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Application of Artificial Intelligence in Marketing Strategy: A Case Study in the Retail Industry

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ABSTRACT. The retail industry has undergone significant transformations due to integrating Artificial Intelligence (AI) in marketing strategies. AI's ability to process vast amounts of data has revolutionized how businesses approach customer engagement, product management, and operational efficiency. This study explores how AI has enhanced decision-making in retail, particularly in optimizing dynamic pricing, product recommendations, and personalized marketing strategies. Retailers can analyze consumer behavior through AI-powered algorithms, offering targeted promotions and tailored product suggestions. This personalization increases customer satisfaction and fosters long-term loyalty. The study also highlights the role of AI in streamlining supply chain operations by predicting product demand, thus reducing the risk of stock shortages or excess inventory. The case study focuses on several large retail companies that have successfully implemented AI in their marketing strategies, resulting in improved customer experiences and significant cost savings. However, while AI offers numerous advantages, its implementation faces challenges such as technological investment, data management, and ethical concerns regarding customer privacy. These challenges necessitate a strong infrastructure and responsible data governance to ensure success. The findings of this research provide valuable insights into the practical applications of AI in the retail industry and its potential to offer a competitive edge. In conclusion, AI continues to play a pivotal role in enhancing marketing strategies, making retail operations more efficient, and improving customer satisfaction.

1. Introduction

The retail industry has been one of the sectors most impacted by the digital revolution, with technology becoming the backbone of daily operations. Among the innovations, Artificial Intelligence (AI) has emerged as a revolutionary technology that has made a significant impact in the industry. AI enables retailers to optimize business processes that previously relied on

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human resources. This includes automating operational tasks, making data-driven decisions, and enhancing customer interactions through in-depth data analysis. For example, the use of machine learning to process customer data allows retailers to gain deeper insights into consumer purchasing behavior. The application of Artificial Intelligence (AI) in marketing strategies in the retail industry is becoming increasingly significant. AI has opened up many new opportunities in marketing research, strategies, and actions that have a significant impact on customer experiences and relationships. The application of AI in the retail industry began with the development of artificial neural networks and progressed through deep learning and machine learning, allowing companies to track customer needs in real-time. When a new technology begins to develop and reaches a stage where it is successfully integrated into society, quickly defining and addressing the ethical and legal challenges of the technology becomes a priority. This is also true for artificial intelligence (AI). In the mid-2010s, before deep neural network technology in AI began to impact across applications and industries [1].

Furthermore, AI has succeeded in simplifying the decision-making process for retail companies. This technology provides the ability to analyze large amounts of data in a short time, find hidden patterns, and make accurate predictions about market trends. With AI, companies can respond to changing customer needs more quickly and accurately, allowing them to stay competitive in a dynamic market. The implementation of AI in retail is not only limited to operational optimization, but also directly contributes to improving customer experience and significant cost savings. AI plays a vital role in product management in the retail industry. This technology enables more effective product development and management, increasing operational efficiency.

One of the key areas where AI is making a big impact in the retail industry is through the personalization of the shopping experience. AI technology, with its ability to process big data, can analyze the individual preferences of each customer. For example, a product recommendation system powered by machine learning algorithms can offer products tailored to the needs and desires of each customer. This not only increases customer satisfaction but also increases the chances of sales conversion. This more personalized personal branding is one of the main keys to maintaining customer loyalty in the long term.

In addition to personalization, AI also plays a vital role in dynamic pricing in the retail sector. Using real-time data such as customer behavior, price competition, and market trends, AI can automatically determine product prices. This dynamic pricing not only optimizes the company's profit margin but also adjusts prices based on fluctuating market demand. For example, when demand increases, AI can increase prices to maximize profits, while in low demand situations, AI can decrease prices to attract more buyers. AI is used in pricing management to quickly evaluate data and solve pricing problems automatically. This technology

allows merchants to set optimal prices based on factors such as demand and logistics. AI is used in place management to understand customer behavior and optimize product distribution, helping to determine the most effective locations for product placement.

Furthermore, AI plays a vital role in supply chain optimization in the retail industry. With its predictive capabilities, AI can help retailers accurately predict product demand, thereby reducing the risk of stockouts or excess stock. This not only reduces storage costs but also ensures that the products consumers need are always available on time. This supply chain optimization is crucial in improving the operational efficiency of retail companies, especially amidst fierce market competition.

