

The Role of Artificial Intelligence in Optimizing Marketing and Sales Processes in International Trade

Mohammadtaha Esmaeilzadeh Ashini (First Author,
Corresponding Author)
Business Management and Marketing Group
University of Imam Sadiq
Tehran, Iran

Hamed Azizi Ghanzagh (Second Author)
Department of Economics
University of Tehran (UT)
Tehran, Iran

Abstract

This study aims to investigate the role of artificial intelligence (AI) in optimizing marketing and sales processes. The data was collected through semi-structured interviews with managers and experts and analyzed using thematic analysis. The findings revealed that AI effectively reduces costs, minimizes human errors, improves customer experience, and increases operational speed. Companies can leverage this technology to optimize their marketing and sales performance. Additionally, the results showed that using AI for data analysis and automating marketing processes enhances managerial decision-making accuracy and improves customer interactions. The application of intelligent technologies in advertising and service personalization leads to increased customer satisfaction and overall company productivity. It is recommended that companies invest more in AI technologies and train employees to fully utilize these capabilities for improving efficiency and competitiveness.

I. INTRODUCTION

In today's world, where globalization and digitalization are rapidly progressing, international markets face numerous challenges, including rapidly changing demands, intense competition, and cultural diversity. On the other hand, marketing and sales processes have undergone fundamental transformations in these complex environments. In this context, artificial intelligence (AI), as a novel and transformative technology, plays a significant role in optimizing marketing and sales processes. AI has the ability to help businesses navigate the complexities of global markets by analyzing big data, predicting customer behavior, and customizing marketing and sales strategies [1].

One of the biggest challenges for international businesses is managing diverse markets with varying needs, laws, and conditions. For instance, what may be effective in one local market could be completely different in another. AI can assist businesses in making better decisions and adjusting their marketing strategies to suit both local and global market conditions by analyzing market and customer data [2]. In this way, businesses can enhance their competitive advantage in international markets by optimizing advertising campaigns, increasing conversion rates, and improving the customer experience [3].

AI can also contribute to automating sales processes. This automation means increased workforce productivity, reduced costs, and improved business performance [4]. AI tools, by analyzing past data and predicting future trends, can help salespeople interact more effectively with customers and optimize their sales [5]. These capabilities are particularly crucial in complex and challenging international markets, where product and service diversity, cultures, and regulations exist.

From an economic perspective, international businesses need to achieve greater efficiency in utilizing their resources. AI, with its ability to improve resource management, reduce marketing and sales costs, and enhance business decision-making, helps businesses compete in global markets [6]. Additionally, in customer experience, AI's use in predicting customer needs and preferences leads to personalized interactions that can dramatically increase customer satisfaction [7].

In international markets, where diverse cultures and consumer preferences exist, customizing marketing strategies is a key factor for success. Using machine learning algorithms to analyze customer behavior and predict their future needs allows businesses to offer their products and services more accurately to different customers [8]. Moreover, this customization can contribute to increased profitability by improving the return on investment (ROI) and conversion rates.

Privacy and data security challenges are another issue that AI faces. While this technology helps businesses collect and analyze customer data, concerns also arise regarding the misuse of this information [9]. Therefore, alongside the advantages of utilizing AI in marketing and sales, privacy and data security issues must also be considered.

The rapid changes in the global market require companies to continuously optimize their sales processes to increase sales and competitiveness. AI, by bringing about significant changes in data analysis and customer behavior prediction, plays an essential role in improving these processes. This research aims to examine the role of AI in optimizing international marketing and sales to provide businesses and marketers with more insights on how to use AI effectively.

II. THEORETICAL FRAMEWORK

A. Smart Marketing

Smart marketing is recognized as a modern approach in the business world, which utilizes data and advanced technologies such as artificial intelligence (AI) and machine learning to optimize and personalize marketing strategies [10]. In this type of marketing, the primary goal is to gather more precise information about customers and analyze data to design smarter and more effective marketing strategies. This approach is based on utilizing advanced technologies that can accurately predict customer behavior and personalize marketing communications according to their needs and preferences [11].

In smart marketing, data serves as the primary fuel for decision-making. Businesses, by leveraging data-driven analytics, can better identify markets and predict customer needs more accurately. This data can be collected from various sources such as customer interactions with websites, online purchase behaviors, social media, and even personal data [12].

