Chapter 15

Artificial Intelligence Marketing (AIM): Digital Transformation and Consumer Behaviour

Ahmet Songur[1]

Abstract

Artificial intelligence (AI) is important in analyzing consumer behavior and creating marketing strategies based on this behavior. AI facilitates the analysis of large amounts of data, providing deep insights into consumer preferences. In this way, companies can increase customer satisfaction by offering personalized experiences that align with consumer expectations. Through machine learning and data analytics, consumer behavior can be better understood, increasing the effectiveness of marketing campaigns. AIM's ability to analyze data such as social media interactions, purchase history, and online behavior makes it possible to predict consumers' future buying tendencies. This enables marketers to target and quickly adapt to consumer behavior accurately. In addition, the personalization capabilities offered by AIM increase brand loyalty and strengthen purchase intent by providing consumers with personalized experiences. These benefits of AIM in understanding consumer behavior allow marketers to develop more effective and targeted strategies. The ability of technology to optimize marketing processes by responding to customer needs in real time allows brands to gain a competitive advantage. AIM has great potential to predict consumer behavior and create personalized marketing campaigns more accurately.

1. Introduction

The impact of artificial intelligence (AI) is becoming increasingly widespread, radically changing global marketing dynamics (Jain & Aggarwal, 2020). This technology, which transforms how businesses operate, holds significant potential for innovation in marketing. Identifying the most suitable AI solutions for marketing processes is a critical focus for practitioners. AI is expected to become an organization's key business

1 Doktor Öğretim Üyesi, Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi İşletme Bölümü, ahmetsongur@sdu.edu.tr, Orcid No: 0000-0002-9869-5394

https://doi.org/10.58830/ozgur.pub710.c3032

partner in the long term. AI applications have already become a core element of global marketing teams. In interviews with 100 senior marketers across various industries, it was found that 55 percent of companies are either using or actively researching AI-based marketing applications (Smartinsights, 2018). This finding underscores the transformational impact of AI on the marketing industry.

Artificial Intelligence Marketing (AIM) refers to the effective application of technology to enhance the customer experience. Artificial intelligence facilitates big data analysis, enabling personalized sales strategies and better alignment with customer expectations. Additionally, AIM has the potential to improve the performance and return on investment (ROI) of marketing campaigns by providing rapid and in-depth customer insights (Jain & Aggarwal, 2020).

In the marketing landscape, big data analytics and artificial intelligence applications are becoming increasingly crucial. By leveraging machine learning technologies, marketers analyze the relationships between data points to gain deep insights into customer behavior and enhance operational efficiency. These systems can detect emotions by analyzing speech, visualize social media trends, and make various predictions through data processing (Thiraviyam, 2018).

AI holds significant potential in the field of marketing, fundamentally transforming the interaction between brands and consumers. The application of AI varies based on the type of business and the characteristics of the website. The data generated by AI allows for the rapid and effective identification of content and channel preferences within the target audience, enabling marketers to meet customer needs in real time. Furthermore, the personalization capabilities offered by AI provide a sustainable competitive advantage by analyzing the performance of competing businesses while enhancing consumers' purchasing tendencies (Haleem et al., 2022).

New technologies offer a competitive advantage to businesses by making their product and service offerings more accessible to customers (Rouhani et al., 2016). A customer-centered approach that focuses on addressing customer needs on a global scale is essential for organizational growth (Vetterli et al., 2016). AI plays a significant role, particularly in digital marketing. Through tools such as chatbots, intelligent email marketing, interactive web design, and other digital marketing technologies, AI helps guide users in alignment with business objectives, providing a more personalized experience. These technologies optimize customer interactions, making marketing strategies more effective for businesses.

With the advancement of AI, artificial intelligence applications in marketing have become increasingly important for enhancing customer satisfaction, expanding market share, and boosting profitability. In this context, key questions arise regarding how AI technologies can be most effectively integrated into marketing strategies and what future research directions will emerge. Artificial intelligence offers marketers significant opportunities by providing advantages such as the ability to analyze customer behavior, deliver personalized experiences, and accelerate decision-making processes. Future research will focus on exploring more in-depth applications of AI, examining its impact on marketing strategies, and investigating ways to integrate these technologies more sustainably and ethically (Wisetsri et al., 2021).

2. Artificial Intelligence (AI) Concept

In artificial intelligence (AI), the term 'artificial' refers to the capacity of machines to function independently of human intervention, while the concept of 'intelligence' is more nuanced and complex (Wirth, 2018). Alan Turing addressed this issue in his 1950 paper, *Computing Machinery and Intelligence*, which preceded John McCarthy's Dartmouth Artificial Intelligence Research Project in 1956. In his discussion of the question "Can machines think?", Turing emphasized the need to first define the concepts of 'machine' and 'thinking' (Turing, 1950). The Turing test is designed to assess the intelligence of computers and determine whether a machine can achieve human-level performance across all cognitive tasks (Thiraviyam, 2018). In 1959, Cahit Arf addressed the issue in his Public Conference Declaration at Atatürk University in Erzurum under the title 'Can a machine think and how can it think? (Arf, 1959).

Artificial intelligence, from an idealized perspective, can be seen as an artificial operating system that demonstrates the higher cognitive functions or autonomous behaviors typically associated with human intelligence. This system should be capable of perceiving, learning, linking multiple concepts, thinking, reasoning, problem-solving, communicating, and making decisions. Additionally, such an AI system should be able to generate responses based on its reasoning (agentive artificial intelligence) and physically express these reactions (Wikipedia, 2025).

Wirth (2018) defines AI in three distinct categories: narrow AI, hybrid AI, and strong AI. Narrow AI, also known as weak AI, refers to systems optimized for specific tasks, with limited flexibility and an inability to adapt to different domains. Despite this limitation, the development of narrow

AI systems is highly complex. While these systems lack the broad cognitive capabilities of human intelligence, they can excel in their areas of expertise and even surpass humans in some cases. Notable examples include AlphaGo and DeepBlue. The majority of AI systems in use today fall under the narrow AI category, such as Siri, Google Assistant, and Alexa. Narrow AI is widely applied across industries like healthcare, defense, and marketing. The terms strong AI, full AI, and general artificial intelligence are used interchangeably to describe systems that possess the same level of power and flexibility as human intelligence. Unlike narrow AI, strong AI is not designed for specific tasks but aims to replicate human cognitive capabilities. However, strong AI has not yet been realized (Greenwald, 2011). The development of narrow AI has highlighted the need for more precise terminology. Emerging solutions that integrate multiple narrow AI systems to address a broader range of tasks are referred to as hybrid AI. This field is rapidly expanding, though these systems still do not qualify as strong AI (Martínez de Pisón et al., 2017).

In today's rapidly evolving digital landscape, data-driven strategies are becoming increasingly vital in marketing. In this context, technologies such as Big Data and Machine Learning are transforming marketing practices. Big Data refers to the process of collecting extensive data on customers' buying behaviors and trends. It also involves the ability of marketers to effectively combine and analyze large data sets. This data is leveraged in marketing strategies to ensure that the right message reaches the right person at the right time and through the appropriate channel. Machine Learning, on the other hand, enables the creation and application of models based on identified patterns. This technology provides the opportunity to uncover trends, analyze insights, and predict behaviors by extracting valuable information from large data sets. As a result, marketers can optimize their strategic decisions by better assessing the likelihood of certain actions being repeated and understanding the key factors influencing these processes (Jain & Aggarwal, 2020).

In the realm of artificial intelligence and machine learning, few topics are as intriguing as generative models. These models stand out for their ability to generate new data that closely resembles real-world examples. Generative models tackle one of the most complex challenges in AI: creating new data that is indistinguishable from authentic data. They can generate realistic images, music, or text without human intervention. Among these models, Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs) are particularly notable architectures. Generative Adversarial Networks (GANs), developed by Ian Goodfellow and his team in 2014, consist of two opposing neural networks: the Generator and the

Discriminator (Goodfellow, 2014). The Generator creates realistic data samples starting from random noise, while the Discriminator analyzes the generated data and attempts to distinguish between real and fake samples. These two networks continuously challenge each other— as the Generator produces more convincing fake data, the Discriminator becomes increasingly adept at detecting it. This adversarial process enables the Generator to create samples so realistic that they are almost indistinguishable from real data (Alqahtani et al., 2021). Variational Autoencoders (VAEs) enhance the dimensionality reduction and feature learning capabilities of traditional Autoencoders by introducing a probabilistic framework for generative modeling. In this model, the Encoder maps the input data into a low-dimensional latent space, creating a probabilistic representation, while the Decoder reconstructs the original data by sampling from this latent space (Wei et al., 2020). The key feature of VAEs is that they treat the latent space as a probability distribution, allowing for more flexible and controlled data generation. This probabilistic approach provides a statistical structure that enables the model to generate new data samples. Generative models have found widespread applications across various fields, including art production, anomaly detection, drug discovery, super-resolution image processing, and data transfer (Sruthy, 2023).

