RESEARCH ARTICLE

ARTIFICIAL INTELLIGENCE IN DIGITAL MARKETING: DESCRIPTIVE ANALYSIS OF COMPANIES' ARTIFICIAL INTELLIGENCE STRATEGIES WITH RANDOM SAMPLING

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Received: 16.01.2023 - Accepted: 31.08.2023

Toros Ntapiapis, N. (2023). Artificial intelligence in digital marketing: Descriptive analysis of companies' artificial intelligence strategies with random sampling. *Etkileşim*, 12, 368-387. doi: 10.32739/etkilesim.2023.6.12.226

This study complies with research and publication ethics.

Abstract

Brands are constantly looking for strategies to meet customer needs in the marketplace and to promote and market their products more effectively. As the new world of technology replaces traditional TV commercials and outdoor billboards, different approaches have emerged. At this point, with the development of computer software and machine learning, Artificial Intelligence (AI) has become an indispensable option for those companies that want to expand their sales and marketing strategies to different dimensions. Artificial Intelligence technologies, deep machine learning and appropriate software can support companies on a wide range of scales, from providing brands with product options suitable for the target audience to offering customers special discounts, or from managing a complete process of collecting marketing data to ensuring that company information is accurately archived in the digital environment. The purpose of this article is to provide a descriptive analysis of the leading companies in today's market, with annual revenues of more than $10 million, that were included in the research through random sampling. At this point, the article draws attention to the importance of AI in the development of brands' marketing strategies and gives several examples of campaigns and applications in which brands have used AI. Finally, as a result of the descriptive analysis, the increase in revenue following the use of AI in marketing strategies and advertising is also considered.

Keywords: marketing, strategy, artificial intelligence, technology, machine learning, software, programming.

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ARAŞTIRMA MAKALESİ

DİJİTAL PAZARLAMADA YAPAY ZEKÂ: ŞİRKETLERİN YAPAY ZEKÂ STARTEJİLERİNİN SEÇKİSİZ ÖRNEKLEM İLE BETİMSEL ANALİZİ

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Bu çalışma araştırma ve yayın etiğine uygun olarak gerçekleştirilmiştir.

Öz

Markalar piyasadaki müşteri talebini karşılamak, ürünlerinin reklamını ve pazarlamasını daha etkili yapabilmek için stratejik araştırmalar gerçekleştirmektedirler. Teknolojik gelişmeler, geleneksel tarzdaki televizyon reklamları ve açık hava reklam panolarının yerini alacak farklı yaklaşımlar ortaya koymaktadır. Bu noktada, bilgisayar yazılımlarının ve makine öğreniminin de gelişmesiyle birlikte yapay zekâ, satışlarını ve pazarlama stratejilerini farklı boyutlara taşımak isteyen şirketler için vazgeçilmez bir seçenek halini almıştır. Yapay zekâ teknolojisi, derin makine öğrenimi ve uygun yazılımlar ile markaların hedef kitleye uygun ürün seçenekleri sunmasından müşterilerin özel indirim almasına ya da şirketin pazarlama verilerini toplarken eksiksiz bir süreç yönetmesinden şirket bilgilerinin dijital ortamda hatasız bir şekilde arşivlenmesine kadar çok geniş bir ölçekte firmalara yardım edebilmektedir. Bu makale günümüz pazarında önde gelen ve yıllık geliri 10 milyon dolardan yüksek olan ve de tesadüfi örneklem yolu ile araştırma kapsamına alınan şirketlerin betimsel analizini yapmayı hedeflemektedir. Bu noktada makalede markaların, pazarlama stratejilerini geliştirmede yapay zekanın önemine dikkat çekilmekte ve markaların yapay zekâ kullandığı çeşitli kampanya ve uygulamalardan örnekler verilmektedir. Son olarak, yapılan betimsel analiz sonucunda pazarlama stratejilerinde ve reklamlarda yapay zekâ kullanılmaya başladıktan sonraki gelir artışı da göz önünde bulundurularak bu teknolojinin firmalar üzerinde oldukça olumlu bir etki yarattığı sonucuna varılmıştır.