AI technology also allows retailers to identify and target customers more effectively through smarter marketing campaigns. By analyzing customer behavior data, AI can predict what products each customer segment might be interested in, as well as when the best time to run a promotion is. This personalized marketing strategy not only increases the effectiveness of marketing campaigns but also reduces inefficient marketing costs. With a data-driven approach, companies can ensure that every marketing effort has a higher chance of success.

In the context of customer relations, AI can be used to improve customer service through chatbots and virtual assistants. This technology allows retailers to provide instant and relevant responses to customer inquiries, thereby increasing customer satisfaction. Additionally, AI-powered chatbots are able to learn from previous interactions and provide more accurate answers over time. This reduces the burden on human customer service, allowing teams to focus on more complex tasks.

Although AI offers significant benefits, challenges remain in its implementation, especially related to technology investment and data management. The implementation of AI requires a strong technological infrastructure and well-organized data. On the other hand, companies must also ensure that the implementation of AI does not ignore ethical aspects, such as protecting customer privacy. The success of implementing AI in retail is not only determined by the technology itself, but also by the company's ability to manage data responsibly.

Amidst the rapid development of AI, it is important for the retail industry to continue to adapt to this technology in order to remain competitive. Companies that do not leverage AI in their marketing strategies risk being left behind by competitors who adapt faster. Therefore, companies need to understand the potential of AI in various aspects of business, from inventory management to customer engagement. The right application of AI can provide a sustainable competitive advantage for retail companies.

This article will explain in more depth how the application of AI has successfully improved marketing strategies in the retail industry, by reviewing case studies from several large companies. With a better understanding of the role of AI in marketing, it is hoped that retail

companies can optimize this technology to achieve their business goals more effectively and efficiently. AI enables more targeted marketing by leveraging customer data to develop more effective promotional campaigns. This technology helps identify the right market segments and tailor promotional messages to be more relevant. AI facilitates deeper analysis of consumer behavior. Data collected through various channels allows AI to identify purchasing patterns and customer preferences, which are then used to develop more effective marketing strategies. The application of AI in CRM enhances the ability of businesses to interact with customers in a more personal way. This technology helps in managing customer relationships more efficiently, enabling personalization of services based on customer preferences. AI-powered chatbots have become an essential tool in customer service. They enable faster and more efficient interactions with customers, answering questions, and providing product recommendations based on customer data. In e-commerce, AI is used to analyze sales data and customer behavior. This technology helps in improving the online shopping experience by providing more relevant product recommendations and personalizing customer interactions.

A. Background and Problem Formulation

Marketing is an important aspect in the business world, especially in the retail industry. In today's digital era, many companies are competing to utilize technology to increase effectiveness and efficiency in marketing. One of the technologies that is growing rapidly is Artificial Intelligence (AI). AI is a technology that is capable of performing tasks that usually require human intelligence, such as natural language processing, image recognition, and data-driven decision making.

The application of AI in marketing strategies in the retail industry can help companies improve efficiency and effectiveness in data analysis, decision making, and personalization of services to customers. However, although the application of AI has many benefits, several challenges must be faced, such as data security and technology development costs.

Marketing is one of the most important things in the business world, especially in the retail industry. Along with the rapid development of technology, the use of technology in marketing has become very important for companies to compete in an increasingly competitive market. One of the technologies that is increasingly popular in marketing is Artificial Intelligence (AI). AI can help companies to increase effectiveness and efficiency in analyzing data, making decisions, and providing more personalized services to customers. According to a report from Markets and Markets, the AI market in the retail industry is expected to grow from USD 994 million in 2019 to USD 5,034 billion in 2024, with a CAGR of 38.3% [2]. This shows that the use of AI in the retail industry is becoming increasingly popular and increasing.

However, although the use of AI has many benefits, several challenges must be faced in its implementation. The main challenges faced are data security and technology development

costs [3]. Customer data is a very valuable asset for companies, and its security must be maintained properly. In addition, the high cost of developing AI technology is an obstacle for many companies. Therefore, this study aims to analyze the urgency, objectives, and targeted outcomes of implementing AI in marketing strategies in the retail industry [4]. The purpose of this study is to provide a deeper understanding of the benefits and challenges of using AI in marketing strategies in the retail industry and to provide recommendations regarding the implementation of AI in marketing strategies for companies in the retail industry.