3. AIM and Consumer Behavior

AI is a technology that enables businesses to monitor real-time data, allowing them to quickly analyze and respond to customer needs (Wirth, 2018). Marketers can use AI to assess consumer behavior, identify patterns, predict future outcomes, and adjust advertising strategies accordingly. AI offers significant advantages for marketers, particularly in forecasting consumer behavior and enhancing customer satisfaction. As consumer preferences evolve, brands are increasingly investing in AI-powered solutions to maintain a competitive edge. AI tools are being effectively applied in areas such as web metrics analysis, optimization of reach, and conversion strategies. AI branches, including machine learning, natural language processing, expert systems, robotics, and data analytics, help marketers classify customer needs, personalize demand, and improve sales forecasts. AI-powered 'intelligent' systems are designed to boost customer loyalty and sales performance while reducing uncertainties in decision-making processes (Gkikas & Theodoridis, 2022).

Traditionally, forecasting consumer behavior relied on statistical techniques and rule-based systems. While these methods can be useful to some extent, contemporary consumer markets are increasingly analyzed

using generative artificial intelligence (AI) methods, which have significantly enhanced the accuracy and depth of consumer behavior predictions. By utilizing large datasets and complex machine learning algorithms, these models can uncover hidden trends and relationships that traditional methods often overlook. For example, Generative Adversarial Networks (GANs) create realistic customer profiles based on existing data, enabling marketers to simulate how new products or services will be perceived by different populations (Prosvetov, 2019). Similarly, Variational Autoencoders (VAEs) analyze the latent variables behind consumer preferences, providing a more comprehensive understanding of individual choices and how these decisions are influenced by external factors (Higgins et al., 2017).

The increasing availability of consumer data and artificial intelligence (AI) systems developed for large-scale processing of this data has accelerated data-driven decision-making processes in marketing. Generative AI models provide an effective tool to improve traditional consumer behavior models by offering more accurate and complex insights. Transformative models in particular have shown great success in recommender systems. For example, they are notable for their ability to accurately predict future behavior and preferences by analyzing customer contact data (Yenduri et al., 2024; Gupta et al., 2024; Yoon & Jang, 2023).

The use of generative artificial intelligence (AI) in marketing has created new opportunities and influenced consumer behavior. These technologies enable companies to create customized marketing plans, evaluate big customer data more effectively, and gain new insights. Personalized marketing, in particular, is an important area where generative AI is having an impact. While traditional methods rely on rule-based algorithms that group users into groups, generative AI can create unique customer profiles and detect small trends by analyzing behavioral data. By modeling how consumers react to marketing stimuli, GANs enable companies to deliver more accurately personalized messages. This level of personalization can increase consumer engagement and loyalty (Gavilanes et al., 2018; Harmeling et al., 2017). Furthermore, transducers can be used to predict consumer behavior. For example, in e-commerce, a model can provide timely and relevant product recommendations by predicting a consumer's future purchases. Generative AI models are also effective in sentiment analysis and recognition and play an important role in understanding factors such as customer satisfaction and dissatisfaction. This information can be used to improve customer service and build stronger consumer relationships (Higgins, et. al., 2017).

Madanchian (2024) examines the impact of AI models on consumer behavior prediction, marketing, and customer engagement. By systematically analyzing 31 studies across areas such as e-commerce, energy data modeling, and public health, he identifies the contributions of these models to personalized marketing, inventory management, and customer retention. The study highlights the ability of transformative models to process complex data, as well as the advantages of certain AI models (e.g., GAN and VAE) in predicting customer behavior. Additionally, challenges related to data privacy, computing resources, and the application of these models in real-world scenarios are discussed.

4. Use of Artificial Intelligence in Marketing

The primary applications of AI in marketing encompass key marketing mix elements, including strategy and planning, product development, pricing, distribution, and promotion. The use of AI-based systems in these areas is strategically significant (Han et al., 2021).

Figure 1. Several Segments for AI Applications in the Marketing Domain

Source: Haleem et al., 2022: p. 121.

4.1. Strategy and Planning

AI can assist marketers in determining the strategic direction of a company (Huang & Rust, 2017). Additionally, AI supports marketers in segmentation, targeting, and positioning, enabling them to develop effective marketing strategies and plan their activities. AI applications are particularly useful in identifying profitable customer segments across various industries, especially in retail. By combining data optimization techniques, machine learning, and causal forests, marketers can refine customer targeting (Chen et al., 2020; Dekimpe, 2020; Pitt et al., 2020). These capabilities help marketers create more effective and efficient planning strategies.

Huang and Rust (2021) developed a three-stage framework for strategic marketing planning that incorporates the advantages of artificial intelligence (AI). This framework describes different types of AI used to optimize marketing processes: Mechanical AI is used to automate repetitive marketing functions and activities; Thinking AI is used to process data to make decisions; and Feeling AI is used to analyze interactions and human emotions. This three-stage framework illustrates how AI can be used for marketing research, strategy (segmentation, targeting, positioning), and actions. In the marketing research phase, mechanical AI can be used to collect data, thinking AI can be used to analyze the market, and feeling AI can be used to gain customer insight. In the marketing strategy phase, mechanical AI can be used for segmentation, thinking AI for targeting, and feeling AI for positioning. At the marketing action stage, mechanical AI can be used for standardization, thinking AI for personalization, and feeling AI for relationalisation. This framework is applied to various areas of marketing and according to the marketing 4P/4C framework to illustrate the strategic use of AI (Shree, 2024)

The impact of AI on the marketing mix lies at the core of digital transformation, revolutionizing marketing strategies. This influence allows brands to create more targeted, effective, and personalized strategies by offering innovative, data-driven solutions in product, price, distribution, and promotion. The table below highlights the impact and application areas of artificial intelligence on the marketing mix.

Table 1: The Impact of Artificial Intelligence on Key Marketing Mix Strategies

Product	Price	Promotion	Place
• Development of new product • Personalization of the product • Automatic suggestions to the buyers • Creating added value for the customer	• Creating prices in accordance with the buyer's power	• Creating a unique customer experience • Personalization of comunication • Creating new value and benefits for the customers • Decreasing disappointing effect	• New distribution channels • Continuous customer support • Automatization of the sales

Source: Buntak et al., 2021: p. 410.

4.2. Product Management

AI can tailor offers to meet customers' needs. An AI-based marketing analytics tool can enhance customer satisfaction by evaluating how well product designs align with customer preferences (Dekimpe, 2020). During product searches, preference weights assigned to product attributes help marketers better understand the product recommendation system and adjust marketing strategies for effective product management. Topic modeling improves the system's ability to innovate and design services, while deep learning personalizes interest recommendations, helping to discover new places (Antons & Breidbach, 2018; Dzyabura & Huser, 2019; Guo et al., 2018).

4.3. Price Management

Pricing is a computationally intensive process that involves considering multiple factors to determine the final price. The complexity of this process is further heightened by real-time price adjustments driven by fluctuating demand. In such a dynamic environment, a multi-armed bandit algorithm powered by artificial intelligence can adjust prices in real-time (Misra et al., 2019). For environments where prices change frequently, such as e-commerce platforms, Bayesian inference within machine learning algorithms can quickly align price points with competitor prices (Bauer & Jannach, 2018). The most effective pricing algorithms integrate customer preferences, competitor strategies, and supply networks to optimize dynamic pricing (Dekimpe, 2020). On the application side, AI-powered tools such as big data analytics are used for price adjustments and forecasting.

4.4. Place Management

Product access and availability are critical components of the marketing mix for enhancing customer satisfaction. Product distribution is a largely mechanized and iterative process that depends on network relationships, logistics, inventory management, storage, and transportation. AI is an ideal solution for location management, with technologies such as cobots for packaging, drones for delivery, and IoT systems for order tracking and fulfillment (Huang & Rust, 2018). Both suppliers and customers benefit from the standardization and automation of the distribution process. In addition to its advantages in distribution management, AI also presents opportunities for customer engagement in service contexts. Service robots, programmed with emotional AI, can enhance customer interactions (Wirtz et al., 2018). While tangible robots engage with customers, human elements remain essential in complementing the service environment to ensure customer satisfaction. AI-driven service process automation further provides opportunities for performance and productivity improvements (Gür, 2022).

