Industrial Economics Review (KHAZZARTECH)
EISSN: 2588-2341 ISSN:1112-7856
Volume: 15 / N°: 02 (2025)
p 198-222

Applications of Artificial Intelligence in Service Marketing: Between Innovative Solutions and Ethical Responsibility -An Analytical Study in Light of International Experiences-

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***Received*: 2025-10-31** ***Accepted*: 2025-12-16**

Abstract

This research paper aims to illustrate the extent of benefiting from the advantages of artificial intelligence in solving marketing problems characteristic of the service sector, in light of the ethical challenges resulting from marketing practices enabled by this technology. This is based on an extensive systematic review of the literature and an analysis of artificial intelligence–based marketing practices of leading global companies.

Through this research paper, it became evident that artificial intelligence mechanisms and techniques significantly contribute to addressing many obstacles faced by institutions in implementing their marketing programs in the service sector, and that these mechanisms and techniques have helped consumers choose the best services and offers efficiently. However, the increasing use of artificial intelligence in marketing has highlighted ethical issues that must be addressed to ensure responsible handling of this technology.

Keywords:
Artificial Intelligence, Characteristics of Services, Marketing Problems, Ethical Implications.

JEL Classification Codes: M31, M15, O33, D83, A13.

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1. INTRODUCTION

There is no doubt that artificial intelligence has penetrated various spheres of life, and among these areas we find the marketing activity of institutions, where the latter have started to rely on artificial intelligence techniques and mechanisms to increase the quality of their products, whether goods or services. It is no secret to specialists that marketing services differs somewhat from marketing tangible goods, since these services are characterized by a set of attributes and features that add some difficulty to the marketing process of services, and these difficulties affect both the institution and the consumer alike.

Thanks to artificial intelligence, institutions have been able to overcome some of the obstacles and problems of service marketing. Artificial intelligence techniques and mechanisms have enabled service institutions and consumers alike to adapt and adjust to the different characteristics of services, and to propose solutions and alternatives that reduce — or at least mitigate — the marketing problems of the service. But this was accompanied by a set of ethical challenges that threaten the well-being of individuals and societies, including biased marketing practices, blatant violations of privacy, and targeted creation of desires that were not awaiting satisfaction, among other negative practices of smart algorithms.

The discussion of artificial intelligence ethics is derived from discussions on technology ethics in general. There are those who support the view that it entails ethical benefits and has positive implications that extend to affect individuals' perception of the world, their behaviors, and their environmental interactions. The negative side has recorded harmful practices of technology, from virtual addiction to technological stress and so forth. In the context of these paradoxes embodied by artificial intelligence, the

ethical challenges of artificial intelligence emerge. These ethical challenges are gaining importance and urgency due to the widespread impact of artificial intelligence techniques.

I-1- Study Problem:

The rapid reliance on artificial intelligence techniques across various organizational activities has led to significant efficiency gains, but at the same time brought new risks related to algorithmic bias and lack of transparency. In the context of the service marketing sector's orientation toward adopting this technology, its problems have found a solution by benefiting from unprecedented opportunities for innovation, enhancing operational efficiency, and providing highly personalized customer experiences. However, benefiting from this will not be free from serious challenges to the consumer and to society. Thus, the paradox of artificial intelligence applications in service marketing emerges, given the serious ethical implications it creates.

What are the limits of benefiting from artificial intelligence techniques in service marketing in light of the ethical implications of this technology?

I-2- Study Objectives:

Through this research paper, we aim to achieve the following objectives:

- Demonstrate the importance and place of artificial intelligence in modern marketing;
- Demonstrate how artificial intelligence techniques and mechanisms are used in marketing in general and in service marketing in particular;
- Highlight how artificial intelligence contributes to solving service marketing problems;

- Highlight the ethical challenges faced by the application of artificial intelligence in service marketing;
- Cite the experiences of leading global companies in the field;
- Guide Algerian institutions toward the limits of benefiting from adopting artificial intelligence in marketing their products.