Anahtar Sözcükler: pazarlama, strateji, yapay zekâ, teknoloji, makine öğrenimi, yazılım, programlama.

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Introduction

Artificial Intelligence (AI) technology is the processing of human intelligence by various systems and machines such as computers. The basic principle of AI technology is that machine systems perform many tasks, from simple to complex, by imitating and mimicking human intelligence. The goal of AI systems is to reflect the human cognitive system in technology, and thus to transfer the characteristics of human intelligence such as learning, tracking, and logic to machines by using operating systems in various fields. As today's technology evolves, the areas in which the functionality of AI spreads are becoming more evident and advancing. When this system was first used, machines were able to perform simple functions such as calculating, but today, with its use in many areas from advertising to bio-design, the ability to define text or characters or perform calculations has fallen far behind the possibilities. At this point, AI is developing every day and contributing to many industries.

Artificial Intelligence technology, which is actively used in many fields from health to marketing, has come to the fore with its ability to provide insights that raise awareness of the actions to be taken by businesses, and with its ability to perform the task of human intelligence in various situations without error because it is machine-based. Artificial Intelligence is detail-oriented, minimises the margin of human error in the tasks it is given and, thanks to its operating system, completes the tasks assigned to it faster and with a minimum of errors.

The efficiency this brings has led to a breakthrough in the desire to use AI technology across all industries. Today's leading companies such as *Uber*, *Google* and *Amazon* have become market leaders by actively adapting AI technology to their businesses and developing their technologies. Today, AI has become an indispensable technology for businesses to run their operations, gain an edge over competitors in the marketplace, and take the right actions based on customer profiles.

History of Artificial Intelligence (AI)

The fact that the concept of giving intelligence to inanimate objects has been described in the past, from Greek mythology to philosophy, shows that the basis of Artificial Intelligence (AI) technology is quite old. Examples such as the depiction of the robot-like golden servants of the Greek god *Hephaestus*, the statues of the gods depicted by priests by ancient Egyptian engineers, or the use of inanimate objects and symbols by philosophers such as Descartes and Aristotle to describe human thought and intelligence, the foundations of the concept of AI go far back in history.

The late 19th century and the first half of the 20th century revealed the foundational work that would lead to the modern computer. In 1836, Cam-

bridge University mathematician Charles Babbage and Countess of Lovelace Augusta Ada Byron invented the first design for a programmable machine (Burns et al., 2022). In the 1940s, when a mathematician named John von Neumann created the design of the stored program computer, the idea that a computer or computer program could store the uploaded data and keep it in its memory was put forward, and with this idea, the foundations of web networks were laid towards the 1950s. After these years, by the 1960s, the modern computer was designed so that researchers could carry out new projects on machine intelligence and operating systems. In the light of all these studies, during a conference given by Darthmouth College, they expressed their opinion about the invention of a machine functionality that allows to imitate human intelligence. Then, in the mid-1960s, MIT Professor Joseph Weizenbaum developed *ELIZA*, an early natural language processing program that formed the basis of today's chatbots. But the success of artificial general intelligence has proven difficult, not close, hindered by limitations in computer processing and memory and the complexity of the problem (Burns et al., 2022).

In the 1980s, just before the worldwide economy and industrial production collapsed, research on operating systems, AI and deep learning techniques was conducted, but no result could be reached due to the fluctuations in the economy.

However, after that, the increase in data due to the increase in computing power, economy, and industrial production in the period from the 1990s to the present, enabled striking research and bright ideas in the field of AI. Breakthroughs in fields such as machine learning, programming, robotics, and deep learning have led to the development of AI technology as time progresses. In this context, with today's technology, AI plays a role in many fields from health to finance, from automotive to popular culture figures.

Types of AI

As Aren Hintze, a computer science and engineering researcher at Michigan State University, has pointed out in her articles, there are four types of AI that are actively used in industry, ranging from intelligent systems to sensitive systems. Reactive machines are classified as Type 1 and are machines that have no memory and are specific to the task for which they were acquired. These machines are able to recognise and predict but cannot filter past information and data to reveal future outcomes because they have no memory.

