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International Journal of Social Science and Business
Volume 8, Number 1, 2024, pp. 190-197
P-ISSN: 2614-6533 E-ISSN: 2549-6409
Open Access: https://doi.org/10.23887/ijssb.v8i1.68941

The Strategy for Developing a Marketplace Promotion Model Based on Artificial Intelligence (AI) to Improve Online Marketing in Indonesia

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ARTICLE INFO

Article history:
Received October 09, 2023
Revised October 14, 2023
Accepted February 16, 2024
Available online February 25, 2024

Kata Kunci:
Strategi Pengembangan, Promosi Marketplace, *Artificial Intelligence (AI), Pemasaran Online*

Keywords:
Development Strategy, Marketplace Promotion, Artificial Intelligence (AI), Online Marketing

ABSTRAK

Perkembangan pesat Kecerdasan Buatan (AI) telah mengubah cara interaksi manusia dan aktivitas sehari-hari dilakukan. Keterbatasan interaksi langsung manusia telah mendorong pengembangan AI, yang meningkatkan efisiensi operasional organisasi. AI telah merambah berbagai industri, terutama sektor perdagangan digital, di mana AI menjadi alat berharga untuk meningkatkan promosi dan penjualan. Dalam menghadapi tantangan ini, perusahaan perlu bijaksana dalam mengintegrasikan AI ke dalam operasi mereka untuk memberikan manfaat seimbang bagi pelanggan dan bisnis mereka. Penelitian ini fokus pada studi kasus Tokopedia, sebuah marketplace *online yang berkembang pesat di Indonesia. Metode penelitian yang digunakan adalah kualitatif dengan pendekatan studi kasus, memungkinkan analisis mendalam terhadap fenomena sosial yang kompleks. Data internal dan eksternal dikumpulkan melalui wawancara mendalam, observasi nonpartisipatif, dan analisis dokumen. Hasil penelitian menunjukkan bahwa model promosi berbasis AI secara signifikan meningkatkan pembelian produk. Studi ini mengungkap bagaimana Tokopedia berhasil memanfaatkan teknologi AI untuk meningkatkan daya tarik produk, personalisasi pengalaman pelanggan, dan akhirnya meningkatkan penjualan. Dalam pasar digital yang kompetitif, strategi promosi berbasis AI menjadi krusial untuk kesuksesan. Implikasi dari penelitian ini menunjukkan bahwa AI memiliki potensi besar untuk mengubah operasi bisnis di pasar digital, dan perusahaan yang mampu mengoptimalkan AI memiliki peluang besar untuk meningkatkan penjualan dan mencapai kesuksesan di era yang semakin kompetitif.*

ABSTRACT

The rapid development of Artificial Intelligence (AI) has changed the way human interaction and daily activities are carried out. The limitations of direct human interaction have driven the development of AI, which improves the operational efficiency of organizations. AI has penetrated various industries, especially the digital commerce sector, where AI has become a valuable tool to increase promotion and sales. In the face of these challenges, companies need to wisely integrate AI into their operations to deliver balanced benefits to their customers and businesses. This research focuses on the case study of Tokopedia, a fast-growing online marketplace in Indonesia. The research method used is qualitative with a case study approach, allowing in-depth analysis of complex social phenomena. Internal and external data were collected through in-depth interviews, nonparticipatory observation, and document analysis. The results showed that the AI-based promotion model significantly increased product purchases. This study reveals how Tokopedia successfully leveraged AI technology to increase product appeal, personalize customer experience, and ultimately increase sales. In a competitive digital market, AI-based promotion strategies are crucial to success. The implications of this research show that AI has great potential to transform business operations in the digital marketplace, and companies that are able to optimize AI have a great opportunity to increase sales and achieve success in an increasingly competitive era.

