Analysis of the Use of AI Technology in Personalizing the Consumer Experience in Digital Marketing: A Review from Perspective

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Abstract

The utilization of Artificial Intelligence (AI) technology has become a primary subject in digital marketing strategies, particularly in efforts to tailor consumer experiences personally. This research aims to analyze in-depth literature related to the utilization of AI technology in the context of personalized customer experiences in digital marketing. The research method consists of systematic review and detailed analysis of various journal articles, books, and other literature sources related to the theme. Literature search is conducted through academic databases, including Google Scholar and Scopus, following pre-established inclusion and exclusion criteria to determine relevance to the research focus. The results of the analysis present various perspectives regarding the use of AI technology in efforts to enhance customer experiences, including the application of methods, types of technology used, challenges faced, and their impact on customer engagement and overall performance in digital marketing. This literature review also identifies significant trends, crucial findings, and knowledge gaps that may become subjects of future research. The implications of these findings provide profound insights into the role of AI technology in advancing digital marketing practices, emphasizing the importance of personalization in creating satisfying and effective customer experiences. This research is expected to make a significant contribution to the development of theory and practice in the field of digital marketing, as well as to serve as a guide for further research efforts to be undertaken.

Keywords: *Artificial intelligence, Personalization, Customer experience, Digital marketing.*

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INTRODUCTION

In an era that continues to evolve in the digital realm, marketing strategies have undergone a significant transformation, especially with the emergence of artificial intelligence (AI) technology. Companies that have successfully implemented business adaptation strategies in the digital era have leveraged technology as a key driver to transform their businesses (Rahmasari, 2023).

Digital transformation in global marketing research has been a major driver of changes in data collection and analysis methods (Suhairi et al., 2024). Included in this case are traditional companies. Conventional companies in the sector are also starting to adopt AI technology to update their operational processes. Artificial Intelligence is often used as an automation tool and is an effective application of technology for business advancement (Nuraziza et al., 2024).

In this case, AI is the main catalyst for changes in marketing strategies, changing the dynamics of a company's interaction with consumers and resulting in a more individualized and relevant experience. This is because in improving performance, AI's ability to predict market trends is extraordinary. By analyzing historical data and identifying patterns that may have gone unnoticed by humans, AI can provide more accurate predictions and help companies prepare for market changes in a more timely manner. This supports the planning of marketing strategies that are more adaptive and responsive to changing market dynamics according to Davenport, (2020) in (Supriadi, 2024).

The company's main focus today lies in applying AI technology to personalize the consumer experience, with the goal of improving customer connections, increasing retention, and improving satisfaction levels.

The use of AI technology in the context of digital marketing is showing a significant impact on various aspects of business, including increased conversions, enhanced customer loyalty, and improved operational efficiency. Today, everyone is using machine learning algorithms, both consciously and unconsciously. Examples include receiving product recommendations when shopping online to uploading photos on social media (Vishwakarma, 2024).

With the presence of advanced machine learning algorithms, companies can conduct in-depth analysis of consumer data, understand individual preferences, and present experiences tailored to each customer's unique characteristics.

However, along with the advantages offered, the application of AI technology in personalizing the consumer experience also poses various challenges. One of them is related to data privacy and security issues, as found in the research (Oseni et al., 2021) that in the use of AI there are various attacks on data privacy and security, both on neural networks in the context of computer vision, natural language processing, and cybersecurity, which are referred to as adversarial attacks.

Therefore, consumers must always pay attention to how their personal data is because the data will be processed and stored by the company. In addition, there is an urgent need to continue to develop more advanced and reliable artificial intelligence technologies to provide a more effective and satisfying consumer experience.

Given its strategic role, scientific research on the use of AI technology in personalizing consumer experiences in the realm of digital marketing is becoming increasingly important. With a deeper understanding of the application of this technology, companies are expected to optimize their marketing strategies, strengthen interactions with consumers, and better achieve business goals.

