EXPLORING MARKETING TRANSFORMATION IN THE AGE OF ARTIFICIAL INTELLIGENCE

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Abstract
Adopting Artificial Intelligence (AI) at the company level constitutes a transformative phase, heralding an economic-technological leap through the digital economy. This advancement streamlines processes, allowing companies to become more flexible and respond promptly to challenges. For marketing, AI can be the potentially infinite engine of performance, but the success of AI adoption is not guaranteed. In this respect, marketing effectiveness depends on various instances of AI adoption, including automation, augmentation, and personification.

Keywords
Artificial intelligence, Digital transformation, Marketing, Managerial implications

JEL Classification
M10, M31, O33

Introduction

It is no surprise that AI is generating increased interest from scholars and practitioners, and significant investments in both private and public sectors. Therefore, we aim to explore how marketing is being transformed by AI. First, we focus on defining the AI concept from a marketing perspective. Then, we look into the question of incorporating AI within the firm, with a focus on the managerial and consumer levels. Third, we explore its potential use in marketing and we identify several instances of AI that can support marketing practitioners in understanding the nature of opportunities that could be obtained through this new technology.

As many other transformation processes, marketing transformation is not necessarily a phenomenon easily acknowledged. By its nature, marketing is a field that embraces changes and adapts to changes. However, adaptability implies small incremental adjustments, while transformation implies a structural change in tools, processes and approaches.

For some time already, marketing has been under scrutiny in a period of rapid technological advancement and intense turbulences. Issues of creativity (Das et al.,

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2023, p.2), authenticity (Nunes, Ordanini and Giambastini, 2021, p.1), reliability, dependability, and openness (Gerlich, 2023, p.8) became a recent focus among researchers, in the context of significant advances in new technologies and the rise of digital content marketing (Jarvninen and Taiminen, 2016, p.164).

Technology has been closely related to marketing in the wider context of digital transformation, a period of rapid and radical changes that have amplified market turbulences (Akter et al., 2022b, p. 86), but have also marked an important economic-technological leap (Sergi et al., 2022, pp. 403-404). As more and more interactions migrated to digital space, a huge amount of data has been collected and became available for marketers and data sciences. This is a recent phenomenon with potentially huge implications for business models, customer interactions, product innovations and so on. Some researchers consider that marketing will be among the business functions that will experience disruption with high intensity in the next period (Chintalapati and Pandey, 2022, p.38). Nevertheless, AI remains an ambiguous concept, covering a wide range of roles – from collecting and analyzing data, extracting subtle patterns, automating decisions, creating artificial realities, substituting human agents, personalizing user experience and products or even becoming an agent on its own. The current paper is limited to explore AI implications in marketing in the digital environment only, not including physical impact which could be more transformative with the appearance of intelligent robots.

1. Review of the scientific literature

Digital environment is a result of a larger process we now call "digital transformation", that contributed to streamlining processes and allowed companies to become more flexible and to respond more promptly to challenges (Feliciano-Cestero et al., 2023, p. 1), having a direct effect on reducing costs, improving collaboration capacity, diversifying communication methods, or expanding businesses into new markets (Amankwah-Amoah et al., 2021, p. 603). Consequently, digital transformation has penetrated most aspects of daily life (Kumar, Ramachandran and Kumar, 2020, p. 1), thus allowing the accumulation of very large volumes of data (Haenlein and Kaplan, 2019, p. 1). Data availability, together with the increasing computing power of computers, has facilitated the development of machine-learning algorithms (Huang and Rust, 2021a, p. 30), paving the way for the adoption of artificial intelligence in business (Ma and Sun, 2020, p. 482), with a direct effect on the economic performance of the firm (Chatterjee et al., 2022, p. 46). Although algorithms are a central part of current AI systems, they must be combined with other elements (consumer behaviour, digital content and distribution channel) to generate value for both firms and consumers (Malthouse and Copulski, 2022, p. 130).

Over time, many variations and approaches have emerged in defining AI, with many definitions formulated by researchers currently circulating (Collins et al., 2021, p. 2). Still, there is no consensus on defining AI (Mikalef and Gupta, 2021, p. 2). Some researchers consider that the term itself has become too elusive (Manis and Madhavaram, 2023, p. 3).

The first AI definition has been formulated at Dartmouth: "a machine that behaves in ways that would be called intelligent if a human were so behaving" (McCarthy et al.,

1955). Later definitions evolved in two main directions: those that describe artificial intelligence as a simulation of human intelligence - a set of technological components that collect, process and act based on the collected data in ways that simulate human intelligence (Canhoto and Clear, 2020, p. 2); an equipment that imitates human intelligence through digital and computational means, designed to emulate or even go beyond human capabilities to solve mechanical, rational or emotional tasks (Huang and Rust, 2021b, p. 2), respectively those that describe artificial intelligence as a self-standing type of intelligence - a system made up of multiple technologies that allow computers to perceive the surrounding world, using sensors and processing the collected information, which they analyse and based on which they make certain decisions or formulate recommendations, while also learning from the experience of this process (Kolbjørnsrud, Amico and Thomas, 2017, p. 43); or the technology that could have the ability to achieve goals under conditions of uncertainty (Al Naqvi, 2020, p. 43).