I-3- Study Methodology:

This paper aims to measure the transformative effect of artificial intelligence on service marketing, based on an extensive systematic review of the literature related to artificial intelligence applications in the sector and published between 2020 and 2025. In this paper, we provide an overview of the available technological solutions to enhance solutions to the challenges created by service characteristics. We also shed light on the ethical implications accompanying the adoption of artificial intelligence technology, by analyzing the experiences of leading global institutions.

II - The Theoretical Framework of the Study

Through the theoretical aspect of this research paper, we attempt to establish the concept of the study variables.

II -1- Overview of the Concept of Artificial Intelligence

In general, it can initially be said that artificial intelligence (AI) is the simulation of human intelligence processes by computer systems (Nazem & Afram, 2023).

Artificial intelligence is simply a term that describes the way a computer program or machine is able to imitate different types of human behavior and thinking, such as movement and speech, and the ability to execute acquired intelligence to perform various tasks with minimal human intervention (Bouzid, 2022).

The roots of artificial intelligence date back to the 1940s with the spread and use of computers. During the early 1950s, focus was placed on neural networks, whereas in the 1960s, research activity began shifting toward knowledge-representation-based systems, which continued through the 1970s. At the beginning of the 1980s, there was a major breakthrough in artificial intelligence research. The history of artificial intelligence during the twentieth century can be summarized in the following table (Bobha, 2022):

Table n°1: Developments in the field of artificial intelligence

Year	Innovation / Development
1943	Foundation of neural network science
1945	The term "Robotics" was coined by Isaac Asimov
1950	Alan Turing introduced the Turing Test to evaluate machine intelligence; Claude Shannon published a detailed analysis of chess as a research topic
1956	John McCarthy coined the term Artificial Intelligence (AI), and the first AI program was presented at Carnegie Mellon University
1958	John McCarthy invented the LISP programming language for AI
1964	Discovery that computers could understand natural language well enough to correctly solve algebraic word problems
1965	Joseph Weizenbaum at MIT built ELIZA, a natural language processing program demonstrating human–machine communication
1969	Researchers at Stanford Research Institute developed the Shakey robot, capable of problem-solving
1973	The University of Edinburgh's Robotics Society team built Freddy, a robot capable of using vision to identify and assemble models
1979	The Stanford Cart introduced the first computer-controlled autonomous vehicle

1985	Introduction of a computer program capable of creating original artistic images
1990	Major progress across all AI fields: machine learning, case-based reasoning, algorithms, automatic scheduling, field services, data mining, web crawlers, natural language understanding and translation, virtual reality, and lifelike gaming
1997	Deep Blue chess program defeated world champion Garry Kasparov
2000	Interactive robots became commercially available; MIT introduced Kismet, a robot with an expressive, emotional face
2004	DARPA launched a major challenge requiring competitors to build fully autonomous self-driving cars
2005	Honda's ASIMO robot could walk faster than humans and serve customers in restaurants; also, Switzerland's Blue Brain Project was launched to simulate the human brain in detail
2009	Google developed a self-driving car
2011	Apple's Siri and Google Now were launched — smartphone applications using natural language to answer questions, make recommendations, and perform tasks
2013	Carnegie Mellon University released NEIL, a program designed to extract visual knowledge from web data
2017	The Future of Life Institute in California organized the Asilomar Conference on Beneficial AI, which produced a set of guiding principles for beneficial AI research
2018	Alibaba's AI language model outperformed humans in Stanford's reading comprehension test; Google Duplex was announced — a service allowing AI agents to conduct natural phone conversations and book appointments using human-like voices

Source: (Benmehdi & Chouali, 2024)

After all these developments in the field of artificial intelligence, we arrived at three main types of artificial intelligence (Benmehdi & Chouali, 2024):

- **Weak or Narrow Artificial Intelligence:** Considered the simplest type of artificial intelligence, it is programmed to perform specific tasks in particular fields and within a defined environment.
- **General Artificial Intelligence:** This type collects, analyzes, and then transforms data into information through previously acquired experiences, enabling it to make independent decisions, such as self-driving cars and chatbots.
- **Super Artificial Intelligence:** This type works on simulating the way humans think. It attempts to understand the feelings and emotions of the other party and to provide solutions and suggestions based on that.