1. INTRODUCTION

In the increasingly advanced digital era, online commerce, also known as the marketplace, has become one of the most critical components of Indonesia's business ecosystem (Almunawar & Anshari, 2022; Aminullah et al., 2022). This phenomenon is unavoidable because it has enabled customers to conduct

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a variety of transactions online in an effortless, convenient, and efficient manner. The success of marketplaces in bringing together sellers and buyers has altered how businesses operate and presents enormous opportunities for economic expansion (Kathan et al., 2016; Weinstein, 2020). Nonetheless, the growth of the market in Indonesia has led to an intensifying competition between various platforms. Promotion is one of the critical factors in achieving competitive advantage in this instance. Effective promotions can attract the interest of prospective buyers, increase brand recognition, and stimulate sales. This research will discuss in depth strategies for developing promotion models in AI-based marketplaces as an important tool in online marketing in Indonesia. With the online market share continuing to grow in the country, the use of AI in promotions is becoming increasingly important, considering the increasing competition and dynamic changes in consumer behavior (Chintalapati & Pandey, 2022; Haleem et al., 2022; Stone et al., 2020). In this context, previous research stated, promotional strategies supported by AI technology can help marketplaces increase the effectiveness of promotional campaigns, optimize target audiences, and increase sales conversions (Bag et al., 2022; Nair & Gupta, 2021). Therefore, research regarding strategies for developing AI-based promotional models in online marketing in Indonesia is relevant and urgent. In an era of increasingly intensive competition and relentless development of information technology, business people are currently faced with the demand to adapt to the needs and expectations of their users continuously. The most striking transformation is the impact of the growth of the Internet as the central infrastructure in information technology, which has changed various aspects of life, including business (Dwivedi et al., 2020; Oztemel & Gursev, 2020). In the trading context, attention is shifting from conventional markets to online-based virtual worlds. To keep up with this current development, business actors use virtual spaces to interact with their customers, especially in the trade sector. One increasingly demanding platform is the electronic market platform, the “marketplace.”

MSME players can access various conveniences and benefits in running their businesses through the marketplace. The platform is an intermediary connecting sellers with buyers, enabling more accessible and efficient transactions. In Indonesia, there are various marketplaces, both those developed by local companies and those from abroad. In facing fierce competition in the e-commerce business world, marketplaces are increasingly relying on Artificial Intelligence (AI) based technology. One example of a marketplace that uses this technology is Tokopedia. Tokopedia has adopted a product recommendation system that utilizes artificial intelligence. When a consumer visits the Tokopedia site or application. In facing increasingly fierce competition in the marketplace, promotion remains inseparable because it has a vital role in achieving company goals. Advertising is one of the main pillars of achieving success. Marketplaces must design a mature, precise and careful promotional strategy to compete effectively and achieve the targets set. Promotional strategies are a crucial operational guide and instrument; completing the set goals will become more complex if abandoned.

A promotional strategy can reach optimal when a company interacts effectively with the market, competes with competitors, and considers environmental factors that influence its operations. In this ever-changing world, a promotional strategy that is dynamic and responsive to market changes is the key to success. Meanwhile, Artificial Intelligence (AI) is an example of tremendous advances in information technology. AI has experienced rapid development in the last decade and has penetrated various sectors. Not only limited to the telecommunications or business industry, AI has now become an integral part of the financial, service, manufacturing and even government sectors.

However, compared with several other countries, AI implementation in Indonesia still needs to improve. Some problems include limited workforce skills in operating AI technology and a need for more investment in developing adequate AI infrastructure. AI implementation in the industrial sector has reached 56% in several other countries (Contieri et al., 2022; Dudnik et al., 2021). Therefore, Indonesia must continue striving to improve AI applications to exploit its enormous potential. It will support the development of increasingly intelligent and adaptive promotional strategies in today's highly competitive marketplace world.

AI supports marketplace marketing strategies through this approach in promoting partner products, especially MSMEs. It helps increase product visibility and attract buyer interest, creating more significant opportunities for MSMEs to grow and succeed in an increasingly competitive market. Thus, using AI technology in marketplaces such as Tokopedia has proven to be effective in facing change and taking advantage of opportunities in the rapidly developing era of online commerce.

Previous studies have provided conclusions showing that Indonesia has a relatively slower rate of technology absorption than countries in the Asia-Pacific region (Ramdani et al., 2019; Syifa et al., 2019; Virtriana et al., 2023). However, 14 companies in Indonesia have adopted Artificial Intelligence (AI) based technology. The successful implementation of AI in this context is influenced by six main factors, namely strong leadership, systematic analytical capabilities, a company culture that supports innovation, high initiative, effective management, and entrepreneurship (Hou et al., 2018; Nieuwenhuis et al., 2018). Some believe that AI will create new jobs that are more complex and more valuable. In some cases, AI can help humans to perform more complex tasks and free up human time to do work that requires interpersonal skills, creativity, and empathy that AI cannot do (Acemoglu & Restrepo, 2020; Bruun & Duka, 2018).