The formulation of the problem to be studied is how the application of Artificial Intelligence in marketing strategies can help the retail industry in improving customer experience, business efficiency, and sales results. In addition, the research will also focus on the use of AI in personalizing digital marketing communications, customer segmentation, customer experience management, smart product development, optimization of promotional strategies, and integration of AI in retail supply chain management.

B. Problem Solving Approach

In this study, qualitative and quantitative approaches will be used to collect data and analyze research results. The qualitative approach is used to gain an in-depth understanding of customer experiences and perceptions of personalized services implemented using AI in marketing strategies. The quantitative approach is used to collect and analyze quantitative data from companies in the retail industry that have implemented AI in marketing strategies [5].

The data collection methods used in this study were in-depth interviews with customers, direct observation, and questionnaires. In-depth interviews and direct observation were conducted to obtain qualitative data on customer experiences and perceptions of personalized services implemented using AI in marketing strategies. Questionnaires were used to collect quantitative data from companies in the retail industry that have implemented AI in marketing strategies [6].

The data obtained from this study will be analyzed using qualitative and quantitative analysis methods. Qualitative analysis will be conducted to interpret qualitative data from in-depth interviews and direct observations. Quantitative analysis will be conducted to process quantitative data from questionnaires and analyze the relationship between existing variables [7].

C. State of the Art and Novelty

State of the artin this study is the use of AI in the retail and marketing industry, which is growing rapidly and becoming an increasingly popular trend in recent years. In recent literature, the use of AI is identified as a way to improve customer experience, optimize marketing strategies, and increase business efficiency in the retail sector.

The novelty of this research is the focus on the application of AI in marketing strategies for the retail industry, with an emphasis on case studies in retail companies. Several journals

discuss innovative customer segmentation models based on AI, optimization of promotional strategies based on customer value using AI, and the application of AI in personalizing digital marketing communications. In addition, several journals also discuss the use of AI in customer experience management and marketing functions in general that are relevant to the research. Research conducted by [8] discusses the application of AI in the retail industry with a focus on improving customer experience and business efficiency. Research conducted by [9] conducts a bibliometric analysis to analyze trends and characteristics of research on the application of AI in the retail industry. Research conducted by [10] discusses the use of AI in personalizing digital marketing communications with results showing that AI can increase customer engagement and satisfaction.

Research conducted by [11] developed an innovative AI-based customer segmentation model for the online retail industry. Research conducted by [12] conducted a systematic review of the use of AI in customer experience management and provided recommendations for further research. Research conducted by [13] conducted a literature review of the role of AI in marketing functions and showed that AI can help companies in decision making and personalizing customer service. Research conducted by [1] discussed smart product development and its role in enhancing customer experience, as well as using AI to optimize smart product performance. Research conducted by [14] developed an AI model to optimize promotional strategies based on customer value. Research conducted by [15] [16] discussed the integration of AI in retail supply chain management and provided a research agenda for further research.

Based on the previous research presented above, it can be concluded that the application of artificial intelligence (AI) in the retail industry is an increasingly popular research topic and attracts the attention of academics and practitioners. There are various aspects of marketing strategies in the retail industry that can be improved using AI, such as communication personalization, customer segmentation, customer experience, supply chain management, and promotional strategies. In addition, the literature review conducted by several journals also provides recommendations for further research, so that it can be used as a guide for researchers who want to develop research in this field.

2. Literature Review

Artificial Intelligence (AI) in marketing strategies in the retail industry is currently very important. AI has opened up new avenues in marketing research, strategy, and actions, having a major impact on customer relationships and experiences. Artificial Intelligence (AI) has become a major topic in various studies that focus on the application of technology in marketing strategies. As a technology that plays a role in analyzing big data, AI enables companies to better understand customer behavior by identifying hidden patterns that cannot be found with

traditional methods [3]. The application of AI in marketing provides the ability to accelerate decision-making with higher accuracy.

One of the major contributions of AI in the retail industry is through product recommendation systems. These systems utilize machine learning algorithms to predict products that customers will like based on their purchase history and online behavior patterns [17]. With recommendation systems, companies can increase sales because customers receive product suggestions that suit their needs.

In addition, dynamic pricing has become one of the most effective applications of AI in retail. By using algorithms that can adjust prices based on market demand and product availability in real time, retailers can maximize profits and respond quickly to market changes [18]. Dynamic pricing also takes into account competitor prices to maintain competitiveness in the market.