II-2- Artificial Intelligence in Marketing

Marketing in general, and digital marketing in particular, will be the field that benefits the most from artificial intelligence. Institutions have noticeably started to keep up with current trends, and recently marketers have begun to realize the great value of artificial intelligence and its most prominent features. The characteristics and advantages of artificial intelligence that can be utilized in the field of digital marketing vary and include content creation and generation, predictive analysis, data nurturing, and email marketing, in addition to the use of digital advertising and chatbots (Ben Lousif & Boulahia, 2023).

Marketing through artificial intelligence is an approach aimed at maximizing the use of technology and customer data to enhance the customer experience, relying on various techniques such as big data analytics, machine learning, and gaining new

insights specific to the targeted customer segment. Below are some advanced digital methods and tools that can help the marketing management build marketing strategies using artificial intelligence (Piyush Jain, 2020):

- **Deep fishing:** With the rapid and accelerating growth of technology, customers can now find everything they are searching for at any time thanks to fast search engines, the most famous of which is Google. In such cases, artificial intelligence helps marketers analyze and understand customers' search patterns and identify the main and important areas on which efforts should be focused.
- **Genius ads:** With the large availability of data, marketers can create online advertisements that are smarter and more effective. Artificial intelligence solutions and suggestions can evaluate keyword searches and deeply analyze customers' social profiles, helping create customized ads.
- **Filtered content:** Filtered content can help marketers' audiences analyze and understand customers on an individual basis. Artificial intelligence can also be used to filter current buyers and create customized content that is ideal and suitable for groups of potential customers.
- **Artificial intelligence bots:** Retaining loyal customers is no less important than acquiring new ones. Therefore, artificial intelligence bots work as main engines to retain loyal customers as much as possible.

II-3- Marketing Problems of Services

Services are characterized by a set of features and characteristics, which cause a number of marketing problems and difficulties for both the institution and the customer alike. Below is an explanation of these problems and difficulties (Al-Damour, 2005):

II-3-1- From the institution's point of view

We will address in detail the problems related to inventory, communication, pricing, and patenting.

- **Inventory:** Intangible services cannot be stored. This characteristic is important if we consider inventory and its function in any traditional industrial project; inventory allows the achievement of balance between continuing production in an organized manner on the one hand, and avoiding irregular demand on the other. As for service organizations (such as insurance companies, airlines, or hotels), the problem of balancing these two variables can be solved differently: variable demand is met by maintaining production capacity, not by storing the actual product.
- **Communication:** The intangibility of services results in difficulty in communication with customers in general and potential customers in particular. It is naturally not easy to form a perception of something that has no physical appearance, especially during preparation for marketing efforts. For example: What image is used to advertise hotel services or insurance services? The matter becomes even more complicated when the goal is to attract customers to an existing service or introduce a new one. These organizations mainly focus on clarifying and displaying the potential benefits that can be obtained from the provided service. In addition, another problem relates to distinguishing between services provided by institutions belonging to the same industry. Advertising may be considered a basic differentiation tool, yet implementing differentiation strategies in service organizations is difficult despite their importance.

- **Pricing:** Calculating the cost of tangible goods is not difficult—at least regarding direct costs. Typically, a profit margin is added to the cost to determine the selling price. Although this method is mainly based on traditional economic theory, organizations today resort to other pricing methods. However, pricing in the service sector is more difficult and more complex when calculating direct costs—the part assumed to be easy. In services, the difficulty arises because there are no raw materials involved, in addition to the difficulty in accurately measuring the time required to produce the service. For example, in insurance companies, producing a single service may take several months, and distributing other costs is also difficult.

The psychological impact of price when purchasing services is much stronger than in the case of physical goods. The relationship between price and quality is often strong in the customer's mind regarding services, because the customer cannot evaluate the service on a material basis, and therefore tends to take price as an indicator of quality.

- **Patent:** Since services are intangible, protecting high-quality services becomes extremely difficult, if not impossible. There are no patents, and the only way to prevent complete imitation is by protecting the trade name.

II-3-2- From the consumer's point of view

The intangibility of services results in a number of difficulties and complexities for the consumer. In this regard, we will address three main elements: trust, search process, and service image in the consumer's mind.