Based on these findings, novelty can be found from this research Artificial Intelligence (AI) has proven its benefits in various aspects of human life. AI's ability to solve problems with greater efficiency and speed than human thinking is one of its central values. AI can access and process large volumes of data quickly, with minimal risk of error. Even though AI is created and controlled by humans and is based on expert knowledge, AI can learn quickly and process much more significant amounts of data as needed. It has important value in helping to overcome the limitations of human thinking capacity, especially in handling complex and heavy tasks efficiently.

Online marketing has become an integral element in modern business, especially in Indonesia which has a large digital market share. In the midst of increasingly fierce competition, the use of AI in promotions in the marketplace has become a trend that has the potential to provide a competitive advantage. The aim of this research is to identify and analyze best practices in developing AI-based promotional models in the marketplace. We also aim to understand the impact of using AI technology in enhancing the personalization of customer experiences, increasing sales conversions, and optimizing overall online marketing strategies. Apart from that, this research will also explain the challenges and obstacles that companies may face in adopting AI technology in online promotions in the Indonesian context.

2. METHODS

This research adopts a qualitative approach using the case study method. In the context of qualitative research, this approach is carried out holistically, applying in-depth interpretive and critical approaches to understand problems with complex social dimensions. As explained by Kuswarno (2013), qualitative research recognizes that the reality that appears to the five human senses, including reality in virtual reality, results from processes involving history, social dynamics, politics, culture, economics and other factors. The definition of a case study is an attempt to investigate a system with certain boundaries or cases in more depth (Creswell & Creswell, 2017). In this process, data is collected comprehensively from various informant sources, thereby enabling a deeper understanding of various aspects, individuals, groups, organizations, programs or social situations. Research in this case study aims to collect as much data as possible about the research subject. This qualitative approach allows us to dig up more in-depth and contextual information about the problem being researched to provide more comprehensive insight. This study focuses on the marketing communication aspect of promotional strategy program development. This study focuses on two primary groups: sources or informants involved in the decision-making process regarding promotional strategies in artificial intelligence-based marketplaces, particularly on the Tokopedia platform, and partners or application users on the Tokopedia platform. The role of informants in research has significant benefits. Informants facilitate the collection of data more rapidly and thoroughly. In addition, they enable researchers to comprehend and engage with pertinent local contexts.

In research with a qualitative approach, the data collection process focuses on the informant's role. The sampling technique used was purposive sampling, where informants in this study were selected based on criteria that were per the research objectives. The data sources used in this research come from various sources, including those who participated in interviews, locations or places that were the focus of the research, events relevant to the research topic, and supporting documents obtained from both primary and secondary sources. The data was collected through in-depth interviews and focus Group Discussions (FGD) to gain a deeper understanding through group discussions and direct observation of situations or events relevant to the research. Document analysis was also carried out to extract information from various sources that could support this research. These data collection techniques ensure that the data obtained has the depth and diversity necessary to answer the research questions best. Our research uses qualitative methods with a purposive sampling approach to select informants according to the research objectives. This approach provides a deep understanding of the research subject. Our data comes from various sources, including interactions with experienced sources, direct observation, and primary and secondary document analysis. We conduct in-depth interviews with in-depth questions to understand the topic comprehensively. Apart from that, we also used Focus Group Discussions (FGD) to explore diverse perspectives. In this study, we combined various approaches to data collection to gain a holistic understanding of the research topic.

This research is a continuation of a series of research in business communication that previous researchers have carried out. One example of previous research is research related to the Online Mass Media Business Industry Model in the Era of Artificial Intelligence (AI) Development. Previous research has provided an essential foundation and insight into understanding the evolution of business in this digital era.

The research focus in 2023 is to develop and dig deeper into the marketplace business industry model supported by artificial intelligence in the context of global marketing.

This research aims to formulate an innovative and effective business model for facing dynamic changes in the global business environment. By utilizing artificial intelligence and the latest technology, this research aims to identify relevant and efficient marketing strategies in facing increasingly complex global market challenges.