4.5. Promotion Management

Product access and availability are critical components of the marketing mix for enhancing customer satisfaction. Product distribution is a largely mechanized and iterative process that depends on network relationships, logistics, inventory management, warehousing, and transportation. AI provides an ideal solution for location management, utilizing technologies such as cobots for packaging, drones for delivery, and IoT systems for order tracking and fulfillment (Huang & Rust, 2018). Both suppliers and customers benefit from the standardization and automation of the distribution process. Beyond its advantages in distribution management, AI also presents opportunities for customer engagement in service contexts. Service robots programmed with emotional AI can significantly enhance customer interactions (Wirtz et al., 2018). While physical robots engage with customers, human elements remain crucial in complementing the service environment to ensure customer satisfaction. AI-driven automation of service processes also offers additional opportunities to improve performance and productivity (Gür, 2022).

Table 2 outlines the key applications of AI in marketing and illustrates the new opportunities it presents for companies to achieve a sustainable competitive advantage in an increasingly digital and data-driven world.

Table 2. Major Implementations of AI in Marketing

Applications	Description	References
Digital Marketing	• Analyzing consumer behavior, actions, and key indicators • Accurate targeting and optimal timing • Data processing across social media, email, and websites • Marketing automation: data flow, interactions, and business outcomes • Data collection, insights generation, predictions, and automated decision-making	(Yang et al., 2022; Paschen et al., 2021; Shah & Shay, 2020; Syam & Sharma, 2018;)
Reduction of human mistakes	• Reduces human error in marketing processes • Content development and optimization, such as email format personalization • Minimizes the risk of human error in decision-making • Addresses data security concerns and safeguards against breaches • Enhances employee competence in protecting customer and company data • Adapts to tackle cybersecurity challenges • Optimizes marketing strategies, reducing the need for excessive resources	(Ekramifard, A., Amintoosi, H., Seno, A.H., Dehghantanha, A., Parizi, 2020; Kitsios, F.; Kamariotou, 2021; Tan et al., 2016)
Connect business process	• Connects end-to-end business processes for a seamless experience. • Marketers using AI achieve exceptional performance. • Enables the creation of customized, human-centered marketing strategies. • Transforms customers into passionate brand advocates. • AI enhances interaction designs, making them more engaging. • Offers organizations the opportunity to elevate marketing to a superior experience.	(Akansha Mer, 2022; Grewal et al., 2020; Sadriwala, M. F. & Sadriwala, 2022; Yablonsky, 2019)
Analyse massive amounts of market data	• Analyzes vast amounts of market data to predict user behavior. • Understands billions of search queries to assess purchase intent. • Identifies gaps and facilitates appropriate actions. • AI and machine learning extend beyond basic tools. • Fundamentally transforms business operations. • Increases business efficiency nearly threefold.	(De Bruyn et al., 2020; He et al., 2020; Moudud-Ul-Huq, 2014; V. Rutskiy, R. Mousavi, N. Chudopal, Y.E. Amrani, V. Everstova, 2021)

Applications	Description	References
Deliver valuable information	• Analyzes new data to provide customers with more relevant information. • Acts as a tool to drive marketing campaigns toward higher goals. • Combines advanced technology and human intelligence for hyper-personalized, engaging interactions. • Delivers instant personalized advertising. • Continuously collects data to guide future ad content changes. • Enables sellers to focus on results using personal and behavioral data. • Provides deeper insights into customer goals, aspirations, and buying patterns.	(Brooks, 2022; Makarius et al., 2020; Purwanto P., Kuswandi K., 2020)
Enable convenient customer support	• Provides intelligent, simple, and convenient customer support at every stage for an optimal experience. • Essential for ensuring a seamless and efficient customer experience. • Automates repetitive marketing tasks to enhance marketing automation. • Captures real-time customer data and scales its application. • Simplifies sorting, organizing, and prioritizing data. • AI-powered marketing automation tools are transforming marketing strategies. • Next-generation platforms strengthen strategies by addressing evolving needs like hyper-personalized offers.	(Buntak et al., 2021; Sirajuddin & P, 2020; Jatobá et al., 2019; Fish & Ruby, 2009;)
Better marketing automation tool	• Enables marketers to identify qualified leads, refine nurturing tactics, and create relevant content by integrating with marketing automation tools. • Dynamic content emails, particularly one-to-one messages, effectively reinforce a brand's message by delivering contextual emails that capture subscribers' attention. • Dynamic content strategies ensure email relevance by considering factors such as geographic location, psychographics, behavioral data, and insights.	(Alyoshina, 2020; K. Jarek, 2019; Tanase & Cosmin, 2018)

Applications	Description	References
Ease workload	• Provides actionable insights from complex data within a short time frame. • Has the potential to significantly impact marketing activities through predictive analytics. • AI-driven predictive analytics unlocks substantial value from existing data. • Predictive lead scoring offers an innovative method for ranking and evaluating leads.	(Huang & Rust, 2021; Mohd Javaid, Abid Haleem, Ravi Pratap Singh, 2022; Vlačić et al., 2021; Wirth, 2018)
Speeds up data processing	• Enhances data processing speed, accuracy, and security, allowing teams to focus on strategic objectives while creating effective campaigns. • Collects and tracks real-time tactical data, enabling immediate decision-making. • Facilitates smarter, more objective decision-making through data-driven reports. • AI automates repetitive and time-consuming tasks, completing them efficiently and error-free. • Substantially reduces recruitment costs through automation and AI-driven efficiencies.	(Kumar, Rajan, Venkatesan, & Lecinski, 2019; Davenport, Guha, Grewal, & Bressgott, 2020; Raiter, 2021)
Make customer centered choices	• AI enhances consumer understanding, enabling more customer-centric decision-making. • Provides external market intelligence by analyzing social media and web content. • Enables marketers to quickly build detailed consumer profiles using big data. • Consumer profiles encompass interactions, campaign responses, habits, and other relevant factors.	(Rekha, Abdulla, & Asharaf, 2016; Paschen, Kietzmann, & Kietzmann, 2019: Feng, Park, Pitt, Kietzmann, & Northey, 2021)
Examine data about customer	• .Machine learning identifies the optimal times, frequency, engaging content, and effective email subject lines for customers. • Complex algorithms personalize the web experience for individual users. • Data is analyzed to provide more relevant offers tailored to each user. • Predictive models estimate the likelihood of leads converting into customers. • These models can also determine the price needed to convert leads or identify customers likely to make repeat purchases.	(Mustak, Salminen, Plé, & Wirtz, 2021; Olson & Levy, 2018; Vishnoi, Bagga, Sharma, & Wani, 2018)

Applications	Description	References
Improve stock control	• AI enhances inventory control during peak demand, preventing over-buying and maximizing revenue. • Every business has unique dynamic pricing and demand forecasting requirements. • Tailoring solutions based on specific products and customer types is often the best approach to meet business goals.	(Aladayleh, 2020; Wierenga, 2010; Nalini, Radhakrishnan, Yogi, Santhiya, & Harivardhini, 2021; Rodgers & Nguyen, 2022)
Customise shopping processes	• AI can create simulation models, personalize shopping experiences, and offer product recommendations. • Companies, like Amazon, utilize AI to engage customers by suggesting products based on past purchases and searches. • Intelligent technologies are evolving rapidly and can outperform humans in certain areas. • AI is surpassing humans in recognizing marketing trends due to its vast data analysis capabilities. • These systems analyze data to predict consumer buying patterns and enhance the user experience.	(Pedersen & Duin, 2022; Khrais, 2020; Kumar, 2020)
Digital advertising	• AI helps achieve success in digital advertising by targeting experts on platforms like Facebook, Google, and Instagram. • Ads are tailored by analyzing user data such as gender, age, interests, etc. • Marketers can leverage AI to analyze micro-trends and forecast future trends. • This enables more informed and strategic decision-making. • Companies can maximize return on investment by minimizing digital advertising waste. • AI, combined with IoT and connected devices, is shaping the future of digital marketing.	(Martínez-López & Casillas, 2013; Boz & Kose, 2018; Kietzmann & Pitt, 2020; Alawaad, 2021)
Better customer experience	• AI is used to enhance operational efficiency and improve the consumer experience. • Marketers can leverage these platforms to gain a deeper, more comprehensive understanding of their target audience. • The collected data helps boost conversions while reducing the effort required from marketing teams.	(Rust & Huang, 2014; Güngör, 2020; Dwivedi et al., 2021)

