predefined responses, using ML techniques to select the best response. Although they can handle more complex situations than rule-based chatbots, they are unable to handle advanced user queries. To overcome this issue, generative-based chatbots use more complex ML and DL techniques to generate responses after being trained on vast amounts of data. In particular, generative-based chatbots can establish a response by monitoring the current interaction, using the history of user interactions, and matching correct responses based on the semantic understanding of the request. In addition, they are able to learn from interactions with users and improve their responses over time. Chatbots can also be hybrid, combining the best features of rule-based and AI-powered chatbots. Hybrid chatbots might use rule-based systems for simple queries and AI-powered algorithms for more complex queries. Besides, developers are starting to power social bots that, thanks to emotion recognition softwares and affective computing technologies, are able to create new types of relationships with users, going beyond the simple customer service tasks. These types of social-oriented chatbots are able to not only respond to users' requests but also establish an emotional connection with users, by satisfying users' need for communication, affection, as well as social belonging.

3. Chatbot Market

The advancement of CAIs is reflected in the rising number of chatbots being developed in many industries, including e-commerce, tourism, and healthcare (Grand View Research, 2023). Two main categories of chatbots are commonly implemented in business applications: web-based chatbots and messenger-based chatbots (Huang, Hew, & Fryer, 2022). Web-based chatbots are directly

integrated into a website and provide real-time help to users browsing the site. In the e-commerce industry, web-based chatbots are frequently used, with major brands such as H&M and Amazon incorporating their chatbots directly into their merchant sites (Lo, 2021). In contrast, messenger-based chatbots are developed to be used on online messaging platforms such as Facebook Messenger or WhatsApp. Users can interact with the chatbot directly in their messaging system after adding the company's page to their contacts. As an example, Sephora, a French retailer of beauty products, has developed a chatbot on Facebook Messenger that can answer various questions about product availability and order tracking and suggest personalized content, such as beauty tutorials, tips, or information on the latest trends.¹ To provide an even more personalized experience, they also developed the Sephora Virtual Artist chatbot, which can help consumers to find suitable products by scanning an inspirational image or their face.

Many brands across various sectors have developed chatbots, including tourism (e.g., Expedia's chatbot), logistics (e.g., DHL's Tracy chatbot), insurance (e.g., Florius' Robert chatbot), and real estate (e.g., The Keyes Company's Sunny chatbot). In the banking sector, online banks were the pioneers in developing chatbots, such as Orange Bank's virtual advisor Djingo, launched in 2017 to provide personalized financial offers.² Chatbots are also increasingly used in the healthcare industry for providing health information, disease prevention, pre-diagnosis, and disease monitoring. For example, as early as 2016, Baidu launched the chatbot Melody, a new feature in the Baidu Doctor app, which provided personalized diagnoses and even online consultations in China (Taylor, 2016).

According to Cheng and Jiang (2022), more than 30,000 chatbots were launched on platforms such as Facebook Messenger in 2019. The development of chatbots, whether web-based or messenger-based, was greatly accelerated by the COVID-19 crisis (Research and Markets, 2022). With travel restrictions and store closures in place, many consumers turned to online channels for their purchases, and chatbots played a crucial role in companies' ability to respond to online inquiries, providing fast and reliable assistance to customers 24/7. Besides, several chatbots were developed during the pandemic to address citizens' questions and concerns about COVID-19 (World Health Organization, 2022), lockdowns, or vaccination (Etienne, Altay, Mercier, & Chevallier, 2021).

Obviously, this growth of chatbots was not just a temporary trend that ended with the lifting of lockdowns. The global chatbots market size is estimated to expand from \$190.8 million in 2021 to \$1,250 million by 2025 (Statista, 2023). Such a growth is explained by the significant advancements in technology, which have facilitated the creation of more efficient and effective chatbots to satisfy consumer needs. Chatbots can collect information about potential customers, guide them through the purchasing process, replace the traditional FAQs, and even place orders for them. They provide direct contact with customers on a

¹<https://www.messenger.com/t/sephorafrance>.

²<https://www.lesechos.fr/2017/12/orange-bank-teste-djingo-son-conseiller-100-virtuel-a-amiens-187732>.

continuous basis, and at a reduced cost, making it an efficient way for companies to cut their customer service costs. As [Kaczorowska-Spychalska \(2019, p. 258\)](#) notes, “chatbots can save up to 30% in customer support cost and can help businesses save on customer service costs by speeding up response times and answering up to 80% of routine questions.”

4. Factors Affecting Acceptance of Chatbots

Despite the enormous technical advancement in designing and deploying AI chatbots, there is a lot of skepticism among consumers regarding their usage. This presents a considerable challenge to the implementation of AI technologies in marketing and customer services, as reported by [Zhu, Zhang, Wu, and Liu \(2022\)](#). Therefore, it is fundamental to understand the factors that influence consumers’ acceptance of AI chatbots. Traditional acceptance models have focused on two primary criteria: ease of use, which denotes the extent to which customers find using a technology effortless, and usefulness, defined as the subjective probability of a technology enhancing a customer’s task performance ([Davis, Bagozzi, & Warshaw, 1989](#)). However, in the case of chatbots, several other factors impact consumers’ acceptance of such technology. Specifically, technology-related factors, context-related factors, and user-related factors.