The application of AI in social media sentiment analysis is a very useful tool for companies in understanding customer perceptions of their brands and products. With sentiment analysis, companies can quickly identify public reactions to marketing campaigns or new product launches [14]. This information is very useful in formulating more effective marketing strategies that are responsive to changes in consumer behavior.

The history of AI applications began with the development of neural networks, followed by advances in deep learning and machine learning. In the retail industry, AI has been used to process and analyze large amounts of data, allowing businesses to track customer needs in real-time. AI also helps in improving personalization in digital marketing. Through customer behavior analysis, AI can generate more segmented and relevant marketing campaigns for consumers, ultimately increasing sales conversions [9]. By understanding individual preferences, AI can send the right message to the right customer at the right time.

However, several studies have also highlighted ethical challenges in the application of AI, especially in terms of customer data privacy. Data collected by AI systems often includes sensitive personal information, so companies must be careful in managing and protecting this data [8]. Strict privacy policies must be implemented to prevent data misuse.

In addition to product recommendations and pricing, AI has been applied in retail inventory management. This technology allows retailers to predict product demand more accurately, reduce the risk of stockouts or overstocks, and improve supply chain efficiency [5]. This can save operational costs and increase customer satisfaction because products are always available on demand. AI plays a vital role in product management in the retail industry. This technology enables more effective product development and management, especially in terms of product innovation and production processes.

Several studies also note that AI can speed up the customer segmentation process. Using machine learning, AI can identify more specific customer segments based on variables such as demographics, location, and purchasing behavior [5]. This more accurate segmentation allows companies to target customer groups with more relevant campaigns.

Other studies have found that AI plays a role in optimizing omnichannel strategies. This technology can integrate various sales platforms, such as online, physical stores, and mobile applications, providing a seamless experience for customers [19]. With good integration, customers can feel uniformity in their interactions with brands, both offline and online.

The use of AI-based chatbots in customer service has also shown positive results. Chatbots are able to provide quick responses to customer inquiries and handle simple requests automatically, thereby increasing customer service efficiency [13]. Over time, chatbots can also learn customer inquiries and provide more accurate answers.

The application of AI in product development is also gaining attention. By analyzing consumer preferences and market trends, AI can help companies design products that better suit customer needs [12]. This allows companies to innovate faster and be responsive to changes in consumer preferences.

3. Method

This study uses a qualitative method with a case study approach to deeply understand the application of Artificial Intelligence (AI) in marketing strategies in the retail industry. The qualitative approach was chosen because it allows researchers to explore complex phenomena in more detail and in a specific context [6]. In this context, case studies provide an appropriate framework for examining the application of AI through the direct experiences of industry players.

In-depth interviews with marketing managers from several large retail companies were the main source of primary data in this study. The interviews were conducted in a semi-structured manner, allowing flexibility in asking questions and obtaining more in-depth information from respondents [4]. Each interview lasted for 60-90 minutes, where topics of discussion included AI implementation, challenges faced, and its impact on marketing efficiency and customer experience.

The selection of respondents was done purposively, with the main criteria being managers who have direct experience in managing AI-based marketing strategies. This purposive sampling approach was used to ensure that the respondents involved have relevant and in-depth insights into the research topic [20]. The selected retail companies vary in size and market segment, providing a broad perspective on the application of AI in the retail industry.

Secondary data was obtained from annual reports of retail companies that have adopted AI in their operations. These reports contain performance metrics that include sales increases,

operational efficiencies, and cost savings associated with AI implementation [21]. This data is important to confirm the findings from the interviews and provide a quantitative view of the impact of AI implementation.

In addition to company reports, this study also uses relevant scientific literature to support the analysis. Previous studies on the application of AI in retail and marketing were reviewed to provide a strong theoretical framework for this study [8]. This literature was also used to compare the findings of the case study with trends and results that have been reported in previous studies.

Data analysis was conducted using thematic coding method. Data obtained from interviews were broken down into key themes such as the impact of AI on marketing efficiency, customer personalization, and challenges in implementation [22]. This technique helps in identifying patterns that emerge from the data, making it easier for researchers to draw more comprehensive conclusions.

Data triangulation was conducted by comparing results from various sources, namely interviews, company reports, and academic literature. This triangulation aims to increase the validity and reliability of research results [7]. If inconsistencies are found between primary and secondary data, researchers conduct further investigations to understand the context that might explain the differences.

The use of case studies as a research approach allows for in-depth exploration in the real context of AI implementation in retail companies. This case study provides an understanding of how AI is practically applied in everyday marketing operations and how companies respond to challenges that arise during implementation [23]. This study combines perspectives from several companies to provide a broader picture of AI implementation trends.