Smart marketing, due to its use of new technologies and benefiting from more accurate and complex analyses, enables businesses to respond more quickly to market changes. Generally, smart marketing helps marketing strategies to be flexibly adjusted based on customer needs, thereby increasing customer satisfaction and return on investment (ROI) [5].

B. Marketing and Sales Processes in International Trade

International marketing refers to the understanding and analysis of foreign markets and the formulation of strategies tailored to these markets. Companies must adapt their business models to global market changes, which include considering international trade regulations, exchange rates, different quality standards, and cultural diversity. Sales refer to strategies and techniques related to interacting with customers in foreign markets, where local preferences and competitive conditions play a significant role [14].

Marketing and sales processes in international trade encompass all the activities and actions companies undertake to attract customers and achieve their sales goals at the international level. These processes typically involve stages such as market analysis, identifying customer needs, creating suitable products and services, establishing effective communications with customers, and ultimately completing sales [15]. These processes can be significantly improved through the use of advanced technologies.

In marketing processes, understanding the market and analyzing customer needs are of utmost importance. Companies need to be able to gather accurate information about customers and their behaviors to design more effective strategies for advertising, product development, and customer satisfaction enhancement [12]. Additionally, in the sales sector, the focus is on increasing customer conversion rates and optimizing interactions between salespeople and customers.

In today's competitive world, the efficiency and optimization of marketing and sales processes are highly critical. These processes must not only attract new customers but also retain existing customers. To achieve this, many companies utilize smart technologies and automate marketing and sales processes to reduce operational costs while achieving better results in terms of sales and customer satisfaction [16].

C. The Role of Artificial Intelligence in Marketing

Artificial intelligence has rapidly become one of the key tools in optimizing and improving marketing processes. By using machine learning algorithms and data analysis, AI can help businesses accurately predict customer behavior and optimize their marketing strategies [17]. This technology allows businesses to significantly increase their return on investment (ROI) by accurately personalizing messages and offers.

One of the most important applications of AI in marketing is big data analysis. AI can process vast amounts of customer data and identify complex patterns in purchasing behaviors and preferences [5]. This information allows companies to create more targeted marketing strategies and tailor marketing campaigns according to the personal needs of each customer.

AI also plays a significant role in automating marketing processes. Examples of automation tools include smart email

marketing systems, chatbots, and campaign management systems, all of which operate based on AI algorithms. These tools not only make marketing processes more efficient but also provide a better experience for customers [19].

III. LITERATURE REVIEW

A review of previous research shows that artificial intelligence (AI), as a relatively new topic in scientific and interdisciplinary discussions, has been primarily studied in three main areas: AI applications and developments in marketing, the future of marketing with AI, and the associated challenges and concerns. However, few studies have examined more detailed aspects of marketing, which creates a gap in the literature. Therefore, exploring the role of AI in marketing and sales processes in international trade is of great importance and can help fill this gap by offering new insights into the subject.

In a 2023 study, Ziakis and Vlachopoulou examined the transformation of digital marketing through AI technologies. Their research identified six key areas where AI has made a significant impact: machine learning algorithms, social networks, consumer behavior, e-commerce, digital advertising, and budget optimization. They also emphasized the need for future research on AI's evolving role in these areas [19].

Huang and Rust (2021) developed a strategic framework for AI in marketing, which includes three phases of AI application: mechanical AI for automating repetitive marketing activities, analytical AI for data processing and decision-making, and emotional AI for analyzing human interactions. This framework illustrates how AI can be integrated into the research, strategy (segmentation, targeting, and positioning), and execution stages of marketing [21].

A systematic review by Verma and colleagues in 2020 highlighted how transformative technologies such as the Internet of Things (IoT), big data analytics, blockchain, and AI are reshaping business operations. AI, being the latest transformative technology, holds immense potential for revolutionizing marketing. By reviewing 1,580 articles, the study created conceptual and scientific networks to map out the importance of AI in marketing and to identify directions for future research [22].

De Mauro et al. (2022) classified AI and machine learning applications in marketing, identifying 11 recurring use cases across four domains: buyer principles, consumer experience, decision-making, and financial impact. This classification is useful for both practical marketing applications and academic researchers exploring AI's role in marketing [23].

In another study, Davenport et al. (2020) investigated how AI is likely to reshape the future of marketing. They provided a multi-dimensional framework for understanding AI's impact, focusing on intelligence levels, task types, and the use of robots. Additionally, the study discussed challenges related to

privacy, bias, and ethics, suggesting that AI should enhance human decision-makers rather than replace them [24].

