

Artificial Intelligence as a Strategic Tool in Digital Marketing: From Theory to Practical Models

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Abstract:

This study highlights the growing impact of artificial intelligence on digital marketing strategies, particularly in light of the rapid digital transformation and the shift in consumer behavior toward e-commerce. Adopting a mixed-methods approach, combining descriptive analysis with case study methodology, the research aims to explore contemporary applications of AI in the business sector, with a particular focus on its integration into marketing practices. It also seeks to identify the dynamic relationship between AI and digital marketing strategies, particularly in relation to personalization and user experience enhancement, while further aiming to present and analyze real-world case studies of organizations that have implemented AI in their marketing operations in order to assess the practical impact of these technologies.

The findings indicate that AI contributes significantly to marketing performance by increasing operational efficiency, improving customer targeting, and enhancing user experience. Based on these insights, the study proposes a set of recommendations for organizations aiming to integrate AI into their marketing practices. These include investing in technical infrastructure, developing human capital, addressing ethical and regulatory considerations, and establishing performance evaluation mechanisms, the study concludes that such measures are essential for sustaining competitive advantage in the rapidly evolving digital markets.

Keywords: Artificial Intelligence, Digital Marketing, Big Data, Machine Learning.

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I- Introduction

The rapid advancements in technology, particularly in artificial intelligence, have led to a profound transformation across various sectors, each with its distinct objectives and tools. This is especially evident in the field of digital marketing, which has become heavily reliant on analytical models, design frameworks, and the structuring of intelligent promotional strategies. Advanced algorithms are now employed to extract hidden patterns in consumer behavior and analyze vast amounts of big data in real-time. This integration is not limited to operational automation or efficiency enhancement, it extends beyond these to form a cognitive framework for making effective marketing decisions. These decisions are grounded in accurate insights derived from machine learning and statistical forecasting, thus enhancing the effectiveness and efficiency of promotional strategies. Thanks to AI technologies, these strategies now align harmoniously with the dynamic nature of markets on one hand and the complex ever-evolving nature of today's consumers on the other.

Digital marketing has progressed from a routine function centered on simply disseminating content online to an advanced, intelligent system driven by user interaction, the analysis of these interactions and the formulation of strategies aimed at optimizing marketing efforts. This evolution ensures that marketing strategies are closely aligned with consumer trends guided by data-driven decision-making and supported by sophisticated analytical techniques.

Based on the above, we will present the following problem statement:

❖ Research question: To what extent have artificial intelligence technologies influenced the development of digital marketing strategies?

To answer our research question, we chose the following plan: The first part is based on a literature review and theoretical framework of the study variables, presenting some previous studies. The second section is dedicated to the analytical study by analyzing the practices and experiences of global organizations that have applied AI in the field of digital marketing, namely: Starbucks, Amazon, Netflix. Finally, a portion of the discussion is presented, followed by the conclusion that outlines the key recommendations for organizations seeking to use artificial intelligence in digital marketing.

❖ Significance of the Study

This study derives its importance from the trend towards digital transformation across institutions in various sectors, and the importance of adopting artificial intelligence technologies in marketing strategies in particular. By highlighting the nature of the consumer at the present time and his great orientation to online purchasing. This study gains further significance by shedding light on the pivotal role of artificial intelligence in restructuring and shaping digital marketing concepts and strategies, shifting them from their traditional form to a more intelligent framework.

❖ Objectives of the Study: This research aimed to achieve the following objectives:

- Analyzing the historical roots of artificial intelligence and reviewing the key milestones in its development, leading to its application in business and marketing fields;
- Exploring contemporary applications of AI in the business sector with a particular focus on its integration into marketing practices;

- Identifying the interactive relationship between AI and digital marketing strategies, specifically in the development of personalization tools, behavioral forecasting, and enhancing the user experience;
- Presenting and analyzing real-world case studies of organizations that have adopted AI in their marketing practices to assess and understand the practical impact of these technologies;
- Evaluating the tangible effects of AI on marketing performance, including its influence on boosting organizational profits, improving audience targeting, and enhancing customer loyalty;
- Highlighting the challenges organizations face when integrating AI into marketing, whether they are technological, organizational, or ethical, and suggesting potential solutions to overcome these challenges.

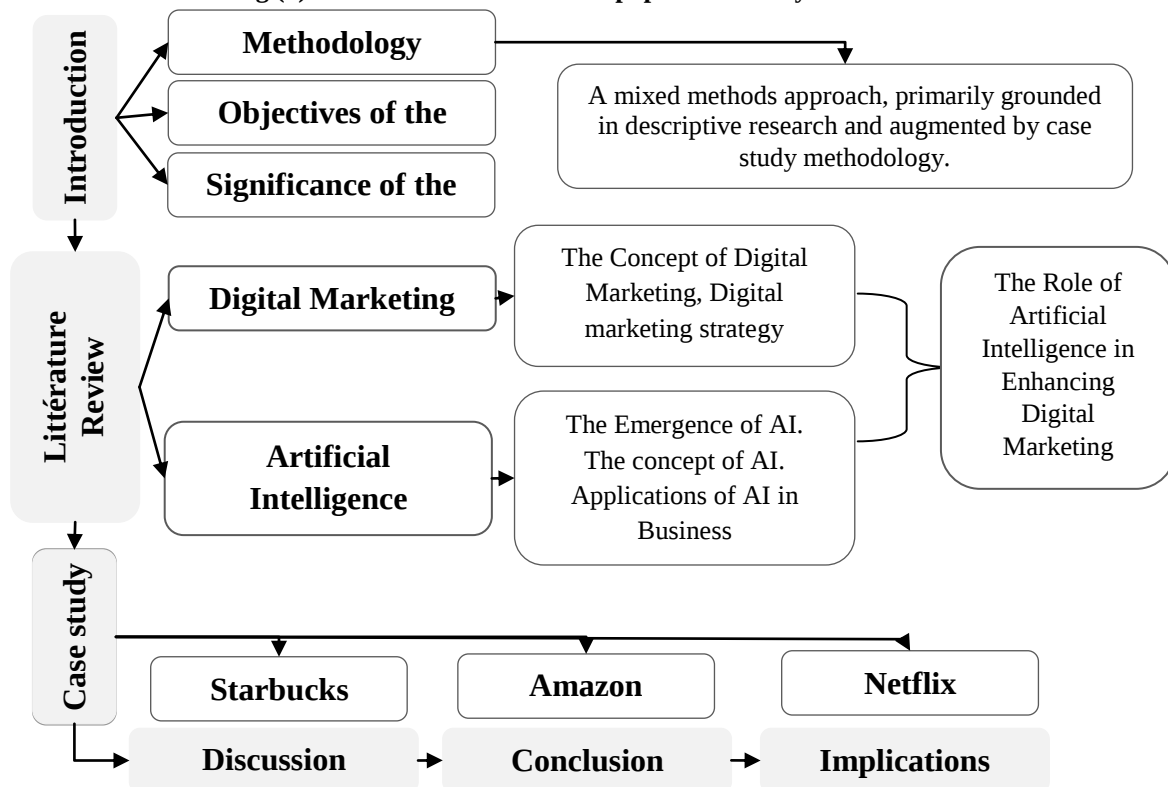
❖ **Research Methodology**

This paper employs a mixed-methods approach, primarily grounded in descriptive research and augmented by case study methodology, to comprehensively examine the integration of AI within digital marketing. The initial sections of the paper will utilize a descriptive research design to synthesize existing literature, providing foundational knowledge on the emergence, concepts, and applications of AI in business, alongside the principles of digital marketing and strategy. This descriptive analysis will incorporate relevant quantitative statistics regarding AI adoption in marketing from credible secondary sources.