- **Trust:** Trust is a requirement in the services sector more than in other sectors. Consumer trust in the service provider

is essential. Trust is especially important in two cases: first, when special skills are required to perform the service, such as with physicians, where lack of skill may result in real risk; second, when performing the service involves financial risk, such as dealing with an insurance company or a bank.

- **Search process:** The type of trust required for services differs from that for physical goods, because there is no possibility of trying the service before purchasing it, and even if such possibility exists, it is not always available. How can one try a banking service, a hotel service, or an airline service before actually purchasing it?

  The search problem represents a major constraint in two respects: difficulty in building trust and the duration of the purchase process. The search process prior to purchasing a service is intensive, as potential customers look for as much data and information about the service as possible, and they seek the opinions of those who have previously used it. Therefore, what is known as instant or impulsive purchase is rare in the case of services.
- **Service image in the consumer's mind:** It may be difficult for the consumer to form a perception of the desired service because it is intangible. The expected benefits from purchasing the service are also unclear, which significantly delays the purchase decision. To overcome this, service organizations rely on highlighting the physical environment of the service, as will be explained further in axis seven regarding the physical environment or physical evidence.

These are, in general, the difficulties faced by both the institution and the customer. We will attempt to provide practical

examples and the solutions proposed by artificial intelligence to solve these problems.

III- Global corporations' applications of artificial intelligence in solving marketing problems of services

In the theoretical part of this article, we discussed and clarified the various marketing problems that arise from the characteristics of services, and in this theoretical part we will try to show how some global corporations use artificial intelligence techniques to attempt to solve these marketing problems for both the company and the customer.

III-1- Emotional artificial intelligence as a mechanism to solve the consumer's trust problem – Example: Metlife Company –

Emotional artificial intelligence is one of the most prominent mechanisms and technologies that institutions relying on artificial intelligence in marketing their products turn to, and we will try to clarify how this technology contributes to solving the trust problem in the service for the consumer (Bouziane, 2023):

The consumer suffers from a trust problem toward the service-based company, especially when the performance of the service involves financial risk, such as dealing with an insurance company or a bank. On this basis, Metlife, a prominent insurance company headquartered in the United States of America, integrated Cogito's AI training solution in ten of its call centers. This implementation aims to provide real-time guidance to agents during customer interactions. Cogito's technology uses signal-based machine learning to understand emotional states and provides instant conversation advice and solutions. As a result of this implementation, Metlife observed significant improvements, including an increase of 14 points in the Net Promoter Score (NPS), which is considered a standard benchmark used by institutions to measure, evaluate, and improve customer loyalty,

as well as measure how likely customers are to recommend the company to their friends.

III-2- The role of artificial intelligence in solving promotional communication problems for the company – Example: Affectiva Company

We previously mentioned that companies face some difficulties in the marketing communication process in the field of services, as it is difficult for them to form a perception of something that has no physical appearance. Affectiva, a company specialized in advertising research and marketing communications based in the United States, succeeded in applying emotional artificial intelligence as a powerful promotional tool. The company used emotional AI by analyzing customer reactions to ads directed to them, which enables it to gain accurate insight into what the customers are thinking, and thus to work on continuously improving the company's advertisements.

This strategy allows online ad testing and accurate design of advertisements for the targeted group before officially publishing them. Therefore, emotional artificial intelligence helps companies reduce — or at least lessen — the communication problem by designing advertisements that match customer expectations.

III-3- Dynamic pricing to solve the pricing problem in the services sector – Example: Amazon and Uber

Dynamic pricing is a pricing strategy based on changing the price of a service depending on different factors, the most important of which are the nature of the customer and the volume of demand in the market. This pricing strategy uses artificial intelligence to help the company solve some marketing problems related to the service, as illustrated in the following (Bouziane, 2023):

Amazon, widely known as the former online bookstore that became a global retail giant, has effectively used dynamic pricing as a winning strategy. By offering a wide range of products including books, electronics, etc., Amazon's use of dynamic pricing has contributed significantly to its remarkable growth. The main aspect of Amazon's dynamic pricing approach lies in the frequent change of product prices, which occurs approximately every 37 minutes according to research evidence. This translates into an average of 144 price changes per day, 1008 changes per week, and 52,560 changes per year.