4.1 Technology-Related Factors: Anthropomorphism, Gender, Identity, and Emotional Design

Anthropomorphism has been identified as a crucial factor in understanding how customers use and interact with chatbots ([Blut, Wang, Wunderlich, & Brock, 2021](#)). Anthropomorphism refers to the attribution of human characteristics or traits to nonhuman agents ([Epley, Waytz, Heafner, & Epley, 2018](#)). Anthropomorphism can be triggered by the ability to simulate humanlike conversations through the usage of NLP techniques, and, at the human–computer interface, by features such as the sound of a humanlike voice or the personality of the agent ([Qiu & Benbasat, 2009](#)). While anthropomorphism has been found to enhance product and brand liking in marketing ([Aggarwal & McGill, 2007](#)), its impact on customers’ experiences with CAI remains uncertain. Some scholars argue that perceived humanlike qualities in bots facilitate acceptance since they allow for the application of social norms and expectations of human–human interactions ([Nass & Moon, 2000](#)). However, others studies have shown that anthropomorphism might also increase the potential discomfort and eeriness ([Mende, Scott, van Doorn, Grewal, & Shanks, 2019](#)). In this regard, [Mori’s \(1970\)](#) uncanny valley hypothesis posits that, after a certain threshold of human resemblance, people may reject highly humanlike bots due to feelings of eeriness or discomfort ([Mori, MacDorman, & Kageki, 2012](#)). Thus, when implementing anthropomorphic visual cues to machines, particular care needs to be given to the design of the machine, to avoid potential negative consumer perceptions ([Blut et al., 2021; Pavone, Meyer-Waarden, & Munzel, 2023](#)).

Anthropomorphism can also be triggered by the attribution of a gender, which can also affect consumer perceptions and acceptance of bots. In this regard, research on human–robot interaction has found that female bots are generally perceived as more friendly, warm, and emotional than male bots (Borau, Otterbring, Laporte, & Fosso Wamba, 2021).

In addition to gender, identity disclosure is another factor that affects consumers' acceptance of chatbots. In the context of e-retailing, Luo, Tong, Fang, and Qu (2019) have found that while undisclosed chatbots appear to be as effective as humans in stimulating customer purchases, disclosure of a chatbot's identity prior to a conversation with the customer can significantly reduce purchase rates (Luo et al., 2019). This suggests that despite the objective competence of an AI agent, there is a negative disclosure effect that is driven by negative subjective human perceptions of machines. This effect has also been observed in other contexts, such as health care (Yun, Lee, & Kim, 2021). This is likely due to algorithm-aversion biases, as individuals tend to prefer human interactions over machine interactions (Dietvorst, Simmons, & Massey, 2015). While not disclosing the agent identity, or disclosing it at the end of the interaction, has been suggested as a potential strategy to avoid algorithm aversion effects (Luo et al., 2019), companies also need to consider the ethical aspects of late identity disclosure, in particular the risk of counterfeit service, which might increase distrust and deception (Robinson et al., 2020).

Another important design characteristic of chatbots is the level of empathy and emotional expression that the machine can simulate. As such, empathy has been found to be an important factor to develop human–machine relationships, positively affecting users' intention to use chatbots (Ling, Tussyadiah, Tuomi, Stienmetz, & Ioannou, 2021). In this context, developers are making efforts to integrate empathy into AI applications, leading to the emergence of “empathetic AI” (Huang & Rust, 2018). Thanks to emotion recognition softwares and advanced ML techniques, AI technologies can now detect human emotions and adapt their responses accordingly. In particular, by collecting and processing data on consumers' emotional states, such as biometrics, brain activity, facial expressions, body movement, or voice/speech, algorithms are trained to identify the corresponding emotion and act accordingly. An example is EMMA, an emotion-aware chatbot developed by the MIT Media Lab, which provides emotionally appropriate microactivities in an empathetic manner, detecting the user's mood from smartphone sensor data (Ghandeharioun, McDuff, Czerwinski, & Rowan, 2019).

4.2 Context-Related Factors

Besides the design and chatbots characteristics, consumers acceptance might also depend on the task orientation, product type and consumption contexts (Wien & Peluso, 2021). In this regard, task-oriented chatbots are built to help users execute utilitarian task or solve a particular problem. For instance, chatbots used in the bank sector are often preferred for their utilitarian value (Meyer-Waarden et al., 2020). When used in utilitarian contexts, the reliability of the chatbots seems to be more important than empathy (Meyer-Waarden et al., 2020). Social-oriented chatbots, on the other hand, are designed mainly to maintain a good quality of conversations with

humans or to establish some forms of relationships with them. In this case, implementing empathy and emotions in the chatbot might be more appropriate. Consistently, research on AI recommenders has shown that chatbots tend to be perceived as more competent than human recommenders in utilitarian contexts and as less competent in hedonic contexts (Longoni & Cian, 2020). The hedonic and utilitarian trade-offs can determine preference for, or resistance to, AI agents (Longoni & Cian, 2020). In particular, marketers could prioritize functional positioning strategies and task-oriented chatbots over social-oriented ones in cases where consumers consider utilitarian attributes as more important. For instance, a company in the hospitality industry such as TripAdvisor could emphasize AI-based recommendations for business travel services and deemphasize AI-based recommendations for leisure travel services (Longoni & Cian, 2020).