Subsequently, the methodology transitions to a case study approach for the in-depth exploration of three selected organizations. These cases were chosen due to their advanced use of AI in marketing and their global influence, serving to illustrate concrete examples of AI implementation in marketing, examining the specific strategies, challenges, and observed outcomes. Critically, this research is entirely supported by secondary data, meticulously gathered from articles within reputable academic databases such as Scopus, ResearchGate, and Google Scholar. By integrating descriptive overviews with detailed organizational examples, this mixed-methods framework, relying solely on publicly available academic literature, aims to offer a holistic understanding of how AI enhances digital marketing, bridging theoretical concepts with real-world application.

The structure of the paper is as follows:

Fig (1): General Flowchart of the paper created by the authors



❖ Previous Studies

1. **(Saransh & Sunil Raj, 2024):** The paper looks at how AI can improve information proliferation, data management and algorithmic design in marketing. The authors analyzed how AI enhances brand-user interactions, enables real-time personalization and helps marketers deliver more customer-focused experiences. They conducted a comprehensive review of scholarly articles from diiferent platforms like Scopus, Google Scholar, and ResearchGate to explore AI's varied applications in marketing. The practical insights they have provided are useful for both researchers and marketing professionals who want to incorporate AI into their strategies.
2. **(Huan, Xiaonan, Guangze , Jiufan, & Yufu, 2024):** In this paper, the authors explained that machine learning (ML) has replaced traditional advertising methods that rely on intuition, providing marketers with powerful tools to uncover patterns, optimize recommendations and refine strategies. The emphasis is placed on the effectiveness of ML in improving user engagement and ad targeting accuracy, demonstrating its transformative impact on the advertising industry. Moreover, the paper emphasized the benefits of ML in real-time data analysis, predictive insights and intelligent content delivery.
3. **(Bram, 2025):** The researcher has focused in his paper on the three ways in which Gen-AI is expected to change the marketing field. First, Companies can automate the creation of advertising copy and images through generative AI, which could lead to significant cost savings. Secondly, it presents opportunities for improve and automate personalized marketing potentially enabling companies to send the right persuasive message at the right time to each potential customer. Lastly, generative AI has the potential to offer opportunities to market products to consumers. The

autor explained that although these developments may have potential advantages, they also present risks for consumers.

1. Theoretical Framework of Artificial Intelligence

1.1. The Emergence of Artificial Intelligence

Artificial Intelligence has become an integral part of everyday life, and many people now feel at ease with its wide-ranging uses and applications. Among the most ubiquitous AI interfaces is ChatGPT, which receives more than 67.7 million monthly users in the United States alone, from smartphones equipped with built-in software such as Apple Intelligence or Google Gemini to household assistants such as Amazon Alexa, AI is literally at our fingertips. Moreover, interest in AI is not confined to consumers, the business and scientific communities have embraced it enthusiastically, accelerating the pace of AI-driven innovation. For instance, Tesla has spearheaded the deployment of AI in the automotive industry through its Autopilot self-driving system inspiring companies like Comma.ai to develop aftermarket modules that endow non-Tesla vehicles with semi-autonomous capabilities. Tesla has even introduced an AI-powered humanoid robot capable of interacting autonomously with its surroundings and performing simple tasks. In the financial sector, an arena that has long relied on mathematics and quantitative analysis to capture narrow profit margins, researchers at the University of Chicago recently demonstrated that a large language model based AI system can outperform human analysts. (T.McSweeney, T.Werneburg, & P.Vasavada, 2025, p. 1).

Artificial intelligence (AI) systems undoubtedly provide great benefits especially as the world around us becomes increasingly complex it has become essential to leverage both human capabilities and advanced computational systems to address the challenges we face. This is particularly true for applications that require cognitive abilities. However, concerns persist regarding the possibility of machines acquiring a form of intelligence that may evoke fear among many individuals, most people believe that intelligence is a unique attribute that distinguishes humans from other living beings. Yet, if intelligence can be adapted to become a characteristic of machines, what then makes humans unique and what truly sets them apart from these highly intelligent systems?

The pursuit of creating an artificial version of the human being and the complex questions that arise from such an endeavor is not a recent development. The attempt to imitate and simulate human thought has been a goal for many thinkers throughout history. Since the sixteenth century stories and legends about artificial beings and mechanical machines have spread. One very interesting example is the chess-playing machine invented by Mälzel which along with other historical efforts, represented early attempts to replicate human intelligence or mimic essential human acts.

The idea of turning inanimate matter into intelligent living beings has always fascinated humanity, the ancient Greeks had myths about robots and engineers in both ancient China and Egypt built machines that could operate on their own. The beginning of contemporary artificial intelligence (AI) can be seen as an attempt to describe human thought as a symbolic system. However, the field was not formally established until 1956, when the first official conference on "Artificial Intelligence" was held in Hanover, New Hampshire, at Dartmouth College.

Among the attendees was Marvin Minsky, a cognitive scientist from the Massachusetts Institute of Technology (MIT), along with other scientists who were optimistic about the future of AI, in his book "*The Emotion Machine Commonsense Thinking, Artificial Intelligence, and the Future of the Human Mind*", M. Minsky wrote that "the problem of creating artificial intelligence will be substantially solved within a generation."

Alan Turing (1912–1954) was one of the most important figures in the field, in 1936 the british scientist introduced the theoretical possibility of a "universal computing machine what we now call the *Turing Machine*. Turing's main idea was that this machine could solve any problem that could be described through a set of steps (algorithmically). When applied to human intelligence, this implies that if mental processes could be broken down into a series of precise and orderd steps machines would be capable of performing them too. Several decades later, the first practical digital computers were developed, becoming the "physical tool of artificial intelligence." (Maad, 2015, pp. 1-2).

Additionally, in 1956, Herbert Simon and Allen Newell created the *Logic Theorist*, which many consider the first artificial intelligence software. It demonstrated the potential for computers to assist in complex decision-making tasks, paving the way for more advanced capabilities in problem-solving and strategic thinking that leads to decision-making.

1.2. The concept of Artificial Intelligence

Like other terminology, the emergence of the term "Artificial Intelligence" was not coincidental. According to (Mishra, Mishra, & Agarwal, 2024, p. 73), "AI" was first put forward in 1956 by John McCarthy, a mathematics professor at Dartmouth College, where he referred to it as "the science and engineering of creating intelligent machines" (Madanaguli, Sjodin, Parida, & Mikalef, 2024, p. 2). McCarthy also defined it as the scientific and technical knowledge required to develop intelligent computer programs specifically (مناصرة، 2024، صفحة 88).

Since then "AI" have been defined from different perspectives where (Kaplan & Haenlein, 2020, p. 40) described it as "The system's ability to correctly interpret external data, learn from that data and apply those lessons to achieve specific goals and tasks through flexible adaptation". AI has also been defined as "the set of theories and techniques implemented with a view to creating machines capable of simulating human intelligence" (Benmehdi & Chouali, 2024, p. 247).

Artificial Intelligence refers to the simulation of human intelligence in machines that are designed to think and act like humans, it can also be applied to any machine that shows traits associated with the human mind, such as learning and problem-solving. In the same context (أحمد، 2024، صفحة 252) believes that "AI" is a science that aims to develop computational systems that operate with high efficiency, similar to the competence of expert humans. In other words, "AI" is the ability of machines to imitate and replicate the physical and mental processes of humans including thinking, reasoning, responding, learning from previous experiences, and providing intelligent feedback. The ultimate goal of AI is to mirror the functions and acts of the human mind.