The qualitative approach used in this study also opens up space for a more holistic understanding of the context and conditions in the field. Through in-depth interviews and analysis of company reports, researchers can gain insights that would not be possible through more structured quantitative methods. This provides flexibility in capturing the nuances and dynamics of AI implementation in various retail companies [24].

The overall research methodology is designed to provide in-depth and holistic insights into how AI is integrated into marketing strategies in the retail industry, as well as its impact on operational efficiency and customer experience.

Using a qualitative approach and case studies, this study seeks to understand the context of AI implementation in the retail industry in depth. This approach allows researchers to gain insights that cannot be obtained from more structured quantitative methods [24]. The results of this study will provide a clearer picture of how AI is adopted in the field and its impact on marketing strategies.

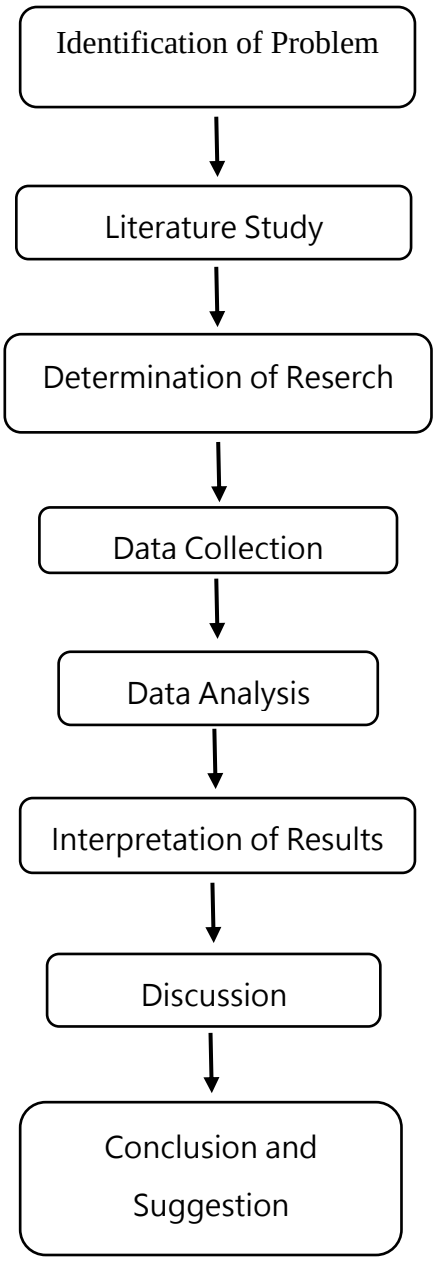

Figure 1. Research Model

The research flowchart for the topic "Implementation of Artificial Intelligence in Marketing Strategy: Case Study in the Retail Industry" can consist of the following steps or stages:

1) Problem identification: The initial stage in research is to identify the problem to be studied. At this stage, the researcher will determine the focus of the research and the research questions to be answered.
2) Literature study: After the problem is determined, the next stage is to conduct a literature study related to the research topic. This literature study will provide a better

understanding of the topic and help researchers determine the theoretical framework for the study.

3) Determining the research method: The next stage is to determine the research method that will be used to answer the research questions. Methods that can be used in this research include descriptive analysis, surveys, and interviews.
4) Data collection: Once the research method is determined, the next stage is data collection. Data can be collected through surveys, interviews, observations, or analysis of existing data.
5) Data analysis: After the data is collected, the next stage is data analysis. Data analysis can be done using statistical techniques and data mining techniques.
6) Interpretation of results: After the data analysis is completed, the next stage is the interpretation of the results. The results obtained from the data analysis will be interpreted to answer the research questions.
7) Discussion: The discussion stage is carried out to interpret the research results and conclude the research findings. At this stage, the researcher will compare the research results with existing literature.
8) Conclusion and suggestions: The final stage in the research is to compile conclusions and suggestions. At this stage, the researcher will conclude the research results and provide suggestions for further research development or application in the retail industry.

a) Definition of Case Study

According to [6], a case study is an in-depth exploration of a limited system or a particular case. Case studies can be several cases with in-depth data collection from informants in various aspects. Meanwhile, [25] explains that a case study is a comprehensive description of various aspects of a particular individual, group, organization, program, or social situation. This case study research aims to obtain as much data as possible about the subject being studied.