However, the type of AI defined as Type 2 are intelligence systems with limited memory, and these machines can use data they have acquired in the past to show future results. The other two types are machines and operating systems that are theoretical but do not yet exist. Type 3 AI is called Theory of

Mind and explains that the AI system can be an operating system that understands emotions and has social intelligence. In this way, this type of person can understand their emotions and motives and predict behaviour.

Finally, Type 4 AI is called self-awareness. These machines can understand their current state, but such technology and operating systems do not yet exist.

How Does AI Work?

Artificial Intelligence is a technology that enables the development of decision-making insights in many areas by transferring the ability of human intelligence to rethink, integrate acquired knowledge, analyse learned data, and reach a conclusion to machines with simultaneous and compatible operating systems. Contrary to popular belief, however, this technology does not just consist of machine learning, but also relies on the creation of the necessary algorithms and a well-equipped software language. The data uploaded to the system with software and algorithms is analysed, and after receiving the data, predictions and results are obtained according to the situations that may arise in the future.

It mimics the learning, reasoning, and self-correcting features of human intelligence. Data is collected during the learning process. The operating system and algorithms are used to extract information from the collected data and to make choices about how to act in the future. On the other hand, in the reasoning process, a choice is made about which algorithm to use to achieve the desired goal. Finally, the error rate is minimised while achieving the desired result through self-correcting processes.

Qualities and Applications of Artificial Intelligence

Artificial Intelligence machines and software systems respond to stimuli consistent with human intelligence responses and make human-level expert decisions, helping humans anticipate problems and find possible solutions to problems that may arise (Shubhendu & Vijay, 2013). In this context, it can be said that these systems operate in a conscious, intelligent, and adaptive manner.

Algorithms designed for use in AI technology differ from passive machines in that they have the ability to make decisions by reviewing real-time data. In this way, they collect and analyse information from various sources using digital data or remote inputs and come to a conclusion based on the insights they gain from this data (West & Allen, 2022). Considering these characteristics, it can be said that AI technology has a level of sophistication that makes a difference in analysis and decision-making, which can be considered intentionality.

AI is often used in conjunction with machine learning and data analytics (McAfee & Brynjolfsson, 2018). Thanks to machine learning, data is collected and with the underlying algorithm, pathological issues can be identified for developers to analyse specific problems. This quality is called intelligence, and its prerequisite is solid data input. AI systems also have the ability to learn and adapt when making decisions. Thanks to their advanced algorithms, they can benefit from their past experience in accordance with the data entered and use the information gained from this to minimise the error rate for the result they will achieve in the future and to adapt.

AI is not just a technology specific to one field, but a system that can be integrated into many different fields, from health to security. There are countless examples of AI already impacting the world and enhancing human capabilities in significant ways (West, 2018). There is growing demand for AI to be used and adapted for businesses because it offers so many opportunities and options for economic development for businesses and manufacturers. A project to increase global GDP by $15.7 trillion, or a full 14%, by 2030 in Europe, $1.2 trillion in Africa and Oceania, $0.9 trillion in the rest of Asia excluding China, $0.7 trillion in Southern Europe and $0.5 trillion in Latin America has started. China is making rapid progress, with a national goal of investing $150 billion in AI and becoming a global leader in the field by 2030 (West & Allen, 2022). Statistics like these, from industries in most countries around the world, show how many opportunities AI offers the international market.

One of the most important applications of AI is in healthcare. In the healthcare industry, companies are relying on machine learning to diagnose patients faster and improve the patient registration process with AI. One of the most prominent Artificial Intelligence software systems actively used in the healthcare industry is called *IBM Watson*. This technology understands natural language and can answer questions posed by reviewing patient records and other available data to form hypotheses for patients. As a result, finding and capturing patients' medical information, scheduling appointments and processing payments can be done quickly and accurately. Online virtual health assistants and chatbots are of great importance in predicting, fighting, and interpreting pandemics and are coming to the fore in the health sector as well as in other areas.