In the context of marketing, some AI classifications were proposed: generative AI, focused on creation vs predictive AI, focused on data science and forecasting (Hollebeek et al., 2024, p.3); AI for task automation vs AI for context awareness (Davenport et al., 2020, p.27); analytical AI, focused on cognitive abilities vs humanized AI, focused on social-emotional intelligence and creativity (Bakpayev et al., 2020, p.91).

Either way, AI can play a crucial role in pushing for constant improvement of marketing performance by identifying correlations between various variables, such as geographic locations, frequency of exposure to a particular brand and moments of consumption (Căpățînă et al., 2020, pp. 8-9). AI could enable firms to instantly adapt their offering and product features according to consumer reactions through automated algorithms for pricing and offer adjustments, which will have a major impact on traditional firms that have not yet adopted the new technology (Abrardi, Cambini and Rondi, 2021, pp. 13-14). AI has the potential to directly contribute to both higher profits, and improved customer relationships (Grewal et al., 2021, p. 231) and to unleash a new wave of business disruption (Chintalapati and Pandey, 2022, p.38).

2. Research methodology

To explore marketing transformation in the age of AI we used the research question approach and an integrative review. We collected information regarding our topic of interest and selected relevant information.

RQ1: What are the strategies and success factors in AI adoption?

Although there have been several decades since the concept of AI appeared, the pace of adoption has visibly accelerated only in recent years (Lahlali, Berbiche and El Alami, 2021, p. 346). One of the reasons for accelerated AI adoption in recent years was the significant reduction in costs (Zhang et al., 2022, p. 11). It is estimated that 70% of companies will adopt AI in operational or production processes by 2030 (Dwivedi et al., 2021, p. 7), while the most advanced companies already consider AI as a key element for the next generations of IT systems, through which they can increase the efficiency of digital interactions between employees, customers and business partners (Ghosh et al., 2019).

3. Results and discussions

A 2022 study identified 3 key factors for the successful adoption of AI: (i) at the organisation level - culture, strategy and implementation; (ii) at the managerial level - decision-making processes and communication; (iii) at the customer level - customer experience (Volkmar, Fischer and Reinecke, 2022, p. 608).

At the organisational level, some researchers have noted that firms that have consistently achieved positive results as a result of AI adoption are characterised by an agile, risk-tolerant and uncertainty-tolerant organisational culture, with an experimental approach (Latinovic and Chatterjee, 2022, p. 971), encouraging employees to learn from failed projects, through a positive attitude (Brock and van Wangenheim, 2018, p. 21).

At the managerial level, it will be necessary to focus on delegating analytical tasks to AI and to highlight the empathetic and emotional side in organising the teams they lead (Huang, Rust and Maksimovic, 2019, p. 1). At the same time, data-driven decisions should be prioritized (Mikalef, Conboy and Krogstie, 2021, p. 81), as a quick way to gain a competitive advantage over the rest of the competition (Hallikainen, Savimaki and Laukkanen, 2020, p. 91). An important aspect is the active involvement of managers as agents of change, communicating with employees in a transparent, ethical and empathetic manner about the impact of AI (Kaplan and Haenlein, 2019, p. 9). The adoption of AI in the company's processes must be explained as clearly as possible to employees: what role AI will play, what control mechanisms exist and how it contributes to improving the company's performance (Ghosh et al., 2019). This is necessary to ensure the support of employees at all hierarchical levels of the company (Vlačić et al., 2020). Therefore, it is recommended that AI investments include not only the effective implementation costs, but also the costs of employee training (Mikalef and Gupta, 2021), and successful AI projects should be communicated internally to disseminate the knowledge gained from AI projects to all employees (Chowdhury et al., 2022, p. 32).

From the perspective of the customer relationship, those AI projects that support customer- centric strategies and user experience personalization should be prioritised, to cultivate a positive relationship with the consumer and increase the overall performance of the company (Latinovic and Chatterjee, 2022, p. 971). At the same time, a high level of transparency regarding the purposes of using AI for commercial purposes to build consumer trust and ensure an ethical approach of situations involving AI should be maintained (Kaplan and Haenlein, 2019, p. 5).