In a more recent study in 2023, Hauser, Li, and Mao explored how AI and user-generated data are transforming how firms understand customer needs. Their work highlighted how AI helps companies structure and prioritize voice-of-customer (VOC) data, using different methods of analysis based on the company's objectives and the nature of the data [25].

Finally, Hassan et al. (2024) discussed various AI applications in marketing, such as personalized customer experiences, chatbots and virtual assistants, predictive analytics, social media marketing, content generation and management, voice search optimization, and marketing automation. Their study found that AI improves customer interactions and boosts marketing efficiency [26].

While these studies have made significant contributions to the understanding of AI in marketing, there is still a need for further research focusing specifically on the role of AI in optimizing marketing and sales processes in international trade. This study aims to address this gap and provide actionable insights for businesses and marketers.

IV. RESEARCH METHODOLOGY

The present study is categorized as applied research in terms of its objective, as it examines and explains the role of artificial intelligence (AI) in optimizing marketing and sales processes. This research aims to identify the practical applications of AI in improving business performance and provide actionable recommendations for enhancing marketing efforts. In terms of data collection, this study follows a qualitative approach. The required data was collected through semi-structured interviews with experts and managers in the fields of marketing and information technology.

The sampling method used in this study was theoretical sampling, a type of purposive sampling where the researcher selects individuals who have the most relevance to the research topic. This method continued until theoretical saturation was reached, meaning that no new data or themes were identified through additional interviews. In this study, saturation was observed after the eleventh interview, although two more interviews were conducted to increase accuracy and thoroughness, bringing the total number of interviews to thirteen.

The collected data was analyzed using thematic analysis. In this method, after familiarizing with the data, initial coding was carried out, and similar codes were grouped. Subsequently, the main and sub-themes were identified. These themes represent the key concepts raised by the participants and cover various dimensions of the role of AI in marketing and sales processes.

V. RESEARCH FINDINGS

In this study, data was collected through semi-structured interviews with 13 experts in the fields of marketing and artificial intelligence. After conducting 11 interviews, data saturation was reached, meaning no new themes were

identified; however, two additional interviews were conducted to ensure the accuracy of the research. Ultimately, 9 main themes and 57 sub-themes were identified, which are presented in the table below, along with the number of interviews in which each theme was identified.

TABLE I. RESEARCH FINDINGS

Row	Main Themes	Sub-Themes	Interview Numbers	Frequency
1	Cost Reduction	Improving operational efficiency	1, 3, 5, 6, 9	5
		Reducing labor costs	2, 4, 7, 8, 11, 13	6
		Reducing advertising costs	2, 5, 8, 10	4
		Optimizing supply chain management	6, 9, 12	3
		Reducing market research costs	2, 3, 8, 11	4
2	Reducing Human Errors	Reducing errors in data analysis	1, 4, 5, 7, 10	5
		Automating decision-making in marketing	3, 4, 6, 9, 11, 13	6
		Reducing errors in advertising campaigns	2, 5, 8, 12	4
		Improving accuracy in competitor analysis	1, 4, 7	3
3	Improving Customer Experience	Personalizing customer interactions	1, 3, 4, 6, 8, 9	6
		Providing better services to customers	2, 5, 7, 11, 13	5
		More precise analysis of customer needs	1, 4, 8, 10	4
		Increasing customer satisfaction	2, 6, 9	3
4	Enhancing Decision-Making Accuracy	Improving accuracy in market analysis	2, 3, 5, 7	4
		More precise predictions of customer behavior	1, 4, 6, 8, 12	5
		Optimizing advertising strategies	3, 5, 7, 9, 10, 11	6
		Competitive data analysis	2, 5, 8, 12	4
5	Increasing Operational Speed	Improving response speed to customers	1, 3, 7, 12	4
		Speeding up data analysis	2, 4, 5, 6, 10	5
		Reducing campaign launch times	2, 6, 9	3
		Accelerating strategy implementation	3, 7, 10, 11	4
6	Improving Advertising Accuracy	Targeting advertising based on data analysis	1, 3, 5, 7, 9, 12	6
		Using machine learning algorithms in advertising	2, 4, 8, 10	4