Artificial Intelligence is being used continuously and actively in the business world. AI is very useful in revealing information on how to improve the service that companies provide to their target audiences or customers. The machine learning algorithms used in this field are adapted to the customer relationship platform and included in the websites, providing fast and instant service to customers with both chatbots and job position automation.

Artificial Intelligence is also essential in the education sector. Setting up an automatic system for entering grades provides educators and academics with a time-efficient system. Defining the needs of students and meeting them in a short time, as well as saving time, provides additional support to those in the education sector. On the other hand, experts working in the field of criminal justice also believe that AI is very useful. For example, AI can be used to screen people who have been arrested for the possibility of offending again in the future, and to store and analyse offenders' records, such as age, offence, activity, and victimisation. Forensic experts claim that AI programmes will reduce human bias in law enforcement and lead to a fairer sentencing system. R Street Institute fellow Caleb Watney notes that the empirically based questions of predictive risk analysis play to the strengths of machine learning, automated reasoning, and other forms of AI. A machine learning policy simulation concluded that such programmes could reduce crime by up to 24.8 per cent without changing incarceration rates or reduce the prison population by up to 42 per cent without increasing crime rates (Watney, 2022). At this point, the analysis of the images and sounds collected as data is used to improve national security. Thus, active, and continuous monitoring of travel records, online purchases and online activity with integrated databases enables authorities to track criminals, terrorists, fugitives, and potential lawbreakers.

As well as ensuring national security, AI can also be used in the transport sector. It plays an active role in areas such as the operation of autonomous vehicles, traffic management, flight tracking and delay management, international traffic control and many other areas.

Advantages, Disadvanteges and Ethical Aspects of AI

Artificial Intelligence has been around for many years and is fast becoming an integral part of many industries. There are many advantages to the use of AI, but there are also some disadvantages and ethical issues that should be taken into consideration.

Artificial Intelligence has many advantages over human intelligence. The biggest advantage is the ability to do things that humans simply cannot do, such as think faster and process information more quickly. Another potential advantage is that machines can be designed to be incredibly precise and accurate in their calculations or data entry. This means that they can perform tasks more efficiently and effectively than a human could. It can therefore continuously learn and improve over time, whereas humans cannot. This means that when new situations arise, the machine can be programmed to adapt quickly without someone having to manually program it each time. This ability to learn and adapt makes it well suited to many real-world applications, such as self-driving cars and personal assistants.

Finally, another advantage of using Artificial Intelligence is that many tasks can be automated, freeing up people to work on other, more complex tasks. In general, there are many advantages to using AI, but there are also some disadvantages.

One drawback is that it relies on complex algorithms that can sometimes be difficult to maintain or change. This can lead to faulty results, which can cause problems in both business and people's lives. Another potential drawback is that machines do not have the capacity for emotional expression or meaningful interaction with others. As a result, they cannot form strong emotional bonds with people in the same way that humans can. Instead, they will simply follow the instructions given to them, which can lead to a robot behaving strangely or even going too far and causing harm or injury to itself or others.

In addition, some of the disadvantages of Artificial Intelligence include its inability to fully understand the information it is processing and to make ethical decisions. Artificial Intelligence cannot understand the complexity of the world around it, although it can perform certain tasks much faster than a human. This leads to many errors and inaccurate results. For this reason, AI has caused much controversy in our society, with people worried that technology will one day take over our jobs and leave us with no jobs at all.

The increased use of AI has led to many ethical issues being raised around its use. Many people fear this vision of the future because they believe that this will negatively affect society by eliminating the need for people to work and take control of our lives. Other issues that have been raised are the fear that AI has the potential to cause widespread job losses in the future. Artificial Intelligence will be able to perform many of the tasks that humans currently perform in the workplace so this could lead to high unemployment rates and a lack of skilled labor around the world. This could have a negative impact on the world economy and cause huge problems for many countries around the world. These are just some of the ethical issues that are associated with the use of Artificial Intelligence in our modern world.