This high frequency of price adjustments enables Amazon to continuously present the right price at any moment by analyzing various factors on a wide scale, such as customer purchasing behavior, competitors' prices, profit margins, and inventory data. Amazon benefits from the collected information to increase profitability; the result of this strategy was highly successful, leading to a remarkable increase of 25% in the company's profits.

As for Uber, it uses dynamic pricing for two different reasons — to increase profits, but also to ensure that taxis cover all requests. When demand for taxis increases in a certain area, Uber automatically raises the prices for customers to make these rides more attractive for Uber drivers. These prices ensure that those who are not sensitive to price pay much more than usual, but also lead to more Uber drivers heading to the area where demand is high. When demand is met, prices return to normal. People also call this "surge pricing."

III-4- Artificial intelligence and solving the problem of demand fluctuation and inventory for the company – Example: Enlitic and Oncora Medical

Companies in the services sector suffer — as we mentioned — from the problem of demand fluctuation and the difficulty of

balancing supply and demand. Additionally, the tangibility characteristic is absent in services, making storage impossible. However, thanks to artificial intelligence, many companies have managed to relatively solve these obstacles and difficulties, as evident in the following (Daqa & Hanish, 2024):

Artificial intelligence is used to perform medical tests without the need for human assistance, which reduces pressure on doctors and nursing staff by decreasing routine tasks related to patient cases. Diagnostic tools based on artificial intelligence also identify diseases faster and more accurately using traditional medical data and patient records, which contributes to improving the quality of healthcare.

Artificial intelligence algorithms contribute to improving the quality of care inside hospitals by organizing staffing schedules and managing inventory of medications and medical supplies, which helps predict patient conditions and the probability of illnesses. Robots equipped with artificial intelligence algorithms can also play a role in directing patients with mild cases to emergency rooms more efficiently, which enhances healthcare efficiency and reduces crowding.

Startups invest in modern artificial intelligence technologies to reimagine every step of patient care. For example, Enlitic developed an application to improve diagnostic accuracy, while Oncora Medical offers an artificial intelligence tool to help doctors develop treatment plans for cancer patients. Artificial intelligence technologies are also used in public health to focus on prevention and disease management.

III-5- Facial recognition technology to improve the perceived image of the service for the consumer – Example: Expedia Company –

We pointed out in the theoretical section of the article that it is extremely difficult to form a perception of the service in the consumer's mind because it is intangible, and the expected benefits from purchasing the service remain unclear, which causes hesitation in the purchase decision. To try to solve this issue, Expedia collaborated with the Hawaii Tourism Authority to create an interactive campaign known as *Discover Your Aloha*. The *Discover Your Aloha* microsite displays vivid images and video shots representing various possible activities in the Hawaiian Islands.

Using specialized facial recognition software, and with the user's consent, the platform identifies the content that elicits the most positive response and presents a discounted vacation package matching those details. According to Noah Tratt, Senior Vice President of Expedia Global, this integration of facial recognition aims to make the experience and perception of Hawaii as a travel destination more personal and inspiring to viewers. In a statement on Expedia's website, he emphasized the strategic use of innovation to achieve desired results rather than innovation for the sake of innovation (Bouziane, 2023).

III-6- Intelligent chatbots to solve the consumer's search problem – Example: Telkomsel Company –

The search process before purchasing the service is intensive. The customer searches for as much data and information as possible and seeks advice and guidance at different times of the day. The customer also looks for someone to reassure him about the quality of the service since he cannot judge its quality until after consuming it. The most interesting aspect of

chatbots is their effect on customer experience. Some companies may not have enough staff or hours in the day to respond to customer inquiries quickly, and in this case chatbots enable customers to help themselves.

A chatbot is a program capable of conducting conversations or chats using artificial intelligence to determine responses. Chatbots can conduct voice or text conversations, and the latter usually appears as a chat window on the user's computer screen.

For example, the Indonesian company Telkomsel used intelligent chat applications to handle customer inquiries while reducing human interaction, which enhances service efficiency. Artificial intelligence also facilitates handling financial transactions such as bill payments or product purchases (Daqa & Hanish, 2024). Chatbots have the ability to provide exceptional online experiences, strengthen positive customer perceptions, support word-of-mouth promotion, and create opportunities that lead to sales.