4.3 Users-Related Factors

Several user-related factors are also crucial in impacting usage intention and acceptance of chatbots. These factors include gender, age, users' technology expertise, prior experience (Venkatesh, Thong, & Xu, 2012), as well as various psychological factors reflecting users' current or inherent cognitive and emotional states (e.g., technology readiness, need for human interaction, sense of uniqueness and uniqueness neglect, technology anxiety) (Ling et al., 2021). In particular, previous research has shown how consumer characteristics such as age directly affect consumers' acceptance of AI chatbots. Older people are generally more resistant toward chatbots and robot technology due to their lack of digital experience (Belanche, Casaló, Flavián, & Schepers, 2020). Nevertheless, the context in which chatbots are used plays a significant role in determining the impact of age on acceptance. For instance, in the context of healthcare robots, Čaić, Odekerken-Schröder, and Mahr (2018) found no age effects, suggesting that age may not be a barrier in this particular context. In this regard, factors such as loneliness and need for interaction could positively affect acceptance of conversational AI (Odekerken-Schröder, Mele, Russo-Spena, Mahr, & Ruggiero, 2020). Research indicates that lonely people have a stronger tendency to humanize bots, perhaps because of social isolation, exclusion, or disconnection, thus being more inclined to develop relationships with them (Shin & Kim, 2020). Similarly, in a robot service context where social connection with frontline service employees is lacking, customers with a greater need for interaction may attempt to alleviate this social pain by perceiving a service robot as more humanlike, thus creating a humanlike social interaction and positively perceiving interactions with the AI system (Blut et al., 2021). Besides, individuals might also be characterized by a strong sense of uniqueness that, in some specific contexts, might prevent consumers from accepting AI. For instance, Longoni, Bonezzi, and Morewedge (2019) investigated the acceptance of AI agents in healthcare and found that users' "need for uniqueness" can impact their acceptance. The study showed that in medical care, there may be concerns that the unique characteristics,

circumstances, and symptoms of the user will be neglected by AI providers, potentially increasing resistance to AI (Longoni et al., 2019).

5. Experiencing the Chatbot: Perceived Service Quality, Satisfaction, Trust, Engagement, Loyalty, and Personalization

Besides factors affecting acceptance of chatbots, other studies have focused on how customers are actually experiencing the use of chatbots, and the impact it has on their perception of service quality. These studies delve into the resulting effects on customer loyalty, satisfaction, and trust toward the associated brand, to best capture the strategic impacts of chatbots for digital marketing.

First, the impact of chatbots on service quality has been extensively examined in research. De Andrade and Tumelero (2022) show that the development of chatbots enabled 181 million interactions and 3.6 million attendances in 2020. This increased efficiency in services by providing greater accessibility, real-time problem-solving, and agility. However, to comprehend what leads to a high-quality experience and user satisfaction, we should consider the needs and motivations that drive users to embrace these technologies. Brandtzaeg and Følstad (2017, pp. 377–392) highlight four main factors.

The first main factor that drives user usage of chatbots is called “productivity” by Brandtzaeg and Følstad (2017, pp. 377–392). This productivity is particularly important in digital marketing, where quick and effective responses can drive purchase decisions and brand loyalty. This involves having chatbots that can quickly provide support or access to useful information. Cheng and Jiang (2022) also emphasize the importance of information and accessibility, ease of use, and accuracy of responses as critical factors in explaining the perceived positive quality of chatbots service.

The second major factor emphasized by Brandtzaeg and Følstad (2017, pp. 377–392) concerns social and relational factors. This involves having chatbots that can provide social experiences. They contribute positively to the quality of service and the customer experience by allowing the customer to avoid loneliness and talk to someone without judgment. The chatbot should adjust its style and expression based on the context and the interlocutors to better satisfy them and foster loyalty.

The third major factor emphasized by Brandtzaeg and Følstad (2017, pp. 377–392) is entertainment. It refers to the ability of chatbots to entertain people, by providing them with fun tips or amusement when they have nothing else to do. This effect is in line with the consumer experience model (Holbrook & Hirschman, 1982), which suggests that consumers seek enjoyable, emotional, and fun experiences.

The fourth major factor emphasized by Brandtzaeg and Følstad (2017, pp. 377–392) is curiosity. Chatbots are a new technology that sparks attention and interest. Consumers are naturally curious to see what chatbots are capable of and explore new features. Satisfying this curiosity can have a positive impact on the consumer experience.