b) Objects and Subjects of Research

The object of this research is marketing communication, especially in determining promotional strategies. The subjects of the research include informants involved in determining promotional strategies in the artificial intelligence-based marketplace at Tokopedia, as well as partners who use the Tokopedia application. Informants play an important role in research, helping researchers obtain data quickly and accurately and providing a deeper understanding of the research context.

c) Data Collection Technique

Data were collected through purposive sampling techniques, where individuals selected as informants met the research criteria. Data sources were obtained from informants, places, events, and supporting documents. Data collection methods used included in-depth interviews, Focus

Group Discussions (FGD), observations, and document analysis from primary and secondary sources.

d) Data Analysis Techniques

According to [26], data analysis in qualitative research is carried out continuously until the data reaches saturation point. [27] added that qualitative data analysis is a systematic process carried out simultaneously with data collection. This analysis involves organizing data, breaking it down into units, synthesizing data, and compiling patterns to draw conclusions that can be conveyed to others.

e) Research Road Map

This research is a continuation of the previous study on the Online Mass Media Business Industry Model in the Artificial Intelligence era. In 2024, this research is directed to develop an artificial intelligence-based marketplace business industry model in global marketing.

4. Results and Discussion

Tokopedia is one of the largest marketplaces in Indonesia founded by William Tanuwijaya and Leontinus Alpha Edison. Tokopedia's head office is located on the 52nd floor, Tokopedia Tower, Ciputra World 2, Jalan Prof. Dr. Satrio Kav. 11, RT 03/RW 03, Karet Semanggi, South Jakarta. Tokopedia was officially launched on February 6, 2009, and since then, the company has grown rapidly, becoming one of the leading marketplaces in Indonesia.

In 2024, Tokopedia expanded its services by introducing various innovative financial products, such as digital wallets, business capital loans, affordable investments, virtual credit cards, and credit scoring. These products aim to help business people, especially Micro, Small, and Medium Enterprises (MSMEs), in accessing easier and more affordable financial services. Tokopedia continues to innovate and play an important role in supporting the growth of the digital economy in Indonesia, especially by providing a platform for MSMEs to grow and reach a wider market.

In 2023, Tokopedia launched a special application for Tokopedia Partners which aims to enable micro-businesses to market their digital products on the Tokopedia platform. This step is part of Tokopedia's efforts to encourage the growth of online businesses in Indonesia. Thanks to these various innovations and efforts, Tokopedia won the Marketeers of The Year award in 2024. In 2023, Tokopedia again received the Best Company in Consumer Industry award from the Indonesia Digital Economy Award. In addition, in 2018, Tokopedia won a series of awards that brought them to the top of the Apple Store, replacing Facebook, WhatsApp, and Instagram.

a) Tokopedia's Vision and Mission

Tokopedia's initial vision was to build a better Indonesia through the internet, with a commitment to creating an ecosystem where everyone can start and find anything. Tokopedia is committed to continuing to develop this ecosystem to be even bigger.

Tokopedia's mission is to achieve digital economic equality, by providing equal opportunities to all business actors so they can start and find whatever they need. Through transactions without distance barriers, Tokopedia helps create new opportunities and supports sustainable development for business actors.

b) Collaboration with Batam City Government

In 2024, Tokopedia in collaboration with the Batam City Government launched Laman Kota, a special page on Tokopedia that accommodates local Batam SME products. This aims to help local business actors in Batam and its surroundings in increasing sales and developing their online businesses for free. Batam was chosen because it is one of the cities full of potential business actors who own local brands. Through this page, business actors in Batam get support to market their products digitally, which in turn supports the growth of the city's digital creative economy. With MSMEs contributing 60% of Batam's economy, this collaboration is an important strategy to help promote local products and increase regional economic growth.

c) Achievements in 2024

In 2024, Tokopedia has reached 99% of sub-districts throughout Indonesia, with more than 100 million active users and 11 million sellers, of which 86.5% are new business actors. Tokopedia has made a significant contribution to the Indonesian economy with 90% of its sellers being micro-businesses. During the pandemic, Tokopedia has succeeded in helping MSMEs survive and even thrive through digital adoption. Around 76.4% of sellers found it easy to manage their businesses on this platform, with a significant increase in sales. In 2024, sales on Tokopedia increased by 133%, with 7 out of 10 business actors reporting an increase in the number of items sold along with the shift to online sales methods. Tokopedia also plays a major role in driving financial inclusion in Indonesia, where digital payment methods such as e-wallets and mobile/internet banking have become the main choices for consumers during the pandemic. Based on initial observations from 6 MSME owners in Batam City, the reasons for joining as partners on Tokopedia were:

Table 1 Data on Interest of MSME Business Actors in Becoming Tokopedia Partners (April – August 2024)

No	Information	MSME Partners						Total	%
		1	2	3	4	5	6		
1	Tokopedia's appearance is easy to understand	3	4	5	3	4	4	**23**	**19%**
2	Various features available	4	4	5	3	4	5	**25**	**21%**
3	Many courier options available	3	4	3	5	3	4	**22**	**18.5%**
4	Fast balance withdrawal process	4	3	4	3	3	4	**21**	**18%**
5	Creative and attractive promotions	5	4	5	4	5	5	**28**	**23.5%**
Amount								**119**	**100%**

Based on Table 1, it can be seen that creative and attractive promotions are the main reason for business people to join Tokopedia, with the highest percentage of 23.5%. This confirms that promotions play an important role in attracting consumer attention and interest. Effective promotions are able to target the market precisely, which ultimately has an impact on increasing sales.

In the business world, the right promotion is not only about providing information, but also influencing consumer behavior to be interested in buying the products offered. Promotion is one of the main strategies, both for small and large businesses, in introducing their products or services to a wider market. With targeted promotion, business actors can increase sales volume which will certainly have a positive impact on the company's operations and sustainability.

However, it is important to note that effective promotions often require a large budget. However, targeted promotions can have a big impact on achieving marketing goals and increasing company profits. Therefore, it is very important for business actors to design the right promotional strategy to maximize its impact on increasing market demand and company profits.

With a good promotional strategy, companies can more easily reach the right consumers, drive customer engagement, and create long-term loyalty. It also plays a vital role in building strong brand awareness, which ultimately supports sustainable business growth and success.

d) The Role of AI in Promotion

Along with the development of technology and changes in the business world, Artificial Intelligence (AI) has become an important component in digital marketing strategies. AI is a branch of computer science that develops machine intelligence that can imitate human cognitive abilities, such as learning, recognizing voices, faces, and even solving complex problems. Currently, AI plays a significant role in various fields, including digital product promotion and marketing.

Deep Learning is one of the methods used in AI, which allows the system to learn patterns from big data such as photos, text, voice, and user track records (cookies) on the internet. This method allows platforms such as Tokopedia to analyze customer habits and preferences to create more targeted and personalized promotions. For example, suppose a customer often searches for sportswear. In that case, deep learning can help display relevant ads, such as pants, t-shirts, shoes, or other sports accessories, when the customer re-accesses the internet.

Integrating big data into AI systems allows for the collection of detailed transaction data, which includes consumer behavior when they access websites. This data is then analyzed using data mining, where special algorithms such as association algorithms are used to find relationships between items that consumers frequently buy together. This information is crucial for companies in creating effective and relevant advertising campaigns for customers. For

example, if a customer frequently buys t-shirts along with sneakers, a programmer can create a promotional strategy that combines the two products in one ad.

In addition, AI can improve marketing targets through paid ads that appear on websites that customers frequently visit based on their preferences. Tokopedia, by utilizing AI and big data, can maximize marketing strategies that target certain customer segments in a more specific and effective way.

However, not all marketplaces use this method because the infrastructure needed to process big data is quite large and expensive. Drone Emprit, for example, is a consulting company that observes people's preferences via the internet, and shows that the use of big data requires servers with large storage capacity. Large companies like Tokopedia must make significant investments, even reaching billions of rupiah, to rent big data servers to support their AI systems. With big data analysis integrated with AI, Tokopedia is able to create a more targeted digital catalog-based promotional strategy. Stored sales data and customer digital footprints can be used to identify customer segments and their purchasing patterns. This allows Tokopedia to offer a more personalized and relevant shopping experience, thereby increasing transaction and sales opportunities.

5. Conclusions

Artificial intelligence (AI) has great benefits and provides many advantages for humans in various aspects of life, including in business promotion strategies. AI allows processing large amounts of data in a short time, which speeds up work and reduces errors. AI also has fast learning capabilities, and can provide data on a large scale, supporting businesses in more effective decision making.

Conflicts of Interest: The authors declare that there are no conflicts of interest regarding the publication of this paper.

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