Applications	Description	References
Assisting marketers	• AI enables more effective customer interactions. • AI marketing components analyze large customer datasets and provide tech-driven solutions for future actions. • With the rise of digital media, big data has expanded, allowing marketers to analyze campaigns in greater depth and transfer data across multiple channels. • Effective AI solutions offer marketers a centralized platform to manage large data volumes efficiently.	(Bader & Kaiser, 2019; Enholm, Papagiannidis, Mikalef, & Krogstie, 2021; Loureiro, Guerreiro, & Tussyadiah, 2021)
Increased customer satisfaction and revenue	• AI reduces risk, boosts speed, enhances customer satisfaction, and increases marketing revenue. • It enables fast decisions on media channel spend allocation, maximizes campaign value, and fosters interaction. • AI improves customer experience by delivering personalized messages at optimal times. • It identifies high-risk customers and suggests strategies to re-engage them. • It analyzes strategy effectiveness and ensures appropriate resource allocation.	(Popova, 2017; Deggans, Krulicky, (Kovacova, Valaskova, & Poliak, 2019; Tchelidze, 2019; Sajid, Haleem, Bahl, Javaid, Goyal, & Mittal, 2021)
Development of a predictive model	• AI assists with data collection, predictive modeling, and testing. • It sends personalized emails and enhances customer experience. • Identifies customer groups at risk of abandonment or switching to competitors. • Analyzes multi-channel activity to predict abandonment and improve engagement. • Keeps users engaged with relevant offers, alerts, and emails. • Combining AI-powered abandonment prediction with personalized content boosts engagement and revenue.	(Yawalkar, 2019; Sahai & Goel, 2021; Vrontis, Christofi, Pereira, Tarba, Makrides, & Trichina, 2022)
Learning about customer preferences	• AI helps marketing teams understand customer preferences and demographics. • This allows for personalized experiences tailored to each customer. • Data can create detailed customer profiles, such as how they respond to headlines or visuals. • These insights inform and improve future marketing messages.	(Siau & Wang, 2018; Chatterjee, Chaudhuri, Vrontis, Thrassou, & Ghosh, 2021; Spreitzenbarth, Stuckenschmidt, & Bode, 2021)

Applications	Description	References
Make better decisions	• AI enhances insights by analyzing both quantitative and qualitative data. • In Google Ads, AI helps focus on high-level decisions, like campaign planning. • It enables more targeted campaigns and better ROI by processing large data sets. • Agencies can leverage AI to analyze data, predict trends, and improve brand quality. • AI fosters the creation of innovative, targeted ads. • Agencies can use AI to increase revenue while reducing costs.	(Prabowo, Murdiono, Hidayat, Rahayu, & Sutrisno, 2019; Farrokhi, Shirazi, Hajli, & Tajvidi, 2020; Boddu, Santoki, Khurana, Koli, Rai, & Agrawal, 2022)
Target audience	• Companies must understand their customers' needs and expectations. • AI marketing helps deliver more personalized experiences. • It enhances the efficiency of conversion management solutions. • Marketers can address strategic challenges through the analysis of sophisticated communications. • As consumer expectations evolve, there's increasing demand for customized experiences.	(Daqar & Smoudy, 2019; Lies, 2019; Dubey, Bryde, Blome, Roubaud, & Giannakis, 2021; Giroux, Kim, Lee, & Park, 2022)
Deliver the right message in time	• Helps marketers gain deeper insights into their customers. • Building a comprehensive profile involves collecting data from all customer interactions. • Enables the creation of personalized content and improved campaigns. • Facilitates the creation of innovative digital advertising using online data.	(Pangkey, Furkan, & Herman, 2019; Li, Cao, Ye, & Yue, 2021; Zhao & Cai; 2021)
Assist businesses	• Helps businesses understand their customers and deliver personalized experiences. • Companies can target using purchase history and social media data. • Plays a key role in optimizing ad performance. • Social media platforms use AI to automate ads and analyze performance. • Improves campaign performance by optimizing targeting and ad spending.	(Haleem & Javaid, 2019; Singh, Flaherty, Sohi, Deeter-Schmelz, Habel, Le Meunier-FitzHugh, & Onyemah, 2019; Kaiyp & Alimanova, 2020; Ahmed & Ganapathy, 2021)

Source: Haleem et al., 2022: pp. 124-127.

5. Examples of Artificial Intelligence in Marketing

A survey found that 46% of respondents reported that their interaction with technology increased their trust in a brand and fostered a positive perception. Alibaba has integrated artificial intelligence and smart clothing labels into fashion retail by launching a store called 'FashionAI' in Hong Kong. This system uses product-recognition tags and smart mirrors that suggest complementary items, complete with garment descriptions. Alibaba's next goal is to allow customers to create a virtual wardrobe from clothes they've tried on or touched while visiting the store. This innovative technology has been developed in response to evolving consumer expectations (Norris, 2024).

A survey revealed that 46% of respondents stated their interaction with technology enhanced their trust in a brand and cultivated a positive perception. Alibaba has integrated artificial intelligence and smart clothing labels into fashion retail by launching a store named 'FashionAI' in Hong Kong. This system employs product recognition tags and smart mirrors that suggest complementary items along with garment descriptions. Alibaba's next goal is to allow customers to build a virtual wardrobe from clothes they've tried on or interacted with during their visit to the store. This innovative technology was developed in response to the evolving expectations of consumers (Norris, 2024).

Netflix offers personalized content recommendations through artificial intelligence applications. The platform analyzes users' viewing history, preferences, and reactions to various series, documentaries, and films. This AI-driven system processes billions of data transactions to recommend content, forming a significant portion of the content users discover (*Pegasusone*, 2025).

Netflix offers personalized content recommendations through AI applications. The platform analyzes users' viewing history, preferences, and reactions to various series, documentaries, and films. The AI-powered system processes billions of data transactions to recommend content, which constitutes a significant portion of the content discovered by users (*Pegasusone,* 2025).

Starbucks has developed an AI strategy based on predictive analytics, utilizing loyalty cards and mobile applications to collect and analyze consumer data. As part of this strategy, announced in 2016, personalized marketing messages and recommendations were sent to customers. Additionally, voice-command ordering was integrated into the mobile app

to enhance the user experience. These AI applications contributed to the company's 11% annual revenue growth in 2018, compared to the previous year (*Macrotrends*, 2025).

Unilever has leveraged artificial intelligence to align insights from reference pools, such as popular media content and music, with food consumption trends. Through these analyses, a connection was discovered between breakfast and ice cream consumption. Seizing this trend as an opportunity, Unilever developed cereal-flavored ice cream and the concept of "Breakfast for Desserts," which has since become an industry standard (*Spiceworks*, 2019).

6. Conclusion

Innovations such as personalization, speech and image recognition, chatbots, churn prediction, dynamic pricing, and customer insights powered by artificial intelligence marketing are increasingly making traditional marketing techniques less effective. While AIM (Artificial Intelligence Marketing) technologies are rapidly reshaping marketing strategies and business models, some traditional areas of market research may be replaced by machines. This shift is leading to the elimination of jobs requiring fewer technical skills and the emergence of new business areas demanding high potential and advanced expertise. Today, AIM is not only transforming marketing strategies but also influencing customer behavior. This change marks a significant evolution in the marketing world, and it will be fascinating to see how the field continues to evolve in the future.

Data analytics is one of the most significant benefits of AI in marketing. This technology analyzes large volumes of data and provides marketers with real and actionable insights. Artificial intelligence (AI) is emerging as a crucial tool for enhancing the customer experience. For instance, a Harley Davidson dealership in New York tripled its revenue and generated 2930% more leads by using predictive analytics on an AI-based marketing platform, highlighting the potential of AI in marketing (Anoop MR, 2021).

Several studies have highlighted the effectiveness of AI in enhancing customer experiences. For example, Nguyen and Sidorova (2018) demonstrated that AI-powered chatbots improve customer interactions (Nguyen & Sidorova, 2018). Additionally, Gacanin and Wagner (2019) discussed the potential of AI and machine learning to generate significant business value, while addressing the challenges of implementing autonomous customer experience management (Gacanin & Wagner, 2019). Chatterjee et al. (2019) emphasized how AI analyzes customer habits, buying behavior,

and preferences to deliver personalized experiences (Chatterjee et al., 2019). Seranmadevi and Kumar (2019) outlined AI's key role in customer relationship management and user interface applications (Seranmadevi & Kumar, 2019). Sujata et al. (2019) noted the transformation of traditional stores into "smart stores" with AI applications, leading to supply chain efficiencies and enhanced customer experience (Sujata et al., 2019). Finally, Sha and Rajeswari (2019) pointed out that AI-supported technologies in the e-commerce sector have strengthened consumer-brand relationships and product interactions by monitoring consumers' five senses (Sha & Rajeswari, 2019). Maxwell et al. (2011) found that AI enhances marketing decision-making by improving the efficiency of data processing (Maxwell et al., 2011). Wisetsri et al. (2021) conducted a systematic review of the literature on AI in marketing research. Their bibliometric analysis, which covered more than 500 articles published between 1995 and 2020, highlighted the key contributors, sources, and scientific actors in the field, and explored the impact of AI on marketing. In their study, Davenport et al. (2020) proposed a framework for understanding AI's influence on marketing strategies and customer behavior. They noted that while the short- and medium-term impact of AI may be more limited, its effectiveness will increase when it augments human managers rather than replacing them. Soni et al. (2020) explored the impact of AI on business, offering a comprehensive perspective from innovation and research to market adoption and future business model changes. They identified two key drivers behind AI's emergence as the primary technology for over-automation and discussed the concept of the "AI divide," or the "dark side of AI." Shahid and Li (2019) conducted a qualitative study with marketing professionals from various companies to emphasize the benefits of integrating AI into marketing strategies, while also highlighting technical compliance as one of the biggest challenges in this process. Overgoor et al. (2019) provided a detailed explanation of how an industry-standard data mining framework can be applied to develop AI solutions for marketing problems, supported by a compelling case study on automated image scoring for digital marketing. Quasim and Chattopadhyay (2015) explored various types of forecasting and artificial intelligence (AI) techniques used in business forecasting, providing insights into promising AI approaches for this field. Kim (2014) conducted in-depth interviews with 20 marketing executives to examine the topology and characteristics of big data marketing strategies, emphasizing the business implications of big data analytics. Amado et al. (2018) evaluated the application of big data in marketing, noting the growing interest in this area and urging companies to enhance their efforts in developing big data capabilities. Özçelik and