In 2024, most researchers and experts in the field of artificial intelligence focused on advancements in Generative AI (Gen AI); a technology that enables the creation of original content, such as text, images, videos, and other forms of media. To fully understand

Generative AI it is important to first comprehend the technologies upon which generative AI tools are built: Machine Learning (ML) and Deep Learning as illustrated in the following diagram: (stryker & Kavlakoglu, 2024)

Tab (1): Technologies upon which generative AI tools are built

1950's	Artificial intelligence (AI): Human intelligence exhibited by machines.		
	1980's	Machine learning: AI systems that learn from historical data.	
		2010's	Deep learning: Machine learning models that mimic human brain function.
		2020's	Generative AI (Gen AI): Deep learning models (foundation models) that create original content.

Source: (stryker & Kavlakoglu, 2024)

Generative Artificial Intelligence (Gen AI) is a form of ML trained on massive datasets encompassing a wide range of patterns; this enables it to produce original content in response to user inputs. Unlike traditional AI, which primarily classifies or predicts based on existing data, "Gen AI" creates new data such as text, images, and music showing its adaptability and creativity. One of the most prominent examples of generative AI is ChatGPT, a large language model built by OpenAI, which focuses in natural language processing and generating human like text. Other major models include Google's "Gemini" Meta's "LLaMA" and Anthropic's "Claude" (nikolic, et al., 2024, p. 58).

One of the most impactful and forward-looking approaches through which generative artificial intelligence can enhance the effectiveness of personalized marketing in the future is through the automated generation of advertisement texts at the individual level. In this approach, personalized ads can be created for each consumer based on their previous purchases and online behavior, which helps marketers predict their interests and personal preferences. In addition, generative AI can be used to create dynamic and personalized content that adapts in real time using data such as weather conditions, current events, or the user's real-time behavior (Bram, 2025, p 6).

The field has evolved significantly from its early days of generating simple text to the complex and sophisticated use cases we see today. This advancement is marked by continuous improvements in algorithms and techniques that enable the generation of novel and original content, despite being a relatively recent development, generative AI is already playing a transformative role in information management, content creation, and consumer engagement (K.Kanbach, Heiduk, Blueher, Schreiter, & Lahmann, 2024, p. 1194).

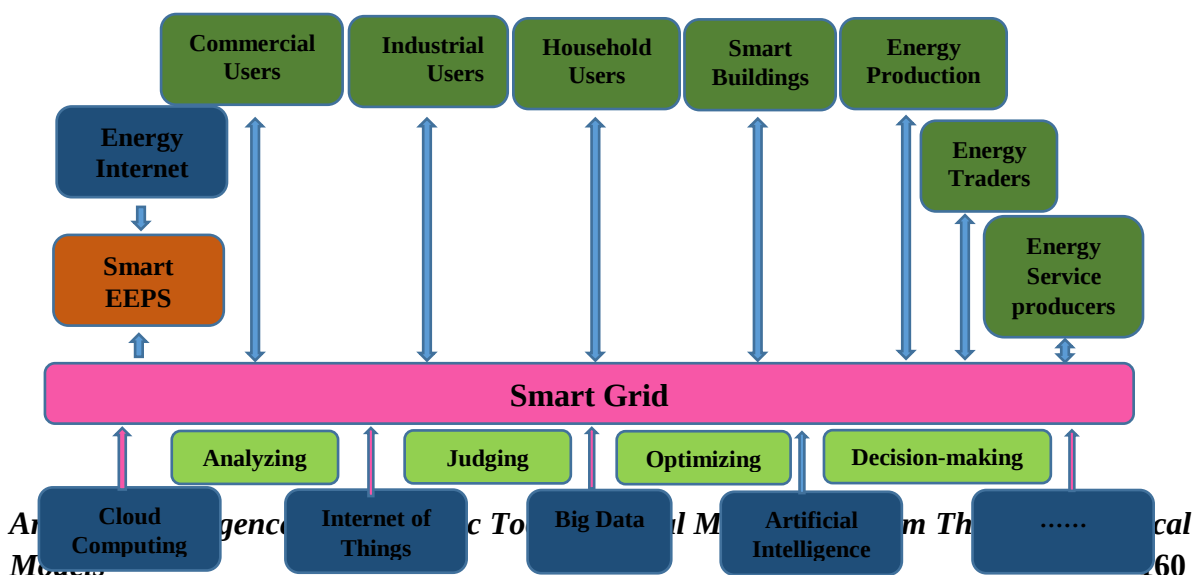
1.3. Applications of Artificial Intelligence in Business

According to (G. Sakthi, V.Santhosh, & S.Aravind , 2025, p. 1), "AI" plays a vital role in management by boosting sales, increasing profits, and fostering innovation. Through the utilization of data-driven insights, AI enables greater efficiency and promotes innovation across various sectors, so due to its transformative impact, organizations are continuously seeking innovative ways to enhance their performance by integrating (AI) and Machine Learning (ML).

Below is a summary of key business benefits associated with the application of AI (Praful Bharadiya, Kurien Thomas, & Farhan, 2023, pp. 88-97):

- ❖ **Machine Learning (ML):** ML technologies enable machines to learn patterns from data and improve their performance over time; ML algorithms facilitate data-driven decision-making, helping business leaders make informed and strategic decisions.
- ❖ **Cybersecurity:** AI systems can detect cyber attacks and other security threats by analyzing data trends and identifying the sources of potential risks, this proactive approach helps in preventing future security attacks.
- ❖ **Customer Management:** AI transforms Customer Relationship Management (CRM) systems into self-updating and auto-correcting platforms, it also boosts productivity through process automation, enhances service delivery consistency, supports decision-making with insights from customer data and helps identify new markets for current and potential products and services.
- ❖ **Customer Service enhancement:** Chatbots have helped companies to automate many customer service tasks, enabling human agents to focus on issues requiring a higher level of personal attention, these bots leverage a synergy of natural language processing, machine learning and AI to understand and respond to user wants. Moreover, customers can be easily transferred to human agents when needed ensuring efficient support and engagement.
- ❖ **Product Recommendation Systems:** Businesses can utilize AI to provide personalized product suggestions that meet customer needs and sustain their interest. AI can also recommend similar products based on users' browsing history and behavior on the company's website.
- ❖ **Energy Sector Support:** In the energy industry, AI is being used to enhance energy efficiency and lower operational costs in areas such as energy management, demand forecasting, and the integration of renewable energy sources. By analyzing infrastructure data, such as transmission lines and power plants, AI helps determine optimal maintenance schedules, enabling energy providers to perform repairs proactively, thus minimizing downtime and expenses. Furthermore, AI can optimize the electrical grid by analyzing supply and demand data and adjusting energy production accordingly. In buildings and facilities, AI can analyze energy consumption patterns to identify opportunities for efficiency improvements, such as optimizing lighting, heating, cooling and equipment use. It can even detect dishonest behavior such as meter tampering and billing errors.