A 2022 study by NewVantage Partners found remarkable progress in the share of companies that managed to measure AI adoption through quantifiable results, increasing from 42% to 92% in five years, respectively 2022 versus 2017 (Davenport and Bean, 2022). The level of satisfaction achieved following AI adoption seems to depend on the purpose for which AI was used. Thus, a 2022 study conducted by MIT Sloan Management Review together with Boston Consulting Group concluded that companies that adopted AI offensively - to identify growth opportunities - are 2.5 times more satisfied with the results obtained than those that adopted AI defensively – for example, cost reduction (Davenport and Bean, 2022).

Recent advances in generative AI have accelerated intention to adopt this technology. A 2023 study by Boston Consulting Group, among marketing managers, showed that

around 70% of the participants' companies had used the new generative AI technologies in one way or another, with the most frequent use scenarios being personalization (67% of subjects) and generation of marketing content (49%) (Ratajczak et al., 2023, p.2).

RQ2: How can AI be integrated in marketing?

In practice, AI is gradually introduced in marketing, mostly through experiments, that could be deployed at a larger scale in case of success and could unleash business disruption (Chintalapati and Pandey, 2022, p.38).

Conceptually, AI scenarios in marketing were grouped into (i) action (through standardisation or personalization of content), (ii) analysis (collecting and processing data to understand the consumer) and (iii) strategy (segmentation, targeting or positioning) (Huang and Rust (2021a, pp. 30-32).

The development of machine-learning algorithms has accelerated the progress of contemporary marketing and provided companies with new tools to accurately identify very detailed profiles of consumers (Akter et al., 2022a, p. 201), thus creating a more comprehensive picture of their preferences (Vlačić et al., 2021, p. 195) and behaviour (Aimé, Berger-Remy and Laporte, 2022, p. 816).

One of the most relevant use cases is natural language processing (NLP), which helps machines to read, understand, interpret and interact with humans (Latinovic and Chatterjee, 2022, p.968) so that they could potentially replace customer support, although disclosing their artificial nature had a negative impact on purchase rate (Ngai and Wu, 2022, p.40). In addition, virtual assistants have limited use in long conversations as they don't possess enough AI memory to remember and to use initial information (Metz, 2020).

Recent advancements in generative AI made it possible to create artificial identities that could play the role of virtual influencers in communication and on social media platforms in particular. A virtual influencer is very similar to an authentic (human) influencer since its appearance is hard to distinguish from a human face. It simulates the realistic features and personalities of a human influencer, but it is entirely built digitally by AI (Ferraro et al., 2024, p.2). As opposed to human influencers, virtual influencers have the advantage of providing greater flexibility in content creation (Gerlich, 2023, p.1), potentially lowering cost and removing the likelihood of being involved in a scandal (Sands et al., 2022, p.2).

An extended systematisation of use scenarios was compiled by Chintalapati and Pandey (2022, pp. 49-51), who identify a wide range of AI research concerns including AI-assisted searching, recommendation systems, programmatic advertising, marketing content generation, personalization, virtual realities, visual recognition, marketing automation, forecasting, campaign execution, customer segmentation and data collection.

RQ3: What are the roles AI could play in marketing in the future?

A virtual infinite constant flow of data complicates the decision-making process in the modern marketing environment (Nordin and Ravald, 2023, p. 2). In this respect, we have identified several instances of possible AI integration in the marketing function of a firm:

Automation

AI can automate certain frequent marketing tasks, such as data analysis to provide immediate information or solutions to consumers (Yau, Saad and Chong, 2021, p. 2). The first stage of automation included repetitive, administrative tasks (Latinovic and Chatterjee, 2022, p. 970). The second stage consists of automating analytical tasks, such as data processing and automated decision-making (Huang, Rust and Maksimovic, 2019, p. 4).

Among the benefits of AI automation in marketing we can highlight: maintaining consistently high quality standards (McKendrick, 2021); increased reaction speed, reduced human errors and the ability to immediately generate relevant messages for the consumer using dynamic content (Haleem et al., 2022, p. 125); increased labour productivity and decision-making process through better and faster data processing (Abrardi, Cambini and Rondi, 2021, pp. 4-6); personalization process by introducing generative AI elements (Kshetri, 2024, p. 73).

Some researchers warn that too much automation through AI may lead to a downgrade of human innovation capacity because of less practical knowledge and potentially limited opportunities to learn from the experience (De Bruyn et al., 2020, pp. 100-101).

Augmentation

AI could work in tandem with human employees and be assigned the role of performing specific tasks or making certain decisions autonomously (Frank, Herbas-Torrico and Schvaneveldt, 2021, p. 3). There are multiple levels of AI involvement in this augmentation process, from a minimal level, in which AI supports the human employee punctually, but the latter retains almost full control over the process ("HITL - Human in the loop") to a maximum level, in which AI will make almost all decisions, possibly supervised by a human employee who would intervene to adjust constraints and objectives ("HOTL - Human out of the loop") (Ross and Taylor, 2021). The level of AI involvement is lower at the extremities of business processes, while the human contribution will continue to be predominant at the initiation and preparation of the process, respectively at evaluation and strategy, an aspect that can be graphically represented in the form of a smiley line (Ferras-Hernandez, 2018, pp. 3-4).