Varnalı (2019) examined the psychological aspects and consumer behaviors related to the effectiveness of customized online advertising using behavioral targeting. They concluded that consumers' promotional focus significantly influences their perceptions of the informativeness and entertainment value of tailored ads. Simon (2019) discussed the key trends in artificial intelligence, highlighting the uncertainty surrounding demand from both business and consumer sides, along with the legal, ethical, and socio-economic challenges that may impede the widespread deployment of AI technologies.

Modern technology exists as a holistic system, with all its components interconnected. It is impossible to embrace only the positive aspects of technology while avoiding its negative consequences. As a powerful and influential force, technology inherently presents trade-offs, often leading to the gradual erosion of individual freedoms. In many instances, society is compelled to adapt to these changes by integrating new technological tools (Kaczynski, 2013).

AI data must be protected and assessed within its ethical context. As advancements in artificial intelligence (AI) significantly transform marketing strategies, the question of how these changes will fit within personal data protection frameworks becomes increasingly critical. These regulations are designed to strengthen data protection and give individuals greater control over their personal information, which directly impacts AI-driven strategies like targeted advertising, customer analytics, and personalized marketing. AI's capacity for large-scale data processing and automated decision-making is an area that requires careful reassessment in the context of personal data protection. Regulatory principles, such as data minimization, explicit consent, and accountability for algorithmic decisions, require marketers to make their AI-driven solutions more transparent and accountable. In this context, ethical principles such as transparency, fairness, non-maleficence, responsibility, and privacy will play a key role in shaping the adoption and implementation of AI in marketing. For instance, fundamental ethical requirements for AI usage include ensuring that algorithms are free from bias and that consumer data is used responsibly. The level of ethical practice in AI will depend on factors such as an individual's awareness of data rights, the ethical policies of companies, and the regulatory oversight mechanisms in place. When these ethical principles are upheld, AI can evolve into a trustworthy and sustainable marketing tool that benefits consumers, businesses, and other stakeholders.

References

Ahmed, A. A. A., & Ganapathy, A. (2021). Creation of automated content with embedded artificial intelligence: A study on learning management system for educational entrepreneurship. *Academy of Entrepreneurship Journal, 27*(3), 1–10.

Alqahtani, H., Kavakli-Thorne, M., & Kumar, G. (2021). Applications of generative adversarial networks (GANs): An updated review. *Archives of Computational Methods in Engineering, 28*, 525–552. https://doi.org/10.1007/s11831-019-09388-y

Arf, C. (1959). *Makine düşünebilir mi ve nasıl düşünebilir?* Atatürk Üniversitesi – Üniversite Çalışmalarını Muhite Yayma ve Halk Eğitimi Yayınları Konferanslar Serisi No: 1, 91-103. Erzurum.

Mer, A. S. V. (2022). Artificial intelligence disruption on the brink of revolutionizing HR and marketing functions. In S. D. S. Balamurugan, S. Pathak, A. Jain, S. Gupta, & S. Sharma (Eds.), *Impact of artificial intelligence on organizational transformation* (pp. 1–19). https://doi.org/10.1002/9781119710301.ch1

Aladayleh, K. (2020). A framework for integration of artificial intelligence into digital marketing in Jordanian commercial banks. *Journal of Innovation in Digital Marketing, 1*(1), 22–27.

Alawaad, H. A. (2021). The role of artificial intelligence (AI) in public relations and product marketing in modern organizations. *Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12*(14), 3180–3187.

Alyoshina, I. V. (2019). Artificial intelligence in an age of digital globalization. In *Proceedings of the International Conference on Technology & Entrepreneurship in Digital Society* (pp. 26–30). https://doi.org/10.17747/teds-2019-26-30

Amado, A., Cortez, P., Rita, P., & Moro, S. (2018). Research trends on Big Data in Marketing: A text mining and topic modeling based literature analysis. *European Research on Management and Business Economics, 24*(1), 1–7. https://doi.org/10.1016/j.iedeen.2017.06.002

Anoop, M. R. (2021). Artificial intelligence and marketing. *12*(4), 1247–1256.

Antons, D., & Breidbach, C. F. (2018). Big Data, Big Insights? Advancing service innovation and design with machine learning. *Journal of Service Research, 21*(1), 17–39. https://doi.org/10.1177/1094670517738373

Bader, V., & Kaiser, S. (2019). Algorithmic decision-making? The user interface and its role for human involvement in decisions supported by artificial intelligence. *Organization, 26*(5), 655–672.

Bauer, J., & Jannach, D. (2018). Optimal pricing in e-commerce based on sparse and noisy data. *Decision Support Systems, 106*, 53–63. https://doi.org/10.1016/j.dss.2017.12.002

Boddu, R. S. K., Santoki, A. A., Khurana, S., Koli, P. V., Rai, R., & Agrawal, A. (2022). An analysis to understand the role of machine learning, robotics and artificial intelligence in digital marketing. *Materials Today: Proceedings, 56*, 2288–2292.

Boz, H., & Kose, U. (2018). Emotion extraction from facial expressions by using artificial intelligence techniques. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 9*(1), 5–16.

Brooks, R., Nguyen, D., Bhatti, A., Allender, S., Johnstone, M., Lim, C. P., & Backholer, K. (2022). Use of artificial intelligence to enable dark nudges by transnational food and beverage companies: Analysis of company documents. *In Public Health Nutrition*, 1–9.

Brooks, T. (2022). Introduction. In T. Brooks (Ed.), *Political Emotions*. Palgrave Macmillan. https://doi.org/10.1007/978-3-030-91092-1_1

Bruyn, A. D., Viswanathan, V., Beh, Y. S., Brock, J. K. U., & von Wangenheim, F. (2020). Artificial intelligence and marketing: Pitfalls and opportunities. *Journal of Interactive Marketing, 51*, 91–105.

Buntak, K., Kovačić, M., & Mutavdžija, M. (2021). Application of artificial intelligence in the business. *International Journal for Quality Research, 15*(2), 403–416. https://doi.org/10.24874/IJQR15.02-03

Chatterjee, S., Chaudhuri, R., Vrontis, D., Thrassou, A., & Ghosh, S. K. (2021). Adoption of artificial intelligence-integrated CRM systems in agile organizations in India. *Technological Forecasting and Social Change, 168*, 120783.

Chatterjee, S., Ghosh, S. K., Chaudhuri, R., & Nguyen, B. (2019). Are CRM systems ready for AI integration?: A conceptual framework of organizational readiness for effective AI-CRM integration. *Bottom Line, 32*(2), 144–157. https://doi.org/10.1108/BL-02-2019-0069

Daqar, M. A. A., & Smoudy, A. K. (2019). The role of artificial intelligence on enhancing customer experience. *International Review of Management and Marketing, 9*(4), 22.

Davenport, T., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science, 48*(1), 24–42. https://doi.org/10.1007/s11747-019-00696-0

De Bruyn, A., Viswanathan, V., Beh, Y. S., Brock, J. K. U., & von Wangenheim, F. (2020). Artificial intelligence and marketing: Pitfalls and opportunities. *Journal of Interactive Marketing, 51*, 91–105. https://doi.org/10.1016/j.intmar.2020.04.007

Deggans, J., Krulicky, T., Kovacova, M., Valaskova, K., & Poliak, M. (2019). Cognitively enhanced products, output growth, and labor market chang-

es: Will artificial intelligence replace workers by automating their jobs? *Economics, Management, and Financial Markets, 14*(1), 38–43.