Row	Main Themes	Sub-Themes	Interview Numbers	Frequency
		More accurate analysis of target audiences	1, 5, 11	3
		Reducing errors in ad displays	2, 7, 9, 12	4
7	Improving Resource Management	Optimal allocation of marketing resources	1, 3, 5, 7, 9	5
		Reducing human resource wastage	2, 4, 6, 10	4
		Optimizing the use of advertising resources	3, 7, 11	3
8	Facilitating Managerial Decision-Making	Providing more accurate analyses for decision-making	3, 4, 6, 8, 11	5
		Automating decision-making processes	2, 5, 7, 10	4
		Improving predictive capabilities in decision-making	1, 6, 9	3
9	Improving International Competitive Ability	Enhancing competitiveness in international markets	1, 3, 7, 12	4
		Strengthening competitive strategies	2, 4, 6, 9, 10	5
		Better competitor analysis	3, 5, 11	3

VI. RESULTS AND RECOMMENDATIONS

This study aimed to examine the role of artificial intelligence (AI) in optimizing marketing and sales processes through semi-structured interviews with marketing experts and managers. The findings revealed significant impacts of AI in several areas, including cost reduction, minimizing human errors, improving decision-making accuracy, increasing operational speed, and enhancing customer experience. The results indicate that businesses leveraging AI technologies can elevate their marketing performance to new levels of efficiency and effectiveness.

One of the key findings is the reduction in costs through AI. Companies experience improved operational efficiency and a decrease in the need for human resources by automating and implementing intelligent marketing processes. Additionally, AI helps optimize resource management and reduce advertising costs. For instance, machine learning systems allow more accurate analysis and prediction of customer behavior, significantly lowering the costs associated with ineffective advertising campaigns [17].

Beyond cost reduction, minimizing human errors is another significant outcome. AI can automate decision-making and improve data analysis accuracy, reducing the errors associated with manual analysis and human judgment. The use of smart algorithms in running advertising campaigns helps increase precision and prevent human mistakes [18]. This is particularly effective in complex big data analyses, where marketing managers are empowered to make optimal decisions.

Improving customer experience also emerged as a key benefit of AI. By personalizing interactions and optimizing services based on customer behavioral data, companies can significantly enhance customer satisfaction. Advanced data analysis of customer behavior and the customization of services and products enable businesses to improve customer experience and foster more sustainable relationships with them [10]. The results suggest that companies that integrate AI to improve customer experience are likely to gain greater customer loyalty.

Another critical finding was the increased accuracy in decision-making. Through advanced AI algorithms, businesses can conduct more accurate market analyses and predict customer behaviors more precisely, leading to better decisions and more successful marketing campaigns [12]. By leveraging big data and AI, companies can identify new customer behavior patterns and adjust their strategies accordingly, allowing them to focus more precisely on customer needs and improve their marketing outcomes.

Finally, one of the other positive outcomes of AI in marketing is the increase in operational speed. Traditional analytical processes, which are often time-consuming, become significantly faster with AI tools, allowing businesses to respond more quickly to customer needs and execute marketing campaigns faster [13]. This is especially crucial in competitive markets, where the speed of responding to market demands is a key factor in success.

The findings demonstrate that using AI helps businesses make more informed decisions, reduce costs, and improve accuracy in marketing and sales processes. By automating

marketing tasks, companies can not only improve the precision of campaigns but also minimize human errors associated with manual data analysis.

Recommendations:

- **Investment in AI:** Companies should increase their investment in AI technologies and provide training for their employees to familiarize them with these tools.
- **Personalization of Services:** Utilizing AI for service personalization and optimizing advertising strategies is highly recommended. AI can assist in making more accurate and complex managerial decisions by analyzing big and multidimensional data.
- **Speeding Up Marketing Operations:** Companies can take advantage of AI's speed in processing data to respond faster to customer needs and accelerate marketing operations.
- **Continuous Evaluation of AI:** It is important for businesses to continuously evaluate the performance of AI in their marketing processes to ensure they achieve long-term efficiency improvements.

For future studies, it is recommended to explore the long-term effects of AI usage in various industries and its relationship with increasing market share. Additionally, future research could examine the challenges of AI implementation in small and medium-sized enterprises (SMEs) to determine how this technology can be utilized under different circumstances. Finally, a deeper investigation into the cultural and social impacts of AI in marketing would help companies better tailor their strategies.