In conclusion, the use of AI has its advantages and disadvantages, but the important thing is to control this technology in order to prevent any harm. Businesses need to make sure that they embrace the power of AI and use it to improve the world. But they also need to make sure that it does not become an uncontrollable monster that destroys everything in its path. Used properly, Artificial Intelligence can help businesses solve the problems and it has the potential to make lives easier in many ways. As long as people embrace the power of technology and use it to make the world a better place, then this technology will not lead to any mishaps because it has many potential benefits when it comes to solving some of the problems in the modern world.

AI and Digital Marketing

An increasing number of businesses are recognizing the importance of AI and digital marketing to their success. AI can help automate tasks and make decisions faster, leading to improved customer service and increased sales. It can also provide valuable insights into consumer behaviour, allowing businesses to make smarter marketing decisions.

Companies are using chatbots to connect with their customers. Chatbots allow businesses to communicate with their customers in real time and provide instant answers to their questions. They can help with customer support, increase sales by directing customers to specific products on your website, and even collect customer feedback to improve customer satisfaction and loyalty.

On the other hand, businesses create personalised marketing campaigns based on customer demographics and preferences. By using customer data to create targeted marketing campaigns, you can generate more interest and sales from your target audience. For example, AI-powered personalisation engines can identify potential new customers with similar characteristics to those already in your database, and then target them with tailored messages and promotions. You can measure and track the performance of your digital advertising more effectively with AI-powered analytics tools. With powerful data analytics tools at your fingertips, businesses can measure and monitor the effectiveness of their online advertising and improve their marketing strategies accordingly.

Companies are using predictive analytics to learn more about their customers' buying habits. Using data from their internal systems and external data providers, such as social media or market research companies, they can build predictive models that help them make more informed business decisions.

Lastly, with the AI they conduct product research more efficiently with the help of machine learning and NLP technologies. Machine learning and natural language processing tools can help them identify trends within customer base and gather valuable insights into their products and their competitors' offerings. From identifying new products and services to predicting future demand for existing offerings, machine learning and NLP technologies can enable to gain a deeper understanding of customers and boost business's bottom line.

How to use Artificial Intelligence in Marketing?

Artificial Intelligence is one of the most promising technologies in marketing. AI can help automate marketing processes, including tasks such as data analysis and targeting. It can also help improve results by suggesting new marketing approaches based on specific data. One of the biggest benefits of using AI

is that it can do things that were previously impossible, or very time-consuming. It can automate routine tasks such as analysing data and sending emails that can be automated using AI tools. This will save the company and its team a lot of time, allowing them to focus on other activities.

By analysing data on customer behaviour and preferences, companies can develop better products and offers and improve the customer experience. Companies can also personalise experiences for their customers based on their individual needs. The result is a higher level of customer satisfaction and differentiation.

AI also increases sales. By using AI, companies can analyse huge amounts of data to find more qualified leads and increase conversions. AI can also help predict buying trends and spot anomalies in data, allowing businesses to prevent potential problems before they happen.

In this way, Artificial Intelligence technology and integrated software programmes play a vital role in market, industry, and businesses.

Method

In this study, companies with an annual revenue of more than $10 million in 2019 and 2020, which actively use Artificial Intelligence in their corporate marketing and are prominent in the industry with various strategies, were selected by random sampling.

In order to analyse the positive feedback of the use of Artificial Intelligence in different areas within the companies, the new applications on the market of the five companies listed below were examined.

The companies mentioned and studied in the research were selected by random sampling. Companies with an annual turnover of more than 10 million were clearly selected as their annual turnover and economic data were publicly available on company websites. (The names and annual revenues of the companies are shown in *Table 1*).

Once the companies have been selected, it will be analysed how they have used Artificial Intelligence over the years to generate more revenue and reach their target customers more easily, as well as the returns and profits they have made. In this way, the aim is to analyse whether the use of AI in marketing and advertising by the companies in the market has positive returns.