Dekimpe, M. G. (2020). Retailing and retailing research in the age of big data analytics. *International Journal of Research in Marketing, 37*(1), 3–14. https://doi.org/10.1016/j.ijresmar.2019.09.001

Dubey, R., Bryde, D. J., Blome, C., Roubaud, D., & Giannakis, M. (2021). Facilitating artificial intelligence powered supply chain analytics through alliance management during the pandemic crises in the B2B context. *Industrial Marketing Management, 96*, 135–146.

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., & Williams, M. D. (2021). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice, and policy. *International Journal of Information Management, 57*, 101994.

Dzyabura, D., & Huser, R. J. (2019). Recommending products when consumers. *Marketing Science, 38*(3), 365–541.

Ekramifard, A., Amintoosi, H., Seno, A. H., Dehghantanha, A., & Parizi, R. M. (2020). A systematic literature review of integration of blockchain and artificial intelligence. In R. Choo, K. K., Dehghantanha, A., & Parizi (Eds.), *Blockchain cybersecurity, trust and privacy* (pp. 147–160). *Advances in Information Security, Vol. 79*. Springer. https://doi.org/10.1007/978-3-030-38181-3_8

Enholm, I. M., Papagiannidis, E., Mikalef, P., & Krogstie, J. (2021). Artificial intelligence and business value: A literature review. *Information Systems Frontiers, 1*(26).

Farrokhi, A., Shirazi, F., Hajli, N., & Tajvidi, M. (2020). Using artificial intelligence to detect crisis related to events: Decision making in B2B by artificial intelligence. *Industrial Marketing Management, 91*, 257–273.

Feng, C. M., Park, A., Pitt, L., Kietzmann, J., & Northey, G. (2021). Artificial intelligence in marketing: A bibliographic perspective. *Australasian Marketing Journal, 29*(3), 252–263.

Fish, K., & Ruby, P. (2009). An artificial intelligence foreign market screening method for small businesses. *International Journal of Entrepreneurship, 13*(1), 65–91.

Gacanin, H., & Wagner, M. (2019). Artificial intelligence paradigm for customer experience management in next-generation networks: Challenges and perspectives. *IEEE Network, 33*(2), 188–194. https://doi.org/10.1109/MNET.2019.1800015

Gavilanes, J. M., Flatten, T. C., & Brettel, M. (2018). Content strategies for digital consumer engagement in social networks: Why advertising is an

antecedent of engagement. *Journal of Advertising, 47*(1), 4–23. https://doi.org/10.1080/00913367.2017.1405751

Giroux, M., Kim, J., Lee, J. C., & Park, J. (2022). Artificial intelligence and declined guilt: Retailing morality comparison between human and AI. *Journal of Business Ethics, 1*(15).

Gkikas, D., & Theodoridis, P. (2022). AI in consumer behavior. In L. C. Virvou, M. Tsihrintzis, G. A. Tsoukalas, & L. H. Jain (Eds.), *Advances in artificial intelligence-based technologies: Learning and analytics in intelligent systems* (pp. 147–176). Springer. https://doi.org/10.1007/978-3-030-80571-5_10

Greenwald, T. (2011, October 13). How smart machines like iPhone 4S are quietly changing your industry. *Forbes*. https://www.forbes.com/sites/tedgreenwald/2011/10/13/how-smart-machines-like-iphone-4s-are-quietly-changing-your-industry/

Grewal, D., Hulland, J., Kopalle, P. K., & Karahanna, E. (2020). The future of technology and marketing: A multidisciplinary perspective. *Journal of the Academy of Marketing Science, 48*(1), 1–8. https://doi.org/10.1007/s11747-019-00711-4

Goodfellow, I., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., Courville, A., & Bengio, Y. (2014). Generative adversarial networks. *Advances in Neural Information Processing Systems*, 3, Article 10.1145/3422622.

Guo, J., Zhang, W., Fan, W., & Li, W. (2018). Combining geographical and social influences with deep learning for personalized point-of-interest recommendation. *Journal of Management Information Systems, 35*(4), 1121–1153. https://doi.org/10.1080/07421222.2018.1523564

Gupta, R., Nair, K., Mishra, M., Ibrahim, B., & Bhardwaj, S. (2024). Adoption and impacts of generative artificial intelligence: Theoretical underpinnings and research agenda. *International Journal of Information Management Data Insights, 4*(1), 100232. https://doi.org/10.1016/j.jjimei.2024.100232

Güngör, H. (2020). Creating value with artificial intelligence: A multi-stakeholder perspective. *Journal of Creating Value, 6*(1), 72–85.

Gür, Y. E. (2022). Yapay zekâ ve pazarlama ilişkisi. *Fırat Üniversitesi Uluslararası İktisadi ve İdari Bilimler Dergisi, 6*(2), 131–148. https://dergipark.org.tr/tr/pub/fuuiibfdergi/issue/74071/1120189

Haleem, A., & Javaid, M. (2019). Additive manufacturing applications in Industry 4.0: A review. *Journal of Industrial Integration and Management, 4*(4), 1930001.

Haleem, A., Javaid, M., Asim, M., Pratap, R., & Suman, R. (2022). Artificial intelligence (AI) applications for marketing: A literature-based study.

International Journal of Intelligent Networks, 3(September), 119–132. https://doi.org/10.1016/j.ijin.2022.08.005

Han, R., Lam, H. K. S., Zhan, Y., Wang, Y., Dwivedi, Y. K., & Tan, K. H. (2021). Artificial intelligence in business-to-business marketing: A bibliometric analysis of current research status, development and future directions. *Industrial Management and Data Systems, 121*(12), 2467–2497. https://doi.org/10.1108/IMDS-05-2021-0300

Harmeling, C. M., Moffett, J. W., Arnold, M. J., & Carlson, B. D. (2017). Toward a theory of customer engagement marketing. *Journal of the Academy of Marketing Science, 45*(3), 312–335. https://doi.org/10.1007/s11747-016-0509-2

He, M., Li, Z., Liu, C., Shi, D., & Tan, Z. (2020). Deployment of artificial intelligence in real-world practice: Opportunity and challenge. *Asia-Pacific Journal of Ophthalmology, 9*(4), 299–307. https://doi.org/10.1097/APO.0000000000000301

Higgins, I., Matthey, L., Pal, A., Burgess, C. P., Glorot, X., Botvinick, M. M., & Mohamed, S. L. (2017). A beta-VAE: Learning basic visual concepts with a constrained variational framework. *ICLR (Poster), 3*, 1–22. https://doi.org/10.1177/1078087408328050

Huang, M. H., & Rust, R. T. (2017). Technology-driven service strategy. *Journal of the Academy of Marketing Science, 45*(6), 906–924. https://doi.org/10.1007/s11747-017-0545-6

Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science, 49*(1), 30–50. https://doi.org/10.1007/s11747-020-00749-9

Jain, P., & Aggarwal, K. (2020). Transforming marketing with artificial intelligence. *International Research Journal of Engineering and Technology, 7*(7), 3964–3976. https://doi.org/10.69554/ydwt3570

Jarek, K., & Mazurek, G. (2019). Marketing and artificial intelligence. *Central European Business Review, 8*(2).

Jatobá, M., Santos, J., Gutierriz, I., Moscon, D., Fernandes, P. O., & Teixeira, J. P. (2019). Evolution of artificial intelligence research in human resources. *Procedia Computer Science, 164*, 137–142. https://doi.org/10.1016/j.procs.2019.12.165

Javaid, M., Haleem, A., Singh, R. P., & Suman, R. (2022). Artificial intelligence applications for Industry 4.0: A literature-based study. *Journal of Industrial Integration and Management, 7*(1), 83–111.

Jarek, K., & Mazurek, G. (2019). Marketing and artificial intelligence. *Central European Business Review, 8*(2).

Kaczynski, T. J. (2013). *Sanayi toplumu ve geleceği*. Kaos Yayınları.

Kaiyp, K., & Alimanova, M. (2020). Improving indicators of digital marketing using artificial intelligence. *Suleyman Demirel University Bulletin: Natural and Technical Sciences, 52*(1).

Khrais, L. T. (2020). Role of artificial intelligence in shaping consumer demand in e-commerce. *Future Internet, 12*(12), 226.

Kietzmann, J., & Pitt, L. F. (2020). Artificial intelligence and machine learning: What managers need to know. *Business Horizons, 63*(2), 131–133.

Kim, K. Y. (2014). Business intelligence and marketing insights in an era of big data: The q-sorting approach. *KSII Transactions on Internet and Information Systems, 8*(2), 567–582. https://doi.org/10.3837/tiis.2014.02.014

Kitsios, F., & Kamariotou, M. (2021). Artificial intelligence and business strategy towards digital transformation: A research agenda. *Sustainability, 13*. https://doi.org/10.62441/nano-ntp.v20iS6.5

Kumar, T. S. (2020). Data mining-based marketing decision support system using hybrid machine learning algorithm. *Journal of Artificial Intelligence, 2*(3), 185–193.

Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. *California Management Review, 61*(4), 135–155.

Li, R., Cao, Z., Ye, H., & Yue, X. (2021). Application and development trend of artificial intelligence in enterprise marketing. *Journal of Physics: Conference Series, 1881*, 022032.

Lies, J. (2019). Marketing intelligence and big data: Digital marketing techniques on their way to becoming social engineering techniques in marketing. *International Journal of Interactive Multimedia and Artificial Intelligence, 5*(5).

Macrotrends Homepage. (2025). https://www.macrotrends.net/stocks/charts/SBUX/starbucks/revenue

Madanchian, M. (2024). Generative AI for consumer behavior prediction: Techniques and applications. *Sustainability, 16*, 9963. https://doi.org/10.3390/su16229963

Makarius, E. E., Mukherjee, D., Fox, J. D., & Fox, A. K. (2020). Rising with the machines: A sociotechnical framework for bringing artificial intelligence into the organization. *Journal of Business Research, 120*, 262–273. https://doi.org/10.1016/j.jbusres.2020.07.045

Martínez de Pisón, F. J., Urraca, R., Quintián, H., & Corchado, E. (Eds.). (2017). *Hybrid artificial intelligent systems: Proceedings of the 12th international conference*, HAIS 2017, La Rioja, Spain, June 21–23, 2017. Springer.

Martínez-López, F. J., & Casillas, J. (2013). Artificial intelligence-based systems applied in industrial marketing: An historical overview, current and future insights. *Industrial Marketing Management, 42*(4), 489–495.

Maxwell, A. L., Jeffrey, S. A., & Lévesque, M. (2011). Business angel early stage decision making. *Journal of Business Venturing, 26*(2), 212–225. https://doi.org/10.1016/j.jbusvent.2009.09.002

Mer, A., & Virdi, A. S. (2022). Artificial intelligence disruption on the brink of revolutionizing HR and marketing functions. In *Impact of Artificial Intelligence on Organizational Transformation* (pp. 1–19).

Misra, K., Schwartz, E. M., & Abernethy, J. (2019). Dynamic online pricing with incomplete information using multiarmed bandit experiments. *Marketing Science, 38*(2), 226–252. https://doi.org/10.1287/mksc.2018.1129

Mohd Javaid, A., Haleem, A., Singh, R. P., & R. S. (2022). Artificial intelligence applications for Industry 4.0: A literature-based study. *Journal of Industrial Integration and Management, 7*(1). https://doi.org/10.1142/S2424862221300040

Moudud-Ul-Huq, S. (2014). The role of artificial intelligence in the development of accounting systems: A review. *UP Journal of Accounting Research & Audit Practices, 13*(2), 7–19.

Mustak, M., Salminen, J., Plé, L., & Wirtz, J. (2021). Artificial intelligence in marketing: Topic modeling, scientometric analysis, and research agenda. *Journal of Business Research, 124*, 389–404.

Nalini, M., Radhakrishnan, D. P., Yogi, G., Santhiya, S., & Harivardhini, V. (2021). Impact of artificial intelligence (AI) on marketing. *International Journal of Aquatic Science, 12*(2), 3159–3167.

Nguyen, Q. N., & Sidorova, A. (2018). Understanding user interactions with a chatbot: A self-determination theory approach. *Emergent Research Forum (ERF), American Conference in Information Systems*, 1–5.

Norris, P. (2024). 26 impressive examples of AI in marketing. https://blog.socialmediastrategiessummit.com/10-examples-of-ai-in-marketing/

Olson, C., & Levy, J. (2018). Transforming marketing with artificial intelligence. *Applied Marketing Analytics, 3*(4), 291–297.

Overgoor, G., Chica, M., Rand, W., & Weishampel, A. (2019). Letting the computers take over: Using AI to solve marketing problems. *California Management Review, 61*(4), 156–185. https://doi.org/10.1177/0008125619859318

Ozcelik, A. B., & Varnali, K. (2019). Effectiveness of online behavioral targeting: A psychological perspective. *Electronic Commerce Research and Applications, 33*, (August 2018). https://doi.org/10.1016/j.elerap.2018.11.006

Pangkey, F. M., Furkan, L. M., & Herman, L. E. (2019). Pengaruh artificial intelligence dan digital marketing terhadap minat beli konsumen. *Jurnal Magister Manajemen Unram, 8*(3).

Paschen, J., Kietzmann, J., & Kietzmann, T. C. (2019). Artificial intelligence (AI) and its implications for market knowledge in B2B marketing. *Journal of Business & Industrial Marketing*.

Paschen, J., Paschen, U., Pala, E., & Kietzmann, J. (2021). Artificial intelligence (AI) and value co-creation in B2B sales: Activities, actors and resources. *Australasian Marketing Journal, 29*(3), 243–251. https://doi.org/10.1016/j.ausmj.2020.06.004

Pegasusone homepage. (2025). https://www.pegasusone.com/real-world-ai-use-case/

Pitt, C. S., Bal, A. S., & Plangger, K. (2020). New approaches to psychographic consumer segmentation: Exploring fine art collectors using artificial intelligence, automated text analysis and correspondence analysis. *European Journal of Marketing, 54*(2), 305–326. https://doi.org/10.1108/EJM-01-2019-0083

Popova, E. A. (2017). Using artificial intelligence in marketing. *European Science, 6*, 62–63.

Prabowo, S. H. W., Murdiono, A., Hidayat, R., Rahayu, W. P., & Sutrisno, S. (2019). Digital marketing optimization in artificial intelligence era by applying consumer behavior algorithm. *Asian Journal of Entrepreneurship and Family Business, 3*(1), 41–48.

Prosvetov, A. V. (2019). GAN for recommendation system. *Journal of Physics: Conference Series, 1405*(1). https://doi.org/10.1088/1742-6596/1405/1/012005

Purwanto, P., Kuswandi, K., & Fatmah, F. (2020). Interactive applications with artificial intelligence: The role of trust among digital assistant users. *Forsait, 14*(2), 64–75. https://doi.org/10.17323/2500-2597.2020.2.64.75

Quasim, T., & Chattopadhyay, R. (2015). Artificial intelligence as a business forecasting and error handling tool. *International Journal of Advanced Computer Technology, 4*(2), 1534–1537.

Raiter, O. (2021). Segmentation of bank consumers for artificial intelligence marketing. *International Journal of Contemporary Financial Issues, 1*(1), 39–54.

Rekha, A. G., Abdulla, M. S., & Asharaf, S. (2016). Artificial intelligence marketing: An application of a novel lightly trained support vector data description. *Journal of Information & Optimization Sciences, 37*(5), 681–691.

Rodgers, W., & Nguyen, T. (2022). Advertising benefits from ethical artificial intelligence algorithmic purchase decision pathways. *Journal of Business Ethics, 1*(19).

Rouhani, S., Ashrafi, A., Zare Ravasan, A., & Afshari, S. (2016). The impact model of business intelligence on decision support and organizational benefits. *Journal of Enterprise Information Management, 29*(1), 19–50. https://doi.org/10.1108/JEIM-12-2014-0126

Rust, R. T., & Huang, M. H. (2014). The service revolution and the transformation of marketing science. *Marketing Science, 33*(2), 206–221.

Rutskiy, V., Mousavi, R., Chudopal, N., Amrani, Y. E., Everstova, V., & Tsarev, R. (2021, October). Artificial intelligence as a disruptive technology for digital marketing. In *Proceedings of the Computational Methods in Systems and Software* (pp. 895–900). Springer, Cham.

Sadriwala, M. F., & Sadriwala, K. F. (2022). Perceived usefulness and ease of use of artificial intelligence on marketing innovation. *International Journal of Innovation in the Digital Economy (IJIDE), 13*(1), 1–10. https://doi.org/10.4018/IJIDE.292010

Sahai, S., & Goel, R. (2021). Impact of artificial intelligence in changing trends of marketing. *Applications of Artificial Intelligence in Business and Finance, Modern Trends*, 221.

Sajid, S., Haleem, A., Bahl, S., Javaid, M., Goyal, T., & Mittal, M. (2021). Data science applications for predictive maintenance and materials science in context to Industry 4.0. *Materials Today: Proceedings, 45*, 4898–4905.