Although currently AI involvement seems to be more productive when aimed at augmenting the capabilities of human employees rather than replacing them (Davenport et al., 2020, p. 24), over time it is expected to require less and less human involvement to operate and develop (Manis and Madhavaram, 2023, p. 5). Also, according to research conducted so far, the AI augmentation effect is more effective when used in a one-to-one relationship (in tandem with a single human employee) than when used collectively (Fügener et al., 2021, pp. 1549-1552).

Personification

Some practical observations show that through the incremental accumulation of intelligence level AI will move from the role of augmentation to the role of replacing humans in certain aspects (Huang and Rust, 2021b, p. 9). This would lead to the personification of AI, which means we could have specific AI roles in a firm, like an AI Specialist, whose duties would be to perform specific tasks or an AI Manager, whose role would be to monitor and improve employees efficiency and productivity. Reaching this level, although from a distant perspective, constitutes a considerable potential for increasing the efficiency and productivity of human employees (Jeon, 2022, pp. 892-

895). At an extreme level, the successful incorporation of such roles performed by AI within an organization could lead to the emergence of hyper-productive corporations, operating entirely without human employees (Ferras-Hernandez, 2018, p. 2).
Alternatively, AI could become a stand-alone consumer who would substitute the human buyer for certain types of purchases (e.g. scheduling or restocking) and may require a separate approach similar to the one currently used to study human consumption behaviour (Huang and Rust, 2022, pp. 2-4). This phenomenon could lead to the emergence of new forms of economic competition and a profound transformation of the business environment due to the emergence of a new category of consumers, in the form of artificial entities to which people will likely delegate some of their purchasing decisions in the future (Rust, 2020, p. 1; de Bellis and Johar, 2020, p. 74). As this phenomenon extends, more research efforts will be needed to identify how marketing practice will be affected in this context (Huang and Rust, 2021a). Some researchers already believe that one of the consequences of this phenomenon would be lowering the impact of advertising, which would no longer have the same effect in the situation where AI replaces the consumer (Abrardi, Cambini and Rondi, 2021, p. 14).
Another type of personification could manifest soon enough in communication, where AI influencers may thrive in the digital environment displaying several intrinsic advantages like eternity (it does not age, it does not transform), adaptability (it can perfectly adapt to the context and brand profile), promptness (it can react immediately) and hyper-personalization (it can be declined into variations that are theoretically customized to the level of each consumer) (Sands et al., 2022, p. 18).

Conclusions

The adoption of AI in marketing is both a factor and a consequence of current marketing transformation. The influence of this technology on the customer experience, the ability for very detailed profiling and the possibility to take over tasks that are usually performed by humans open up several fronts simultaneously, which reinforce each other. Adoption is expected to be a lengthy process, and successes will not be uniform, which will create conditions for additional competitive pressures for traditional firms. The recent popularity of generative AI in marketing creates a new ocean of possibilities that will accelerate current marketing transformation.
The success of adopting artificial intelligence is not guaranteed, and companies are not yet able to fully exploit the potential of AI (Volkmar, Fischer and Reinecke, 2022, p. 599). Among the challenges that can delay or fail AI adoption initiatives we can highlight the lack of sufficiently well-trained data specialists (de Bellis and Johar, 2020, p. 76), placing AI projects in the IT area, rather than addressing them from a strategic marketing perspective (Lahlali, Berbiche and El Alami, 2021, p. 346), relatively high costs compared to the expected benefits following AI adoption (Kshetri, 2024, p.74), setting unrealistic goals, which are not met (Latinovic and Chatterjee, 2022, p. 966).
Some of the obstacles could be overcome by AI itself. For example, to compensate for the lack of available data, AI could actively become an agent that searches for information, collects data, analyses it, initiates recommendations, or even makes acquisitions on its own (Huang and Rust, 2022, p. 2).

Nevertheless, the adoption and widespread manifestation of artificial intelligence constitutes a distinctive element compared to previous stages of industrial transformation (Yang et al., 2022, p. 1). In the long run, it remains to be seen whether it is a sustainable evolution or excessive enthusiasm ("hype"), already perceptible in some ways (Malthouse and Copulski, 2022, p. 5) due to mixed-success in development of some AI projects (Brock and van Wangenheim, 2019, p. 2).

Ethical issues and public perception remain important subjects that require careful study as the new technology invades human space. Understanding the new technology and how it can boost productivity remains a key challenge for most organisations, while risks and side-effects are not entirely clear.

Should the marketing function will be able to integrate practical AI scenarios and will find the optimal collaboration set-up with data specialist teams could contribute not only to its function importance in future companies, but also to critically influence their higher or lower success.

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