3. RESULTS AND DISCUSSIONS

Results

Tokopedia Company

Tokopedia, founded on February 6 2009 by William Tanuwijaya and Leontinus Alpha Edison, is a leading marketplace in Indonesia. In 2016, they introduced financial services to support business people, especially MSMEs. In 2018, Tokopedia launched the Mitra Tokopedia application, enabling micro-business owners to market digital products. Tokopedia has won various awards, including Marketeers of the Year in 2014 and Best Company in Consumer Industry at the 2016 Indonesia Digital Economy Award. They also managed to occupy the highest ranking in the Apple Store. Tokopedia's vision is to develop Indonesia through the Internet and create an ecosystem that supports everyone in starting and discovering everything. They aim to achieve digital economic equality and support business growth without geographic limitations. In 2016, Tokopedia collaborated with the Bandung City Government to create the “City Page,” which supports SME products for Bandung City residents and helps them develop online businesses for free. This collaboration supports the growth of the digital creative economy in Bandung, especially in the MSME sector. In 2021, Tokopedia will reach 99% of sub-districts throughout Indonesia with 100 million users and 11 million active sellers, the most new players. Tokopedia's significant contribution to the Indonesian economy can be seen from 90% of micro-scale sellers. Tokopedia helped MSMEs with digital adoption during the pandemic, increasing sales by 133%. Tokopedia also supports financial inclusion through digital payments such as the popular E-wallet and mobile/internet banking.

The Function of Artificial Intelligence in Promotion Strategy

Artificial Intelligence (AI) has become a key component in digital marketing strategies in the continuing development of business along with technological advances. AI is a branch of science that utilizes computers to imitate human abilities, especially in the context of machine intelligence. AI was first introduced in the 1960s and since then has continued to experience rapid development. AI can imitate various aspects of human abilities, such as learning, problem-solving, voice and facial recognition, and plays an influential role in business promotion strategies. The use of AI in the marketing world has helped simplify previously complex tasks and has been proven to increase sales of products and services. AI in marketing has a variety of applications, including analyzing consumer data to improve personalization, automating routine tasks, and leveraging chatbots to improve interactions with customers. All this contributes to increased efficiency, productivity and better results in business. Therefore, AI's role in marketing is increasingly important and cannot be ignored. According to the Content Marketing Institute, Google controls 40.7% of the digital market, while Facebook accounts for 19.7%. Tokopedia utilizes Artificial Intelligence (AI) and big data to optimize marketing based on consumer behaviour. AI uses methods such as deep learning to understand customer preferences. Transaction data and customer traces are used in marketing analysis with the help of data mining and association algorithms. Collaboration between AI and association algorithms allows Tokopedia to track customer purchasing patterns and improve marketing strategies and product sales. Sales databases store large volumes of transaction records, including lists of items purchased by customers. This information is valuable for programmers in understanding customer purchasing patterns and interests. With this data, relevant ads can be displayed on the websites that customers visit. For example, if a consumer searches for sweatpants, their footprint data shows related ads, such as t-shirts, hats, shoes, and more, increasing the opportunity for additional purchases. Not all marketplaces use deep learning for promotions because it requires expensive infrastructure and powerful servers to handle big data.

For example, consulting companies like Drone Emprit collect big data to analyze customer preferences online. Investments in big data servers can reach tens of billions if rented through Google, and Tokopedia spends large amounts of money on renting servers. By integrating big data into AI systems, programmers can design more effective promotional strategies by understanding previous customer purchasing patterns to identify more targeted customer segments.

Only a few electronic trading platforms (marketplaces) have adopted deep learning methods in their promotional efforts. However, this is due to the need for reliable infrastructure and investment in servers that are not economical to accommodate the required big data. This big data collection process often involves big data technology which is generally implemented by consulting companies that have expertise in analyzing customer preferences through online data. For example, Drone Emprit is one consulting company that specifically focuses on observing customer preferences via the internet. It is important to remember that the greater the volume of data required, the greater the big data server capacity required.

Through the integration of big data into artificial intelligence (AI) systems, software developers (programmers) are able to design highly focused promotional strategies, with the aim of increasing the marketing of the products offered. These AI-based promotional strategies, especially those involving catalog design through advertising, enable better identification of customer segments through past purchasing patterns. In this way, product promotions can be optimized more effectively, according to customer preferences identified through careful data analysis. In this way, Phrasee can quickly and efficiently produce attractive and effective marketing texts quickly and efficiently.