Table 1. Annual income values of selected companies.[1]

Name of the Company& Brand	Annual Revenue (2019-2020)
JP Morgan Chase (1)	129,911B USD
Starbucks (2)	23,518B USD
Amazon (3)	386,064B USD
Unilever (*Ben&Jerrys*-Pyremetrics Cases) (4)	58,218B USD
Alibaba (5)	109,48B USD

Findings on Companies' Use of AI

'JP Morgan Chase'

Chase Bank has signed a five-year agreement with *Persado*, a New York-based company that applies AI to marketing creativity, to bring more humanity to its marketing through the use of machine learning in copywriting. In *Persado*'s studies of the brand, after applying AI to the copywriting of the same ad, there was a greater increase in customer performance compared to the ad without Artificial Intelligence. At this stage, *Chase* is the first company to start using AI in its advertising on a large scale. However, the company is also using AI to improve what potential borrowers say in marketing messages, such as email presentations. The company's agreement with *Persado* to use AI aims to make its marketing messages more effective. Artificial Intelligence in online display advertising, direct response mail, transaction, and credit card verification, and especially ad copy, is expected to generate $129.911 million in revenue by 2020.

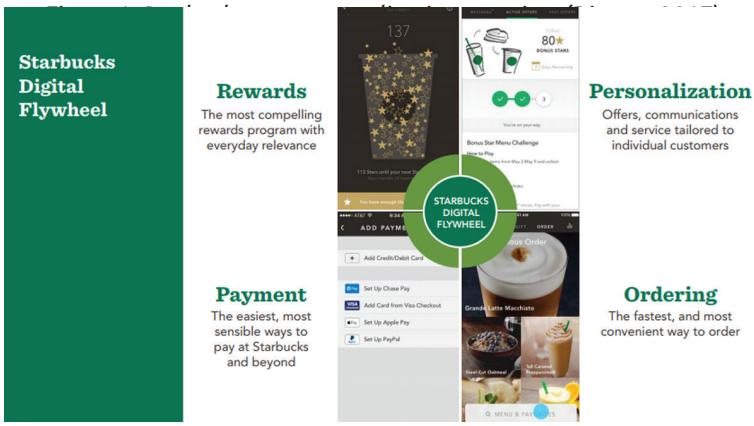
'Starbucks'

As in other industries, *Starbucks* has adapted to changing market conditions by integrating AI into its structure. The company aimed to improve the customer experience and facilitate the organisation of its operations through innovations using Artificial Intelligence. *Starbucks* has launched loyalty card and mobile application campaigns using AI technology to collect and analyse customer data (Richman, 2016). This application experience they provide to customers has also enabled the company to keep regular, error-free purchase records.

Using AI systems, machine learning and predictive analytics, this data helps deliver personalised marketing messages to customers. For example, if the customer is in a location near *Starbucks* stores, suggestions can be made to increase the average order value.

[1] The table has derived from the sources: (Macrotrends, n.d-a, b, c, d; *The New York Times Magazine*, 2020).

One of *Starbucks*' biggest initiatives in this area is the *Deep Brew* project. The *Deep Brew* project uses AI and machine learning to optimise store staffing, manage inventory processes and drive the brand's personalisation engine. This Artificial Intelligence technology can not only help manage the brand's operations and promotions, but also enhance the customer experience.



In addition, *Deep Brew* can be integrated with a range of automatic espresso machines that have the ability to analyze and benefit from sensor hardware. As a result, *Starbucks* can actively control the settings, maintenance, and overall performance of its coffee machines. Thanks to these applications and operational controls that the company has brought to the market, *Starbucks* reached 17.6 million members in the last quarter of 2019, an increase of 15% year-on-year in US membership (Future Stores, 2020). In the coming years, the company aims to explore use cases that make direct contact with customers more effective with *Deep Brew*.

'Amazon'

Amazon is known in the industrial market as a company that goes out of its way to offer personalised product recommendations and provide its customers with the best possible customer experience.