Fig (2): Uses of Artificial Intelligence in Smart Energy Generation



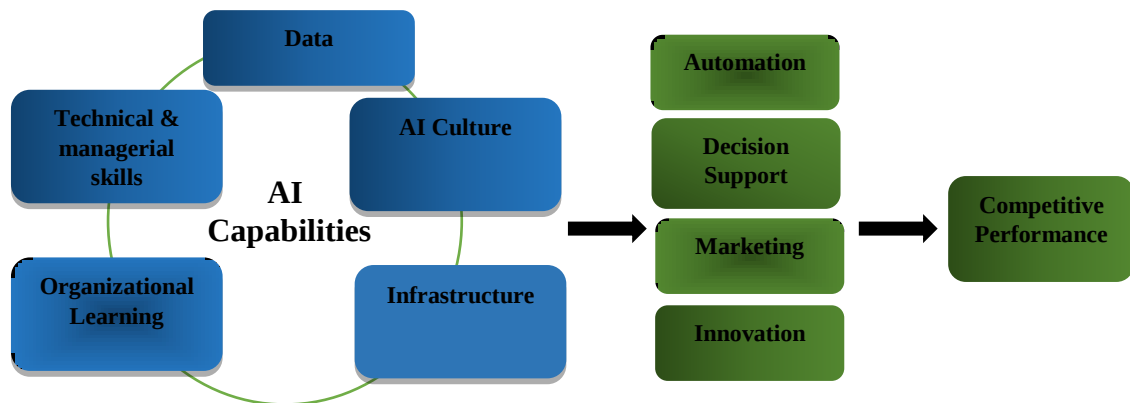
Source: (Praful Bharadiya, Kurien Thomas, & Farhan, 2023, p. 97)

In addition to the previously mentioned applications, AI technologies can further support organizations in the following ways (Chowdhury, 2024, p. 2137):

1. **Enhancing Decision-Making:** AI helps companies to make smarter, more precise, data-driven decisions by analyzing vast datasets in real time. This allows businesses to create strategic, well-informed decisions that contribute to overall business intelligence. As a result, organization's enhance their ability to adapt rapid market changes.
2. **Improving Operational Efficiency:** AI contributes to the automation of routine tasks, reducing errors and improving overall operational efficiency, automation allows businesses to streamline workflows, allocate resources more effectively and reach higher levels of productivity.
3. **Cost Reduction:** Automating repetitive tasks and optimizing processes leads to cost savings, AI applications enhance resource utilization and energy efficiency, resulting in smoother operations and a positive impact on the company's bottom line.
4. **Competitive Advantage:** Companies that effectively adopt AI gain a competitive edge by rapidly responding to market changes, driving innovation, and delivering high quality products and services, AI-driven insights offer a strategic advantage in today's constantly evolving business environment.

The following diagram illustrates a conceptual model of how AI creates business value through its various applications:

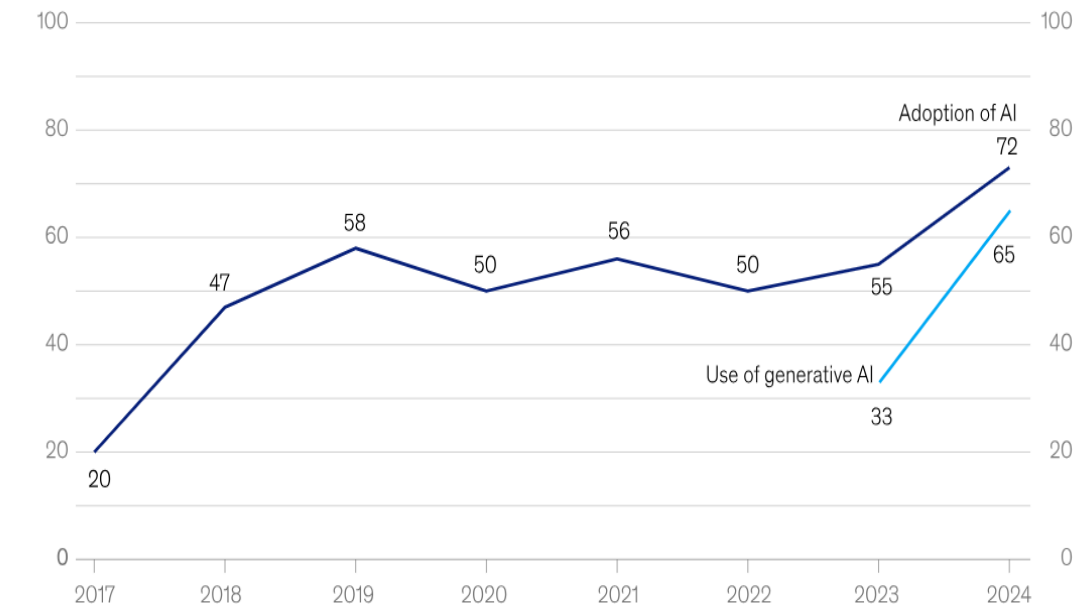
Fig (3): AI Capabilities and Competitive Performance Framework



Source: (Patrick, 2019, p. 413)

According to the latest global survey by McKinsey on artificial intelligence, 65% of respondents indicated that their organizations are now regularly using generative AI, almost double the proportion reported in the previous survey conducted just 10 months prior, expectations regarding the impact of generative AI remain high, with three-quarters of participants anticipating that it will lead to significant or transformational changes within their industries in the coming years, as illustrated in the following figure (singla, Sukharevsky, Yee, Chui, & Hall, 2024):

Fig (4): Organizations that have adopted AI in at least one business function



¹In 2017, the definition for AI adoption was using AI in a core part of the organization's business or at scale. In 2018 and 2019, the definition was embedding at least 1 AI capability in business processes or products. Since 2020, the definition has been that the organization has adopted AI in at least 1 function. Source: McKinsey Global Survey on AI, 1,363 participants at all levels of the organization, Feb 22–Mar 5, 2024

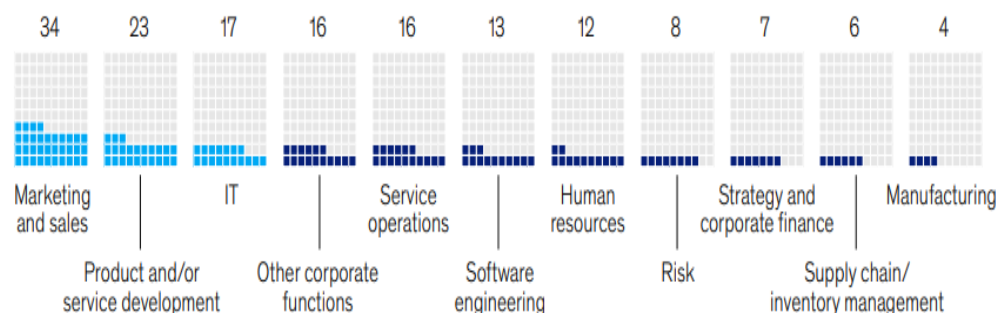
Source: (singla, Sukharevsky, Yee, Chui, & Hall, 2024, p. 2)

The majority of survey respondents reported that both their organizations and themselves are using generative AI, specifically, 65% stated that their organizations regularly employ generative AI in at least one business function, this marks a significant increase compared to just one-third of respondents in the previous year. On average, organizations using generative AI apply it across two functions, most commonly in marketing and sales as well as in product and service development areas previously identified in research as yielding the greatest value from generative AI adoption, it is also being employed in information technology functions.

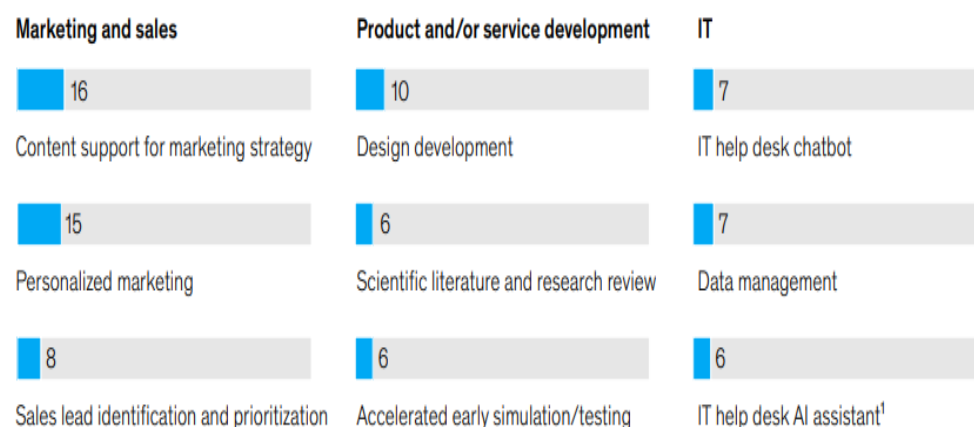
The most notable increase in adoption during 2023 occurred in the marketing and sales domains, where reported usage more than doubled. However, in other business functions 15% or more of respondents indicated that generative AI was used in only two areas both of which were marketing and sales, as illustrated in the following figure (singla, Sukharevsky, Yee, Chui, & Hall, 2024, p. 4):

Fig (5): Functions that rely most on Generative Artificial Intelligence (Gen AI)

Respondents' organizations regularly using generative AI (gen AI), by function, % of respondents



Most commonly reported gen AI use cases within function, % of respondents



¹Eg, providing real-time assistance and script suggestions to help desk employees during human-to-human conversations.
Source: McKinsey Global Survey on AI, 1,363 participants at all levels of the organization, Feb 22–Mar 5, 2024

McKinsey & Company

Source: (singla, Sukharevsky, Yee, Chui, & Hall, 2024, p. 4)

2. Theoretical Framework of Digital Marketing

2.1 The Concept of Digital Marketing

In today's highly competitive business environment, digital marketing is extremely important to the success, growth, and ultimate survival of companies. Some authors call it internet marketing, web marketing, or online marketing.