IV- Ethical Challenges of Artificial Intelligence in Service Marketing

Artificial intelligence (AI) has the ability to make marketing techniques more efficient. Despite the solutions it proposes to overcome problems associated with service marketing, the increasing use of AI in marketing has highlighted ethical issues that must be addressed to ensure that this technology is used responsibly and ethically. This is what can be pointed out in this section (Kumar & Suthar, 2024).

IV-1- The Issue of Discrimination and Bias (Discrimination and Bias)

There is a common misconception that machines and technological tools are more objective and less prone to bias than humans. Bias is considered a weakness of artificial intelligence,

as it directly affects the quality of services that rely on AI and user satisfaction (Du & Xie, 2021).

Historical data used to train AI systems may contain biases that reinforce preconceived judgments. If historical data includes biases against a certain race or gender, AI systems trained on such data may perpetuate those biases, resulting in unethical behavior and unfair treatment of individuals or specific groups (Kumar & Suthar, 2024).

There are several examples in the service sector that confirm this. Amazon abandoned its project to develop an AI-based recruitment tool due to its discrimination against female candidates. Also, a legislative AI program (COMPAS), used by judges in deciding whether to release a defendant before trial, showed significant bias against Black defendants (Du & Xie, 2021).

Emotion analysis algorithms often misinterpret facial expressions of people with disabilities because they are excluded from training datasets. Smart speech-recognition technologies also have difficulty processing the words of people with speech impairments, and so on (de Almeida, Carlos, Santos, & Farias, 2021).

IV-2- Violation of Customer Data Privacy

In the previous section of this study, we pointed out the important advantages associated with AI-based marketing practices by ensuring the use of predictive analytics in developing new marketing strategies that efficiently meet customer desires. However, this also raises ethical concerns related to privacy violations and the use of customer data. Privacy violations occur whenever personal information is collected or used without voluntary consent from the individual. Consumer privacy dimensions include information collection, unauthorized use of

information, and inappropriate access to information by third parties (Du & Xie, 2021).

Studies have indicated the presence of gaps in transparency within current procedures, and that most consumers are unaware of how AI systems collect and process their data, in addition to increased concern regarding privacy protection in AI-based marketing practices. The Cambridge Analytica scandal showed that without regulation, data can be misused for psychological profiling and influencing electoral votes. Facebook faced a major scandal when this consulting company used user data to manipulate voters. There is confirmation that most privacy policies were deliberately written to deter users from exercising their rights (Sameen, 2025).

On the other hand, cyber-attacks pose a serious threat to privacy by exploiting vulnerabilities in AI systems to seize sensitive customer data. These attacks may reveal individuals' financial details or lead to identity theft, and so on. For example, the marketing of AI-based health services could lead to misuse of individuals' health data for illegal activities, and could mislead individuals by distorting health information derived from medical records and devices, resulting in significant risk. Naturally, such violations reduce trust in AI-based marketing efforts, weakening customer confidence in online commerce systems (Alhitmi, Mardiah, Al-Sulaiti, & Abbas, 2024).

IV-3- Manipulation of Customer Behavior

Algorithms that rely on AI are used to analyze customer behavior and preferences to create marketing campaigns tailored to specific customers, which may increase the effectiveness of marketing efforts. This may lead to manipulation and exploitation of vulnerable customers, raising ethical concerns. AI-based advertising is intrusive, and AI recommendations contribute to

trapping consumers into purchasing products they had no intention of buying (Sameen, 2025). One of the key attraction factors behind the boom in AI technologies is the increasing acceptance and adoption by consumers of AI-based products. Evidence in the service sector may extend to self-driving vehicle services, digital assistant services, financial services, and healthcare (Du & Xie, 2021).

Since the line between persuasion and coercion may be thin, distinguishing between acceptable and unethical manipulation is difficult. Algorithmic predictions may lead to manipulation and exploitation of vulnerable consumers. AI algorithms can target individuals based on their psychological profiles and preferences, resulting in persuasive marketing efforts capable of influencing consumers to make purchases or act in ways that contradict their best interests (Kumar & Suthar, 2024).