In June 2019, *Amazon* announced the general availability of *Amazon Personalize*, bringing the same machine learning technology from *Amazon.com* to AWS customers for use in their applications (Norris, 2021). The company created the *Amazon Personalize* design, which allows website services to make 50% more specific, good, and accurate recommendations for members. *Amazon* is one of the leading companies that has managed to maximise the online shopping experience for customers, from shopping with Artificial Intelligence technology to automated warehouses that offer fast shipping.

Amazon has even added *Amazon Go* stores that operate in real space, where customers can (ideally) walk in. Walk in, put items in the shopping bag and then walk out the door (March 2021) without paying or using cash or credit cards. Maximising both internal insights and customer experience with Artificial Intelligence technology to avoid compromising on the customer experience, the company reached $386,064 million in revenue by the end of 2020.

'Unilever (Ben&Jerry's-Pyremetrics)'

It is well known that consumer companies are using AI technology to collect data from social media listening, CRM and traditional marketing research. One of these consumer companies, *Unilever*, uses Artificial Intelligence data centres around the world to synthesise insights from a variety of sources. In recent years, while using AI technology and machine learning, *Unilever* discovered a link between breakfast and ice cream, noting that at least 50 publicly available songs have lyrics that mention breakfast and ice cream (Oakes, 2019).

Figure 2. Breakfast cereal ad display created for Ben&Jerry's (Multivu, n.d).

By integrating this understanding into *Ben & Jerrys*, *Unilever* developed many cereal flavoured ice creams for the company (Norris, 2021). After adopting this understanding, the company's sales increased significantly.

Unilever is also making effective use of Artificial Intelligence in its business. The company uses AI and machine learning to reduce the amount of money spent on the recruitment process, making it a time-efficient process. Currently, the company spends more than 100,000 hours a year on the recruitment of more than 30,000 people and processing 1.8 million job applications (Barber, 2022). *Unilever* has partnered with *Pymetrics* to create an online platform that uses a candidate's talent, logic, and reasoning, acquired through a neuroscience game event, to screen applicants. In this way, *Pymetrics* was able to use the data collected to analyse the successful profiles of the company's employees and assess new applicants according to the role they were applying for.

A proprietary technology has been developed, an automatic scanning

system that can analyse a candidate's facial expressions, gestures, choice of words and body language in front of a mobile phone camera. With this technology, the number of applications has doubled to 30,000. It has also been used to recruit non-white candidates, highlighting gender and socio-economic discrimination.

The capabilities of the designed technology saved 50,000 hours and reduced the time spent reviewing and analysing recruitment by 75%. In addition, the acceptance rate of the job offer presented to candidates increased from 64% to 82% and the completion rate of the *Pyremetrics* game by users increased to 98% (Barber, 2022).

'Alibaba'

In the report that *Alibaba* company published at the end of 2021, it was stated that the revenue for 2021 was approximately $109.48 billion and the number of active annual customers was 1.3 billion members. In March 2022, *Alibaba* is listed on the NYSE and has a market capitalisation of approximately $225 billion (Faggella, 2022). Considering this annual revenue, the announced figures are 52.09% higher than the 2020 revenue figures. The reason for this increase is attributed to the company's heavy use of AI technologies and deep machine learning. *Alibaba* uses AI-based optimised recommendation systems for customer experience.

In this way, it generates personalised search suggestions for customers on the website and mobile application. By using these suggestions, they have achieved their goal of increasing sales.

The company also uses cloud AI to support variable sales and traffic volumes. For the annual "Double 11" global shopping festival, the company uses cloud AI to reduce the computational load and increase product sales (Faggella, 2022).

On its way to becoming an AI giant in online shopping, *Alibaba* has opened a physical "FashionAI" store in Hong Kong that uses AI to modernise and innovate the modern retail experience. *Alibaba* has equipped its stores with smart clothing tags that detect when the product is touched, and smart mirrors that display clothing information and suggest coordinating items (Norris, 2021).