REFERENCES

- [1] R. T. Rust and M. H. Huang, "The service revolution and the transformation of marketing science," *Marketing Science*, vol. 33, no. 2, pp. 206–221, 2014.
- [2] D. Chaffey and F. Ellis-Chadwick, *Digital marketing: Strategy implementation and practice*, 7th ed. Pearson, 2019.
- [3] A. Kaplan and M. Haenlein, "Rulers of the world unite! The challenges and opportunities of artificial intelligence," *Business Horizons*, vol. 63, no. 1, pp. 37–50, 2020.
- [4] A. McAfee and E. Brynjolfsson, *Machine platform crowd: Harnessing our digital future*. WW Norton & Company, 2017.
- [5] T. H. Davenport and D. Ronanki, "Artificial intelligence for the real world," *Harvard business review*, vol. 96, no. 1, pp. 108–116, 2018.
- [6] N. A. Perifanis and F. Kitsios, "Investigating the influence of artificial intelligence on business value in the digital era of strategy: A literature review," *Information*, vol. 14, no. 2, p. 85, 2023.
- [7] K. N. Lemon and P. C. Verhoef, "Understanding customer experience throughout the customer journey," *Journal of marketing*, vol. 80, no. 6, pp. 69–96, 2016.
- [8] E. Aguirre, D. Mahr, D. Grewal, K. De Ruyter, and M. Wetzels, "Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness," *Journal of retailing*, vol. 91, no. 1, pp. 34–49, 2015.
- [9] D. Acemoglu and P. Restrepo, "Artificial intelligence, automation, and work," in *The economics of artificial intelligence: An agenda*, University of Chicago Press, 2018, pp. 197–236.
- [10] P. Kotler, H. Kartajaya, and I. Setiawan, *Marketing 4.0: Moving from traditional to digital*, Wiley, 2017.
- [11] R. T. Rust, "The future of marketing," *International Journal of Research in Marketing*, vol. 37, no. 1, pp. 15–26, 2020.
- [12] D. Chaffey and F. Ellis-Chadwick, *Digital marketing: Strategy implementation and practice*, 7th ed., Pearson, 2019.
- [13] P. R. Cateora, M. C. Gilly, and J. L. Graham, *International marketing*, 19th ed., McGraw-Hill Education, 2024.
- [14] P. Kotler and K. L. Keller, *Marketing management*, 15th ed., Pearson, 2016.
- [15] U. Hannig, "Automation of repetitive processes in marketing and sales," in *Marketing and Sales Automation: Basics, Implementation, and Applications*, Springer International Publishing, pp. 7–18, 2023.
- [16] A. McAfee and E. Brynjolfsson, *Machine platform crowd: Harnessing our digital future*, WW Norton & Company, 2017.
- [17] C. Ziakis and M. Vlachopoulou, "Artificial intelligence in digital marketing: Insights from a comprehensive review," *Information*, vol. 14, no. 12, p. 664, 2023.
- [18] M. H. Huang and R. T. Rust, "A strategic framework for artificial intelligence in marketing," *Journal of the Academy of Marketing Science*, vol. 49, no. 1, pp. 30–50, 2021.
- [19] S. Verma, R. Sharma, S. Deb, and D. Maitra, "Artificial intelligence in marketing: Systematic review and future research direction," *Journal of Innovation & Knowledge*, vol. 6, no. 1, p. 100002, 2020.
- [20] A. De Mauro, A. Sestino, and A. Bacconi, "Machine learning and artificial intelligence use in marketing: A general taxonomy," *Italian Journal of Marketing*, vol. 2022, no. 4, pp. 439–457, 2022.
- [21] T. Davenport, A. Guha, D. Grewal, and others, "How artificial intelligence will change the future of marketing," *Journal of the Academy of Marketing Science*, vol. 48, no. 1, pp. 24–42, 2020.
- [22] J. R. Hauser, Z. Li, and C. Mao, "Artificial intelligence and user-generated data are transforming how firms come to understand customer needs," in *Artificial Intelligence in Marketing*, Emerald Publishing Limited, 2023, pp. 147–167.
- [23] A. Hassan, F. A. Mohammed, and A. Y. Seyadi, "Artificial intelligence applications for marketing," in A. M. A. Musleh Al-Sartawi and A. I. Nour (Eds.), *Artificial intelligence and economic sustainability in the era of industrial revolution 5.0*, Springer, 2024, pp. 579–594.