According to (Vaibhava, 2019, p. 196) digital marketing refers to all marketing efforts carried out through electronic devices or the internet, leveraging search engines, social media platforms, email and websites to engage with current and potential customers.

It is also described as the use of digital technologies to create integrated, targeted, and measurable communications that help an organization acquire and retain customers while building strong and lasting relationships with them (جعفر و جوامع، 2024، صفحة 422).

Digital marketing represents a paradigm shift from traditional marketing to a more technology driven marketing approach, focusing on interactive and interconnected experiences across digital channels. It is driven by the convergence of marketing and technology commonly known as "Mar-Tech" and continues to evolve in parallel with the

emergence of new technologies and platforms, as well as changing consumer behaviors (Cuijten, Wongpun, Buaprommee, Suwannahong, & Inmor, 2024, p. 1054).

Digital marketing is measured across six key indicators: digital television usage (X1.1), social media (X1.2), email (X1.3), mobile/wireless devices (X1.4), the internet (X1.5), and databases (X1.6) (Zaenal Asikin, Opan Fadilah, Eko Saputro, Aditia, & Maulana Ridzki, 2024, p. 966).

2.2. Digital Marketing Strategy

A Digital Marketing Strategy refers to the plans and approaches employed by companies or organizations to leverage digital media and internet technologies to promote their products, services, or brands, as well as to engage with consumers online. The primary objectives of a digital marketing strategy are to reach the target audience, enhance customer engagement, and drive profits. Below are some of the key components that typically constitute a digital marketing strategy (Joko Purnomo, 2023, p. 55), (Enshassi, Jeyakumar Nathan, Soekmawati, & Ismail, 2025, p. 3):

1. **Search Engine Optimization (SEO):** Efforts aimed at improving a company's website ranking and visibility in organic (non-paid) search engine results, it involves the use of relevant keywords, the creation of high-quality content and employing other strategies to increase the chances of appearing on the first page of search results;
2. **Content Marketing:** The creation and distribution of valuable content such as blog articles, videos, infographics and more with the goal of attracting audience interest and establishing brand credibility.
3. **Social Media Marketing:** Using social media platforms (such as Facebook, Instagram, Twitter, LinkedIn, etc) to engage with audiences, promote products or services, and build a community of followers.
4. **Influencer Marketing:** Collaborating with influencers or popular figures on social media to promote a brand or a specific product/service.
5. **Paid Advertising:** Using paid digital advertising on platforms such as Google Ads, Facebook Ads, or banner advertisements on other websites to boost visibility and attract clicks from the targeted audience.
6. **Data Analytics:** Collecting and analyzing data related to consumer behavior, online interactions and the performance of digital marketing campaigns to assess effectiveness and implement necessary improvements.
7. **Email Marketing:** Using email is a key way to talk to current and potential customers, this may include special offers, product updates and other forms of outreach. AI can make this type of communication much better by sending precisely targeted Emails, it meticulously analyzes customer behavior to deliver highly relevant promotions by displaying pertinent products.

Innovative marketing strategies in the digital age have become essential for businesses to remain competitive and adapt to market changes, research has highlighted the importance of using social media as an online advertising platform to build brand awareness and strengthen relationships with consumers both online and offline. The digital age also demands the use of internet services to develop businesses, and companies that fail to adapt to these developments often struggle to remain competitive. Additionally, research

highlights the significance of innovation strategies in improving business performance and gaining a competitive advantage in digital creative industries. Digital marketing strategies enable companies to adapt to changing times and remain competitive in the market by embracing digitalization. Through this adoption, businesses can use social media platforms as tools for online advertising, enhancing their marketing efforts. Moreover, digital marketing strategies provide practical guidance for businesses in utilizing digital technologies, such as e-commerce platforms to increase sales and enhance the competitiveness of their products (Nadeak, Rahayu, & Hendrayati, 2024, p. 5).

Designing an effective E-marketing strategy involves seven stages (Yuniarti, Muhammad Aziz, & Hamsu, 2024, pp. 6181-6182):

- **Analysis of the Current Situation:** This initial stage involves conducting a comprehensive analysis of the company's strengths, weaknesses, opportunities, and threats (SWOT analysis) to identify the various factors influencing the company's strategies, the aim of this analysis is to leverage strengths and opportunities in alignment with the company's mission, objectives, strategies, and policies. The SWOT analysis evaluates both internal factors (strengths and weaknesses) as well as external factors (opportunities and threats) within the business environment.
- **Market Opportunity Analysis:** This stage provides a systematic approach to assessing and analyzing market opportunities, it includes identifying unmet customer needs, determining target customer segments, evaluating competitive advantages, measuring the company's ability to deliver value propositions, assessing the market's readiness to adopt technology, identifying specific opportunities, and evaluating the attractiveness of these opportunities for customers.
- **E-Marketing Planning Strategies:** This phase involves key strategies such as segmentation, targeting, differentiation, and positioning, these strategies are crucial in defining the company's position in the digital market.
- **Objectives in E-Marketing:** Objectives in E-marketing are defined through tasks, measurable standards, and timeframes, these objectives may include a variety of goals such as increasing market share, enhancing user engagement (e.g., blog or website comments), boosting sales revenue, reducing costs (e.g., distribution or promotion costs), achieving brand-related goals, expanding customer databases, achieving customer relationship management goals (e.g., improving customer satisfaction, repeat purchases, or referral rates), and enhancing supply chain management.
- **E-Marketing Strategy:** This stage involves developing strategies related to the 4Ps of marketing (Product, Price, Place and Promotion) with an emphasis on relationship management to achieve the plan's objectives, this includes making informed decisions regarding the product or service offering, pricing strategies, distribution channels, and promotional efforts within the digital environment.

3. The Role of Artificial Intelligence in Enhancing Digital Marketing:

Artificial intelligence plays a key role in boosting the efficiency of digital marketing, significantly improving its performance through various methods. One of the primary ways AI help is by processing and analyzing the vast amounts of data collected from diverse sources such as social media platforms, websites, and customer interactions.

AI also enhances the customer experience by personalizing offers and marketing messages based on detailed analysis of customer preferences and past behaviors. Additionally, AI improves the targeting of advertising campaigns by identifying the most responsive segments, thereby increasing return on investment (ROI) and reducing marketing waste. Furthermore, AI can predict future trends and provide proactive recommendations based on real-time data analysis, enhancing the ability to adapt to rapid market changes, thanks to these capabilities, AI has become an indispensable tool for any organization aiming to achieve excellence and competitive advantage.