The company's goal for the next few years is to go one step further and create a virtual wardrobe application that will allow customers with physical stores to see the clothes they want to try on and integrate this application into their store systems. Looking at the current market, *Alibaba* is a brand that is several steps ahead of its competitors when it comes to both customer experience and meeting consumer expectations. According to a survey by the National Retail Federation, 80% of shoppers say retail technology and innovation has improved their online shopping experience, while 66% say the same

for physical retail (National Retail Federation, 2019).

General Findings of the Study

In the article, 5 leading companies in today's industry, with annual revenues of over 10 million and actively using AI and deep machine learning technology in their marketing strategies, were randomly selected. These brands developed marketing strategies by using AI technology to better understand their target audiences and reaped the benefits of AI technology with increased revenue at the end of the year. *JPMorgan Chase* was able to increase its revenue to USD 129,911 million in 2020 thanks to its agreement with *Persado*. In addition, *Starbucks*, one of the leading brands in providing a personalised experience to customers, reached 17.6 million members at the end of 2019 and increased its annual membership rate by 15% in the last quarter of 2020. On the other hand, the *Amazon* brand, famous for its customer experience, has managed to deliver 50% more specific and accurate products and advertisements to its customers with the *Amazon Personalise* design, created using AI technology. With the strategies they have built on Artificial Intelligence, the company's revenue has reached USD 386,064 million at the end of 2020. It managed to sell frozen flakes for breakfast ice cream with increasing momentum, which it produced at the customer's request using AI for its advertising strategy. The company also saved time and money by using the technology in its recruitment processes. Finally, *Alibaba*, which has moved to the top of the market in terms of global shipping, achieved a 52.09% increase in revenue from 2020 to 2022 with its recommendation systems based on AI and integrated with deep machine learning. At the end of 2021, the company said its 2021 revenue was approximately $109.48 billion, with 1.3 billion annual active customers. As of March 2022, *Alibaba* is listed on the NYSE and has a market capitalisation of approximately $225 billion.

Conclusion

The way businesses operate is being transformed by disruptive technologies such as the big data analytics, blockchain and AI. Artificial Intelligence is the most recent technology disruptor with huge potential to transform marketing. Marketers around the world are trying to find the most appropriate AI solutions for their marketing roles (Verma et. al, 2021).

As technology continues to evolve, it is becoming easier and faster for companies to get to know their target audiences. This knowledge has enabled companies to offer their products and services to consumers in a more personalised and accessible way. As people's lives have become more needs-based over time, the demand for such products and services has grown. Moreover, companies have established AI research and development departments to enhance the success they have obtained through AI. As a result, the use of Artificial Intelligence today covers a wide range of areas and strategies.

To predict volatile market trends and heterogeneous customer preferences, predictive analytics is often used in marketing. For instance, the clothing retailer *Gap* is using it to predict fast-fashion trends in order to better meet the needs of its consumers, and *Amazon* is using it to predict the future orders of its consumers (Huang, 2021).

Previous studies have shown several potential uses of reasoning AI for market analysis. Automatic text analysis has applications in consumer research (Humphreys & Wang, 2018), marketing insights (Berger et al., 2019), and the analysis of consumer deliberative heuristics (Dzyabura & Hauser, 2011). Machine learning algorithms and dictionary-based text classification can be used to analyze different social media data sets (Hartmann et al., 2019). In addition, big data marketing analytics has now become a mainstream approach for the generation of marketing insights (Berger et al., 2019).

Looking at the figures given and the revenues that companies have achieved after usign AI in marketing, it has been observed that companies that have adapted to the concepts of AI and deep machine learning have a more active and superior place in the market. At this point, it can be concluded that Artificial Intelligence technology brings positive and effective results to companies.

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Ethics committee approval: There is no need for ethics committee approval.
Conflict of interest: There are no conflicts of interest to declare.
Financial support: No funding was received for this study.

Etik Kurul Onayı: Etik kurul onayına ihtiyaç bulunmamaktadır.
Çıkar çatışması: Çıkar çatışması bulunmamaktadır.
Finansal destek: Finansal destek bulunmamaktadır.