Seranmadevi, R., & Senthil Kumar, A. (2019). Experiencing the AI emergence in Indian retail – Early adopters approach. *Management Science Letters, 9*(1), 33–42. https://doi.org/10.5267/j.msl.2018.11.002

Sha, S. N., & Rajeswari, M. (2019). Creating a brand value and consumer satisfaction in e-commerce business using artificial intelligence. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3351618

Shah, D., & Shay, E. (2020). How and why artificial intelligence, mixed reality, and blockchain technologies will change marketing we know today. In *Handbook of Advances in Marketing in an Era of Disruptions: Essays in Honour of Jagdish N. Sheth* (pp. 377–390). https://doi.org/10.4135/9789353287733.n32

Shahid, M. Z., & Li, G. (2019). Impact of artificial intelligence in marketing: A perspective of marketing professionals of Pakistan. *Global Journal of Management And Business Research, 19*(2). https://www.journalofbusiness.org/index.php/GJMBR/article/view/2704

Sheth, J. (2019). How and why artificial intelligence, mixed reality, and blockchain technologies will change marketing as we know today. In *Essays in Honour of Jagdish N.* (pp. 377–390).

Shree, Krisha, P. (2024). Beyond boundaries: Examining the coming together of AI and marketing. *International Journal of Scientific Research in Engineering and Management*, *8*(1), 1. https://doi.org/10.55041/IJSREM28394

Siau, K., & Wang, W. (2018). Building trust in artificial intelligence, machine learning, and robotics. *Cutter Business Technology Journal, 31*(2), 47–53.

Rutskiy, V., Mousavi, R., Chudopal, N., Amrani, Y. E., Everstova, V., & Tsarev, R. (2021, October). Artificial intelligence as a disruptive technology for digital marketing. In *Proceedings of the Computational Methods in Systems and Software* (pp. 895–900). Springer, Cham.

Sadriwala, M. F., & Sadriwala, K. F. (2022). Perceived usefulness and ease of use of artificial intelligence on marketing innovation. *International Journal of Innovation in the Digital Economy (IJIDE), 13*(1), 1–10. https://doi.org/10.4018/IJIDE.292010

Sahai, S., & Goel, R. (2021). Impact of artificial intelligence in changing trends of marketing. *Applications of Artificial Intelligence in Business and Finance, Modern Trends*, 221.

Sajid, S., Haleem, A., Bahl, S., Javaid, M., Goyal, T., & Mittal, M. (2021). Data science applications for predictive maintenance and materials science in context to Industry 4.0. *Materials Today: Proceedings, 45*, 4898–4905.

Seranmadevi, R., & Senthil Kumar, A. (2019). Experiencing the AI emergence in Indian retail – Early adopters approach. *Management Science Letters, 9*(1), 33–42. https://doi.org/10.5267/j.msl.2018.11.002

Sha, S. N., & Rajeswari, M. (2019). Creating a brand value and consumer satisfaction in e-commerce business using artificial intelligence. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3351618

Shah, D., & Shay, E. (2020). How and why artificial intelligence, mixed reality, and blockchain technologies will change marketing we know today. In *Handbook of Advances in Marketing in an Era of Disruptions: Essays in Honour of Jagdish N. Sheth* (pp. 377–390). https://doi.org/10.4135/9789353287733.n32

Shahid, M. Z., & Li, G. (2019). Impact of artificial intelligence in marketing: A perspective of marketing professionals of Pakistan. *Global Journal of Management And Business Research, 19*(2). https://www.journalofbusiness.org/index.php/GJMBR/article/view/2704

Sheth, J. (2019). How and why artificial intelligence, mixed reality, and blockchain technologies will change marketing as we know today. In *Essays in Honour of Jagdish N.* (pp. 377–390).

Siau, K., & Wang, W. (2018). Building trust in artificial intelligence, machine learning, and robotics. *Cutter Business Technology Journal, 31*(2), 47–53.

Tan, J., Cherkauer, K. A., & Chaubey, I. (2016). Developing a comprehensive spectral-biogeochemical database of midwestern rivers for water quality retrieval using remote sensing data: A case study of the Wabash River and its tributary, Indiana. *Remote Sensing, 8*(6). https://doi.org/10.3390/rs8060517

Tan, T. F., & Ko, C. H. (2016). Application of artificial intelligence to cross-screen marketing: A case study of AI technology company. In *Proceedings of the 2nd International Conference on Artificial Intelligence and Industrial Engineering* (pp. 517–519).

Tanase, C., & Cosmin, G. (2018). Artificial intelligence: Optimizing the experience of digital marketing. *Romanian Distribution Committee Magazine, 9*(1), 24–28. https://ideas.repec.org/a/rdc/journl/v9y2018i1p24-28.html

Tchelidze, L. (2019). Potential and skill requirements of artificial intelligence in digital marketing. *Calitatea, 20*(S3), 73–78.

Thiraviyam, T. (2018). Artificial intelligence marketing. *International Journal of Recent Research Aspects, 19*(4), 449–452.

Turing, A. M. (1950). Computing machinery and intelligence. *Mind, 49*, 433-460. https://doi.org/10.1007/978-3-319-53280-6_11

Rutskiy, V., Mousavi, R., Chudopal, N., Amrani, Y. E., Everstova, V., & Tsarev, R. (2021). Artificial intelligence as a disruptive technology for digital marketing. In *Proceedings of the Computational Methods in Systems and Software* (pp. 895–900). Springer.

Vetterli, C., Uebernickel, F., Brenner, W., Petrie, C., & Stermann, D. (2016). How Deutsche Bank's IT division used design thinking to achieve customer proximity. *MIS Quarterly Executive, 15*(1), 37–53.

Vishnoi, S. K., Bagga, T., Sharma, A., & Wani, S. N. (2018). Artificial intelligence-enabled marketing solutions: A review. *Indian Journal of Economics & Business, 17*(4), 167–177.

Vlačić, B., Corbo, L., Costa e Silva, S., & Dabić, M. (2021). The evolving role of artificial intelligence in marketing: A review and research agenda. *Journal of Business Research, 128*(February 2021), 187–203. https://doi.org/10.1016/j.jbusres.2021.01.055

Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., & Trichina, E. (2022). Artificial intelligence, robotics, advanced technologies and human resource management: A systematic review. *International Journal of Human Resource Management, 33*(6), 1237–1266.

Wei, R., Garcia, C., El-Sayed, A., Peterson, V., & Mahmood, A. (2020). Variations in variational autoencoders - A comparative evaluation. *IEEE Access, 8*, 153651–153670. https://doi.org/10.1109/ACCESS.2020.3018151

Wikipedia. (2025). *Yapay zekâ*. https://tr.wikipedia.org/wiki/Yapay_zekâ

Wirth, N. (2018). Hello marketing, what can artificial intelligence help you with? *International Journal of Market Research, 60*(5), 435–438. https://doi.org/10.1177/1470785318776841

Wirtz, J., Patterson, P. G., Kunz, W. H., Gruber, T., Lu, V. N., Paluch, S., & Martins, A. (2018). Brave new world: Service robots in the frontline. *Journal of Service Management, 29*(5), 907–931.

Wisetsri Worakamol, Ragesh T., Catherene Julie Aarthy, Vibha Thakur, & Digesh Pandey, K. G. (2021). Systematic analysis and future research directions in artificial intelligence for marketing. *Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12*(11), 43–55. https://doi.org/10.17762/turcomat.v12i11.5825

Yablonsky, S. A. (2019). Multidimensional data-driven artificial intelligence innovation. *Technology Innovation Management Review, 9*(12), 16–28. https://doi.org/10.22215/timreview/1288

Yang, Y., Liu, Y., Lv, X., Ai, J., & Li, Y. (2022). Anthropomorphism and customers' willingness to use artificial intelligence service agents. *Journal of Hospitality Marketing and Management, 31*(1), 1–23. https://doi.org/10.1080/19368623.2021.1926037

Yawalkar, M. V. V. (2019). A study of artificial intelligence and its role in human resource management. *International Journal of Research and Analytical Reviews (IJRAR), 6*(1), 20–24.

Yenduri, G., Ramalingam, M., Selvi, G. C., Supriya, Y., Srivastava, G., Maddikunta, P. K. R., Raj, G. D., Jhaveri, R. H., Prabadevi, B., Wang, W., Vasilakos, A. V., & Gadekallu, T. R. (2024). GPT (Generative Pre-Trained Transformer) - A comprehensive review on enabling technologies, potential applications, emerging challenges, and future directions. *IEEE Access, 12*(March), 54608–54649. https://doi.org/10.1109/ACCESS.2024.3389497

Yoon, J. H., & Jang, B. (2023). Evolution of deep learning-based sequential recommender systems: From current trends to new perspectives. *IEEE Access, 11*(May), 54265–54279. https://doi.org/10.1109/ACCESS.2023.3281981

Zhao, R., & Cai, Y. (2021). Research on online marketing effects based on multi-model fusion and artificial intelligence algorithms. *Journal of Ambient Intelligence and Humanized Computing, 1*(17).