IV-4- Ethical Issues at the Level of Societal Well-Being

The socio-technical perspective on the ethical importance of technology emphasizes the ethical implications of technology at the societal level. Among the implications of AI are the decline of social interaction and widespread unemployment. AI may have a dark side concerning social interaction. Unemployment resulting from replacing jobs with AI worsens over time. Studies have discussed the tensions between job creation and job displacement, efficiency, and skill decline. Concerns regarding future social relationships include loss of empathy and humanity, isolation, weak social bonds, and excessive emotional attachment to robots (Machado, Silva, & Neiva, 2025).

Human communication is important in the service sector. However, AI-based marketing deepens the gap in human communication. Automated chat programs lack the personal touch and empathy provided by human communication. Here, customers

may feel that their needs are not adequately met due to the absence of personal touch and empathy that human communication offers. Customers may also feel that their problems are not taken seriously if they interact with a computer, which leads to loss of trust and brand loyalty (Kumar & Suthar, 2024).

On the other hand, reports indicate that the AI revolution will have a significant impact on the job landscape, especially in service sectors such as finance and insurance. According to a McKinsey report (McKinsey, 2017), no less than 30% of the activities that make up jobs will be replaced through automation in 60% of professions by 2030 (Du & Xie, 2021).

V- Conclusion

Through this research paper, we attempted to highlight the role and importance of artificial intelligence in solving some of the marketing problems that characterize the service sector compared to the situation in the goods sector, and to identify the most important implications that accompanied the adoption of artificial intelligence solutions in service marketing. We have actually found that artificial intelligence has the ability to make marketing techniques more efficient. However, despite the solutions it proposes to overcome the problems associated with marketing services, the increasing use of it in marketing has shed light on ethical issues that must be addressed to ensure dealing with this technology responsibly and ethically.

V-1- Study Results:

After presenting a set of examples of international companies that adopted the philosophy of artificial intelligence in their marketing plans and strategies, we reached a set of results, the most important of which are as follows:

- Emotional artificial intelligence can contribute to solving the problem of low or lack of consumer trust in a service

that they have never consumed before, thanks to the use of certain psychology techniques that work to reduce human stress;

- Emotional artificial intelligence contributes to improving the marketing communications process, as it works on selecting the most effective promotional tools, choosing the best timing for launching advertisements, and selecting the target audience very carefully;
- Dynamic pricing is a very effective mechanism for solving the pricing problem for the organization; through it, flexible competitive prices can be offered that change and adapt to various market variables;
- Artificial intelligence algorithms accurately predict increases and decreases in demand, which facilitates managing supply and demand more efficiently;
- Chatbots enable solving the problem of lengthy searching for the consumer, as the interactivity and abundance of information provided by these bots 24/24 and 7/7 simplifies the consumer's journey and saves time significantly;
- Artificial intelligence enhances the image of the service in the consumer's mind, and provides an accurate representation of the service that will be offered to the consumer on site. For example, the Metaverse technology allows the consumer to get a precise view of the tourist location or hotel where they will stay;
- Bias is considered a weakness of artificial intelligence, as it directly affects the quality of services and user satisfaction, and thus the consumer's trust in the brand diminishes;

- Predictive analytics of artificial intelligence contribute to developing new marketing strategies that efficiently meet customer desires. However, this raises the issue of clear manipulation of customers, violation of privacy, and the use of customer data;
- Cyberattacks pose a serious threat to privacy by exploiting vulnerabilities in artificial intelligence systems to access sensitive customer data;
- Human communication is important in the service sector. However, AI-based marketing deepens the gap in human communication;
- Among the consequences of artificial intelligence are the decline in social interaction and the spread of widespread unemployment.

These facts present an urgent call for smart companies to engage in a social responsibility charter to build a creative future of responsible artificial intelligence. They also pave the way for the demand for artificial intelligence governance and the reinforcement of accountability measures. The commitment of AI-based technologies to ethical principles and sustainability ensures human well-being. Addressing these ethical issues enables companies to strengthen customer trust.

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