In addition to the above, the support for AI can be observed in the following ways:

✚ **Artificial Intelligence in Personalization and Customer Interaction:** One of the most prominent applications of artificial intelligence (AI) in digital marketing is its ability to personalize customer experiences. AI uses large datasets gathered from customers to predict future shopping behaviors, the advantage of these applications is their ability to provide tailored suggestions for each individual customer, something that cannot be achieved by traditional systems. Additionally, AI is used in-store marketing through interactive offers that shoppers can engage with, thanks to motion-sensing technologies powered by AI the use of AI has become feasible, as 64% of buyers are willing to share their informations and their purchase history with retailers, particularly for the purpose of personalizing and improving their experience making it more accurate and enhancing customer loyalty (Ram, et al., 2021, p. 3), AI continuously enhances marketing effectiveness and accuracy by targeting the right customers with the appropriate marketing strategy. Moreover, as customer behavior evolves, the AI system automatically re-segments customers based on the new changes in their needs and behaviors (Lachache, 2024, p. 169).

✚ **Predictive Analytics (PA) and Consumer Behavior:** Predictive analytics is another crucial application of AI in digital marketing, AI-powered machine learning algorithms and predictive models allow marketers to more accurately forecast consumer behavior, enabling companies to anticipate customer needs and wants and develop proactive marketing strategies, these predictive models use historical data and behavior patterns to make informed decisions regarding product recommendations, pricing strategies, and promotional campaigns. For instance, AI can predict the likelihood of a customer making a purchase based on past interactions, improving the efficiency of advertising spending. Furthermore, predictive analytics, combined with AI can enhance customer segmentation, sales forecasting, and customer retention efforts by identifying high-value customers and assessing the risk of churn. Among the key techniques used is the **Prediction Sequence** method, which aims to understand the customer's intent and whether they will decide to make a purchase or not, this method is based on dividing the data into time windows based on customer actions, such as the number of clicks made on a website, which are segmented as follows (Huan, Xiaonan, Guangze , Jiufan, & Yufu, 2024, pp. 216-217):

- **Before (X) T0:** This phase involves collecting data regarding the customer's behavior prior to a specific point in time (T0).

- **After (Y) T0:** In this phase, it is verified whether the customer performed the anticipated action, such as making a purchase.

This method relies on clickstream data, treating clicks as events expected to occur after a certain period, for example, data can be collected on the number of clicks made by a customer within a 6-hour window during the day, which can then be used to generate predictions regarding their purchasing decisions after that time period, by analyzing these sequences, organizations can gain a deeper understanding of customer behavior and generate highly accurate predictions about their future purchasing decisions. This enables them to develop strategic plans that efficiently and precisely support the achievement of their marketing goals.

According to Sonja Gensler & Arvind Rangaswamy, marketers need to understand the hundreds of daily activities consumers engage in to better grasp the sequence of these activities, such as eating breakfast, reading books, watching the news, taking the bus, or going for a walk. They also need to comprehend the needs and goals consumers aim to achieve; for example, maintaining a good health, psychological comfort, security.

Activities contributing to a specific goal form an interconnected sequence. However, consecutive activities don't necessarily belong to the same sequence, and the length and structure of these sequences vary from one consumer to another. Furthermore, the same activity might be part of multiple different sequences contributing to several goals (or sub-goals) for a single consumer.

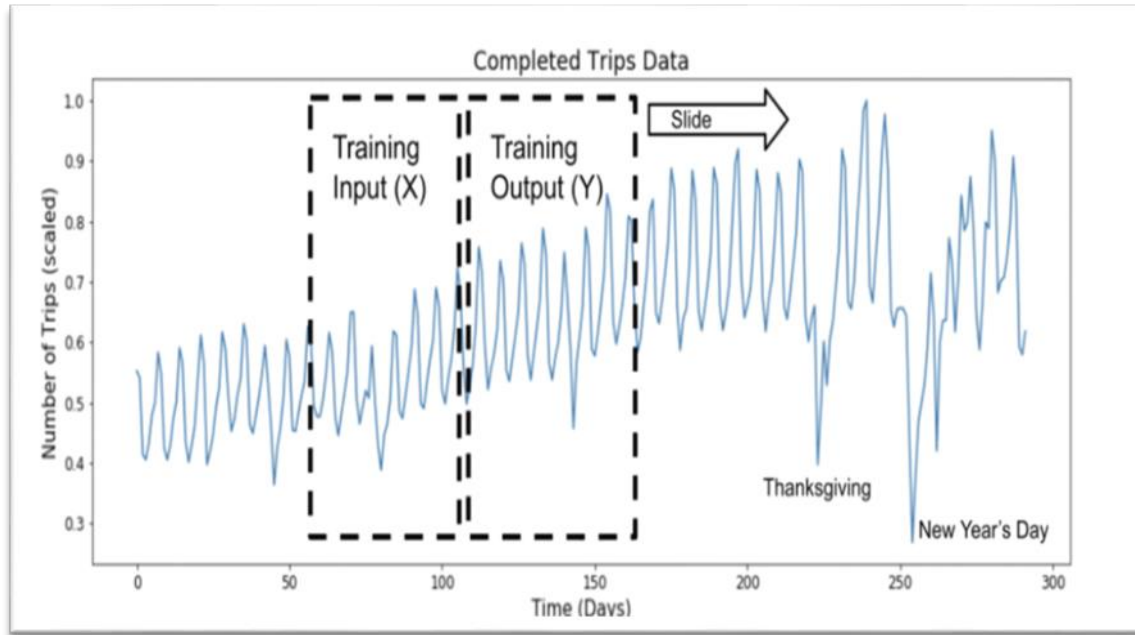
Currently, companies possess a good understanding of short sequences that address immediate needs and goals. For instance, going to a pharmacy to buy medicine for a headache constitutes a short sequence. From the consumer's perspective, the goal is to feel better, and the company that produces the medicine (as the solution provider) must ensure that this particular medicine is the first choice that comes to the consumer's mind when he experience a headache and seek relief.

The concept of the "customer journey" has been instrumental in understanding these short sequences, especially when a single product or service provides the solution.

However, marketers struggle to track complex and extended customer journeys (i.e., longer sequences) as consumers gradually make decisions across multiple channels and repeated interactions in order to achieve larger goals, making it a significant challenge to understand all relevant activities (Sonja & Arvind, 2025, p. 4)

Based on the above, AI technologies significantly enhance organization's agility in responding to immediate user needs and continuously improving products and services based on the users feedback. This capability not only boosts organizational innovation but also heightens user engagement and satisfaction (Yang, Siqiang, & Lu, 2025, p. 4)

Fig (6): Prediction Sequence Method



Source: (Huan, Xiaonan, Guangze , Jiufan, & Yufu, 2024, p. 2017)