Discussion

From the results of initial observations involving six owners of Micro, Small and Medium Enterprises (MSMEs) in the City of Jakarta in the period April to August 2021, a number of factors were revealed that encouraged them to join as Tokopedia partners. In this research, MSME owners provide assessments of various aspects that influence their decisions, such as ease of use of the Tokopedia platform, availability of useful features, variety of courier choices, speed of the balance disbursement process, as well as creative and attractive promotional efforts. This data is the result of research conducted by the author in 2023.

Creative and effective promotions have become a key element in business strategy, applicable to both large-scale companies and MSMEs (Candra et al., 2022; Kadarisman, 2019; Santoso et al., 2023; Wibowo & Iriantini, 2022). The aim of this promotion is to increase product sales and influence consumer behavior so that they are interested in buying. Although it often requires a significant budget investment, well-targeted promotions have the potential to provide major benefits to a company. By implementing promotional strategies that suit their goals and target market, companies can expand demand in the market, increase profits, and optimize their overall operations (Grandhi et al., 2021; Kumar et al., 2020; Rosário & Raimundo, 2021). Therefore, creative and effective promotional strategies have become an integral element in business growth and success strategies in the contemporary era.

Based on the findings revealed in this research, it can be concluded that Indonesia is still facing challenges in absorbing technology which tends to occur more slowly compared to several countries in the Asia Pacific region, as has been proven by previous studies (Kim & Park, 2020; Li et al., 2022). These findings have several important implications that are worth discussing. First, the slow absorption of technology in Indonesia can affect the country's economic competitiveness. In the era of ever-growing globalization and digitalization, countries that succeed in adopting technology quickly tend to have a competitive advantage (Mang'ana, 2022; Salemink et al., 2017). Therefore, the slow absorption of technology can hamper economic growth and reduce Indonesia's ability to compete in the global market (Hakim & Dewi, 2021; Sholeh & Mispandi, 2022). Second, a more in-depth analysis needs to be carried out to understand the factors that cause the slow uptake of technology in Indonesia. Previous research can provide valuable insight into the obstacles faced by Indonesia in this regard. These include issues of technological infrastructure, access to resources, and regulations that support technological innovation (Bergek et al., 2015; Mang'ana, 2022). With a better understanding of these barriers, governments and businesses can design strategies to accelerate technology uptake. Third, this research shows that faster and more efficient technology absorption can support the growth of MSMEs and industry in Indonesia. In the context of digital markets and marketplaces, technology can be a catalyst for business success, especially for MSMEs. Therefore, steps taken to increase technology uptake can have a positive impact on the business sector in Indonesia.

These findings can spark further debate and dialogue about the policies and strategies needed to accelerate technology uptake in Indonesia. This could include incentives for technological innovation, investment in digital infrastructure, broader technological education and training, and regulations that support technological development. In conclusion, faster adoption of technology is the key to increasing Indonesia's competitiveness and economic growth in the ever-changing digital era.

4. CONCLUSION

Artificial intelligence, or AI, has significantly impacted various aspects of human life. In the context of promotional strategies, AI has proven invaluable, providing various advantages and efficiencies in modern marketing. Among AI's advantages in marketing is its ability to find new marketing channels that competitors still need to focus on market selling. AI can also predict purchasing patterns with high accuracy using predictive analytics, helping companies plan future marketing strategies. The use of Deep Learning for Pattern Identification that AI, especially through deep learning techniques, has the ability to recognize and understand patterns contained in various types of data, such as images (photos), text, sound and consumer behavior. In this way, AI can provide a deeper understanding of customer behavior. For example, AI can identify customer purchasing preferences or behavioral tendencies based on analyzed data. Efficient Service through AI Bots that AI Bots that have access to internet data can provide efficient and effective services to customers. They can answer customer questions, provide product recommendations, or coordinate customer service automatically. This increases a company's responsiveness to customer needs and enables cost savings in customer service. AI is able to combine data from various sources and analyze it in more depth. This helps companies understand customer needs better. As a result, companies can make advertising choices that are more relevant and in line with customer preferences.

5. ACKNOWLEDGE

The author would like to express his gratitude to all groups and communities for the encouragement provided throughout the journey of this research to completion. This research provides important insights regarding AI-based promotional development strategies in online marketing in Indonesia. The results of this research can inspire further developments in online marketing. Thank you for sharing the knowledge. Hopefully, it will continue to have a positive impact in the future.

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