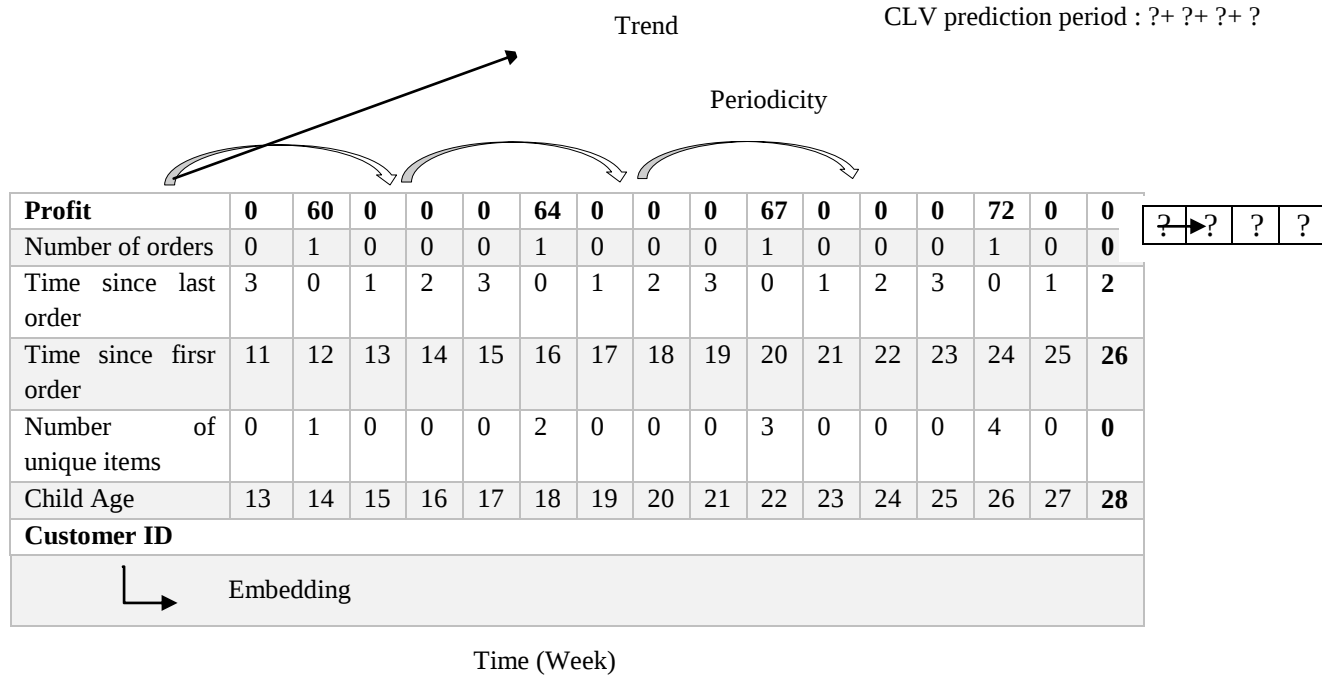
Researchers (Josef Bauer & Dietmar Jannach) developed an innovative learning approach that leverages customers' past behaviors using a *Recurrent Neural Network* (RNN) enhanced with time-based transformations and dynamic features, they further integrated this method with Gradient Boosting Machines (GBMs) to achieve more accurate predictions. The Sequence-to-Sequence (Seq2Seq) learning model aids in analyzing customer behavior based on their historical data, enabling companies to forecast each customer's "Customer Lifetime Value (CLV)".

The following example (Bauer & Dietmar, 2021, p. 6) illustrates the process of this model:

Table 2 presents the sequential features for a specific customer (Customer A) across several weeks based on the following variables:

- Profit ;
- Number of Orders ;
- Time Since Last Order ;
- Time Since First Order ;
- Number of Unique Items ;
- Child Age ;
- Customer ID.

Tab (2): Example for sequential features of customer A



Source : (Bauer & Dietmar, 2021, p. 7)

Explanation:

The values presented in the table illustrate how these features change over time, revealing identifiable patterns such as:

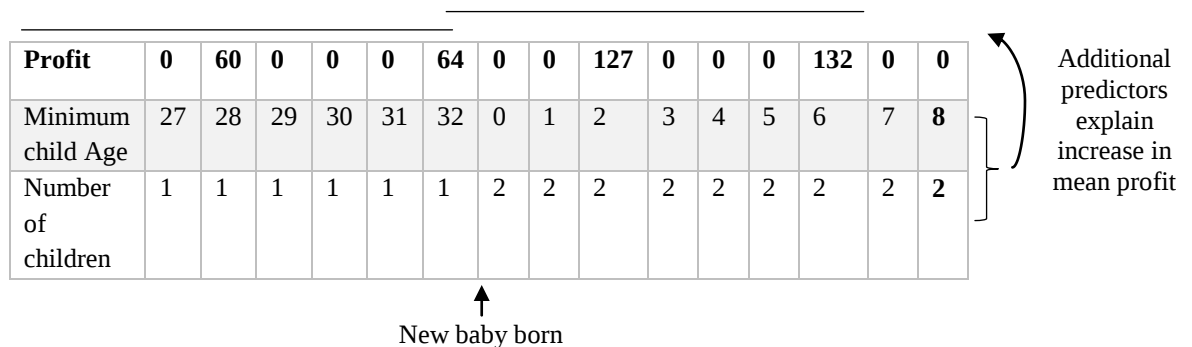
- **Trend:** Indicates how values evolve over time;
- **Periodicity:** Refers to recurring patterns, such as an increase in orders during specific periods.

All of this information contributes to predicting a customer's future value based on historical data.

Table 3 presents the data for another customer (Customer B), including some additional variables such as:

- Minimum Child Age
- Number of Children

Tab (3): Example for sequential features of customer B



Source : (Bauer & Dietmar, 2021, p. 7)

Explanation:

- A significant increase in profits is observed during a specific period.
- A likely reason for this increase is the birth of a new child, as indicated by the marker "New baby born" in the figure.
- Additional variables, such as child age and the number of children help explain this rise in profits, these variables are used in predictive models to more accurately analyze customer behavior.

Based on the above, the Sequence-to-Sequence (Seq2Seq) learning model supports digital marketing through the application of artificial intelligence by analyzing customers historical data and predicting their future behavior, It contributes to:

- Personalizing offers ;
- Enhancing ad targeting ;
- Predicting Customer churn ;
- Dynamically adjusting prices to maximize profits;
- Improving customer satisfaction through smart recommendations and personalized shopping experiences;
- This enables companies to optimize their marketing decisions, reduce costs, and increase sales.

4. Examples of Organizations Implementing Artificial Intelligence in Marketing**4.1. Starbucks**

Starbucks is one of the largest and most well-known coffeehouse chains in the world, leverages Artificial Intelligence (AI) and big data analytics to create highly personalized marketing campaigns, The company uses customer data collected from its vast network of retail stores and digital platforms to achieve this goal and it also aims to enhance the customer experience, increase sale and foster customer loyalty by collecting data from multiple interaction points, including (Saransh & Sunil Raj, 2024, p. 600):

- **In-store transactions:** Data from Point-of-Sale (POS) systems across thousands of locations;
- **Mobile app interactions:** Data from the Starbucks mobile app, including purchase history, preferences and interaction patterns;
- **Loyalty program:** Data from the Starbucks Rewards program which allows for detailed tracking of customer preferences and behavior.

4.2. Amazon

Serves as a prime example of a company that has successfully applied predictive analytics to grow its business by analyzing customers' purchase history, browsing behavior, and demographic information, Amazon delivers personalized product recommendations, which boosts sales and improves customer satisfaction.

Additionally, Amazon uses predictive analytics to optimize pricing strategies, forecast demand, and manage inventory, enabling the company to efficiently scale its operations and expand into new markets (Oloruntosin & Vincent Ugochukwu, 2024, p. 75).

To achieve this advanced level of analytics and data-driven decision-making, Amazon relies on a robust infrastructure capable of processing massive volumes of data in real time, this is where Amazon Web Services (AWS) plays a crucial role, offering a wide range of managed services that facilitate the rapid and secure development of

comprehensive data applications whether these involve real-time data streams or batch processing. AWS provides the necessary tools and infrastructure to collect, store and analyze big data, helping companies including Amazon itself to optimize operations and to make smarter data-driven decisions. And these tools include the following (Bouakel & Zerbout, 2021, pp. 212-213):

- **Amazon Kinesis:** A data streaming platform from AWS that facilitates the ingestion and analysis of real-time data streams, it allows organizations to build custom streaming applications tailored to their specific needs, Kinesis enables real-time processing of data from sources such as application logs, website clicks, and IoT devices, which can then be stored in databases, data lakes, or warehouses, or used to power real-time applications. The use of streaming data supports real-time dashboards, alerts, and dynamic pricing and advertising strategies.
- **AWS Lambda:** A server less computing service that allows code to run without the need to provision or manage servers. Organizations are only billed for the compute time consumed. Code can be triggered automatically by other AWS services or accessed directly from any web or mobile application.
- **Amazon EMR (Elastic MapReduce):** An advanced distributed computing framework designed for fast, efficient, and cost-effective data processing and storage, built on Apache Hadoop, an open-source framework, EMR distributes and processes data across customizable clusters of servers, it provides a powerful environment for processing massive datasets while Amazon EMR manages the required infrastructure and software, eliminating reliance on a single powerful server and enabling scalable, high-performance data operations.
- **AWS Glue:** A fully managed cloud service used to extract, transform, and load (ETL) data from various sources to their target destinations, it facilitates the cataloging, organization, cleaning, and enrichment of data for efficient analysis and it significantly reduces the cost, complexity, and time needed to build ETL processes manually, streamlining and automating data flow across multiple data repositories without the need for manual infrastructure management.

Amazon relies on a massive customer database and uses this data to build strong relationships with its customers, by analyzing and summarizing valuable customer insights, the company develops its promotional strategies and improves its products. Additionally, Amazon integrates the concept of data mining from the supply chain into its marketing operations, the company employs Data Mining (DM) in various ways to market its products aiming to achieve a competitive advantage.

In today's digital landscape, customers increasingly expect personalized offers and services from the brands they engage with especially as social media becomes more integrated into marketing strategies, and one of the key opportunities Amazon is working to enhance involves delivering targeted information to customer service representatives during customer interactions. These representatives have access to a customer's complete data profile, allowing them to analyze and address the issue immediately upon receiving the call, this approach gives customers a sense of being valued and ensures services align closely with their individual needs.

Smart retailers like Amazon stand out by effectively utilizing data collected from a variety of sources, leveraging it in ways that generate added value for the company and give customers more control over their shopping experience. Notably, Amazon was recently awarded a patent for a system designed to ship products to customers before they even decide to purchase them, a concept known as predictive sending. This innovation reflects the company's growing confidence in the reliability of its predictive data analytics (Bouakel & Zerbout, 2021, pp. 215-216).

Amazon is known as one of the largest e-commerce platforms globally, and one of the core technologies behind its success is the Amazon personalized recommendation system, this system is considered an industry-leading model, primarily due to its foundation in Artificial Intelligence (AI) and its use of big data analytics and machine learning techniques.

The system constructs a user profile by analyzing various forms of data, including purchase history, browsing history and search behavior, this enables the delivery of highly personalized and targeted recommendations to each user, whether in promotional offers or platform-displayed advertisements. It also relies on advanced machine learning algorithms that extract, study, and deeply analyze vast amounts of user data to understand diverse customer preferences and behaviors. Providing broad recommendations including the following:

- Related products;
- Products from the same brand;
- Items similar to what the user is currently searching for.

Moreover, the system doesn't limit itself to historical data but also leverages AI capabilities to analyze real-time behavior and contextual information, For instance, when a user browses a particular product, the system instantly suggests other potentially interesting products based on that product's features and the user's past behavior.

By integrating AI-driven big data analytics, Amazon ensures the accuracy and efficiency of its recommendations, contributing to a shopping experience that meets user expectations, the use of machine learning algorithms also enhances the speed and effectiveness of recommendations, leading to increased customer satisfaction and improved loyalty (Ruichen, 2024, p. 372).

4.3. Netflix

Netflix makes extensive use of Artificial Intelligence to enhance its marketing activities illustrating the transformative impact of this technology in the digital streaming industry. One of the core factors contributing to the platform's success is its personalized recommendation system, which relies on advanced AI algorithms to analyze viewing data and predict user preferences by understanding viewing patterns, ratings and user interactions, Netflix delivers a tailored viewing experience for each individual.

To achieve this level of personalization, Netflix employs advanced machine learning techniques, including the following methods (Sevaslidou, Prassa, & Papaioannou, 2024, p. 2):

- **Collaborative Filtering:** This approach analyzes similarities between users, recommending content that individuals with similar viewing habits have enjoyed.

- **Content-Based Filtering:** This method focuses on the characteristics of content the user previously enjoyed such as genre, actors, and directors to suggest similar titles.

Netflix also leverages AI-driven analytics to launch targeted marketing campaigns aligned with the interests of different audience segments, it utilizes AI to predict user churn identifying users at risk of cancelling their subscriptions and proactively works to retain them through personalized content suggestions and exclusive promotional offers.

5. Discussion

The findings of the study revealed multiple dimensions at the intersection of artificial intelligence and digital marketing. The marketing field has undergone a significant change in recent years, with organizations increasingly relying on artificial intelligence technologies, these tools have been shown to be capable of uncovering deep and hidden patterns in consumer behavior, which are often imperceptible to humans and would take significant time and effort to detect manually.

The study further demonstrated that AI through tools such as predictive analytics, machine learning algorithms and demand forecasting systems has enabled organizations to implement precise consumer segmentation by dividing customers into highly specific segments, Predicting the segments to which a consumer currently belongs or is likely to belong in the future is now possible for companies, This skill has enabled them to develop and execute marketing strategies that are highly efficient.

Moreover, the study indicated that AI has substantially enhanced user experience by enabling personalized promotional offers, intelligent recommendations and customized shopping experiences. These advancements have empowered companies to improve marketing decision-making, reduce costs and increase sales. This was exemplified by Starbucks, which managed to launch highly personalized marketing campaigns based on big data analysis. Similarly, Amazon expanded its operations and boosted its profits through the use of predictive analytics and the development of Amazon's personalized recommendation system a leading AI-driven system in the industry. Finally, Netflix has demonstrated the efficiency of advanced machine learning techniques by analyzing user interactions on its platform to provide a personalized viewing experience for every individual user.

6. Conclusion

In conclusion, Artificial Intelligence has emerged as a fundamental and transformative force that enhances an organization's ability to achieve a competitive edge in the market, through its integration across various business functions, AI has significantly improved decision-making processes, increased operational efficiency, reduced costs and bolstered institutional competitiveness.

Statistics have highlighted the importance of this shift showing that many organizations that have adopted AI technologies have experienced substantial performance improvements. In the field of digital marketing, generative AI has proven to be particularly impactful in shaping effective strategies, enabling marketers to personalize campaigns with greater precision and relevance.

Looking ahead, it is clear that AI will continue to be a cornerstone in the evolution of digital marketing, necessitating strategic investment from organizations in AI technologies and talent development. Keeping pace with rapid technological advancements will require

companies to harness the immense potential of AI, thereby improving their marketing strategies, expanding their market reach and achieving measurable outcomes that support both sustainability and long-term success in global markets.

7. Practical implications:

Based on the above, this paper presents the following recommendations and suggestions for companies seeking to adopt artificial intelligence in the field of digital marketing:

- ❖ It is essential for companies to adopt a flexible and scalable computing infrastructure that enables the handling of big data volumes and supports the seamless and efficient integration of artificial intelligence platforms;
- ❖ It is essential for companies seeking to adopt artificial intelligence to provide the necessary tools for early detection and prevention in order to ensure data protection and business continuity;
- ❖ It is essential for companies to adopt continuous training and development programs for technical and marketing teams to enhance their abilities to use artificial intelligence tools and technologies in accordance with best practices and global standards;
- ❖ It is essential for companies seeking to adopt artificial intelligence to engage in technical communities and attend specialized conferences both national and international, and workshops to exchange knowledge and stay updated on the latest trends and innovations in the field;
- ❖ It is essential for companies seeking to adopt artificial intelligence to learn from the experiences of leading global companies in personalizing the user experience through AI technologies and utilizing advanced data analytics to build effective and targeted marketing strategies.

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