In research Kurniawati (2017) It is stated that the digital marketing ecosystem is proven to provide various benefits for businesses. These benefits include elements such as marketing automation, increased collaboration between sales and marketing, reduced costs as well as increased efficiency and profits, and improved customer experience.

Through a careful analysis of various literature sources, we aim to identify the trends, challenges, and opportunities associated with the application of this technology in the context of digital marketing. As such, this research is expected to provide valuable insights for marketing practitioners and academics on how AI technology can be an effective tool in strengthening the relationship between companies and consumers in the ever-evolving digital era.

In the context presented, it is imperative to recognize that the integration of artificial intelligence (AI) technology in the realm of digital marketing not only affects the interaction of companies with customers, but also broadens the scope of business competition as a whole. Companies that are able to bring data and artificial intelligence together with a scalable marketing strategy will gain a substantial competitive advantage in this increasingly competitive market arena.

In the context of using AI for market analysis, this technology can be used to identify competitors in established markets or to explore opportunities in new markets, as well as to gain insights into a product's competitive advantage (for example, how a product can outperform competitors in meeting customer needs). To illustrate, supervised machine learning algorithms can be applied to markets that are already stable and known to marketers, while unsupervised machine learning algorithms can be used for new markets or to find opportunities outside of markets that have unknown and unstable structures and trends (Huang & Rust, 2021).

In the context of understanding development, this research also aims to bridge the existing knowledge gap regarding the role of AI technology in digital marketing. While many studies have addressed the application of AI in digital marketing in general, there is still a lack of understanding of how AI technology can specifically improve the personalization of the customer experience. For example, not many have discussed in detail how AI algorithms can be used to analyze customer data and adjust product or service offerings in real-time to improve customer satisfaction and loyalty.

This research aims to fill these gaps by investigating in depth the mechanisms and effects of AI-based personalization in digital marketing strategies. This is expected to result in discoveries that encourage the improvement of existing marketing strategies as well as the development of new approaches in meeting the needs and expectations of consumers in the ever-changing digital era.

METHODOLOGY

Exploratory research is designed to allow researchers to explore specific phenomena with the aim of developing initial ideas (Reynolds, 1971). The study is exploratory and qualitative, involving in-depth analysis through the exploration of academic journals and relevant books. Secondary data and information have been analyzed in detail for the preparation of this article. Secondary sources of data and information include scientific papers, published e-books, articles in various journals, working papers, company websites for annual reports, CSR reports, and internal newsletters. The company-related data used is the one that is publicly available on the company's website. This is a common practice in qualitative research that is critical review (Bala & Verma, 2018).

The literature search step was carried out by utilizing a number of keywords related to the research theme, such as "artificial intelligence technology", "personalization of consumer experience", and "digital marketing". Thus, researchers can identify the most relevant sources of literature with a predetermined research focus. After the identification of the source of the literature, a rigorous selection process is carried out to select the most relevant and high-quality literature. The selected literature is expected to make a significant contribution to the understanding of the application of artificial intelligence technology in the context of personalization of the consumer experience in digital marketing.

After the literature is collected, the researcher conducts selection and sorting based on the inclusion criteria that have been set. The criteria include relevance to the research topic, reliability of sources, and quality of research methodology. Literature that meets the inclusion criteria is then thoroughly analyzed to extract relevant information to support the research analysis.

When conducting a literature analysis, researchers recorded the main findings, arguments, and conclusions from each selected literature source. The information is then compiled and synthesized to form a structured and cohesive analytical framework. This approach allows researchers to identify patterns, trends, differences, and gaps in the existing literature, which is the basis for building arguments in this study.

By combining literature sources from various platforms and applying careful methodologies, this research is expected to make a valuable contribution to the understanding of the use of artificial intelligence technologies in personalizing consumer experiences in the context of digital marketing. In addition, a detailed literature search and analysis process also ensures that this research can be accounted for and relevant in the academic and practical realms. The framework of this article is

RESULTS AND DISCUSSION
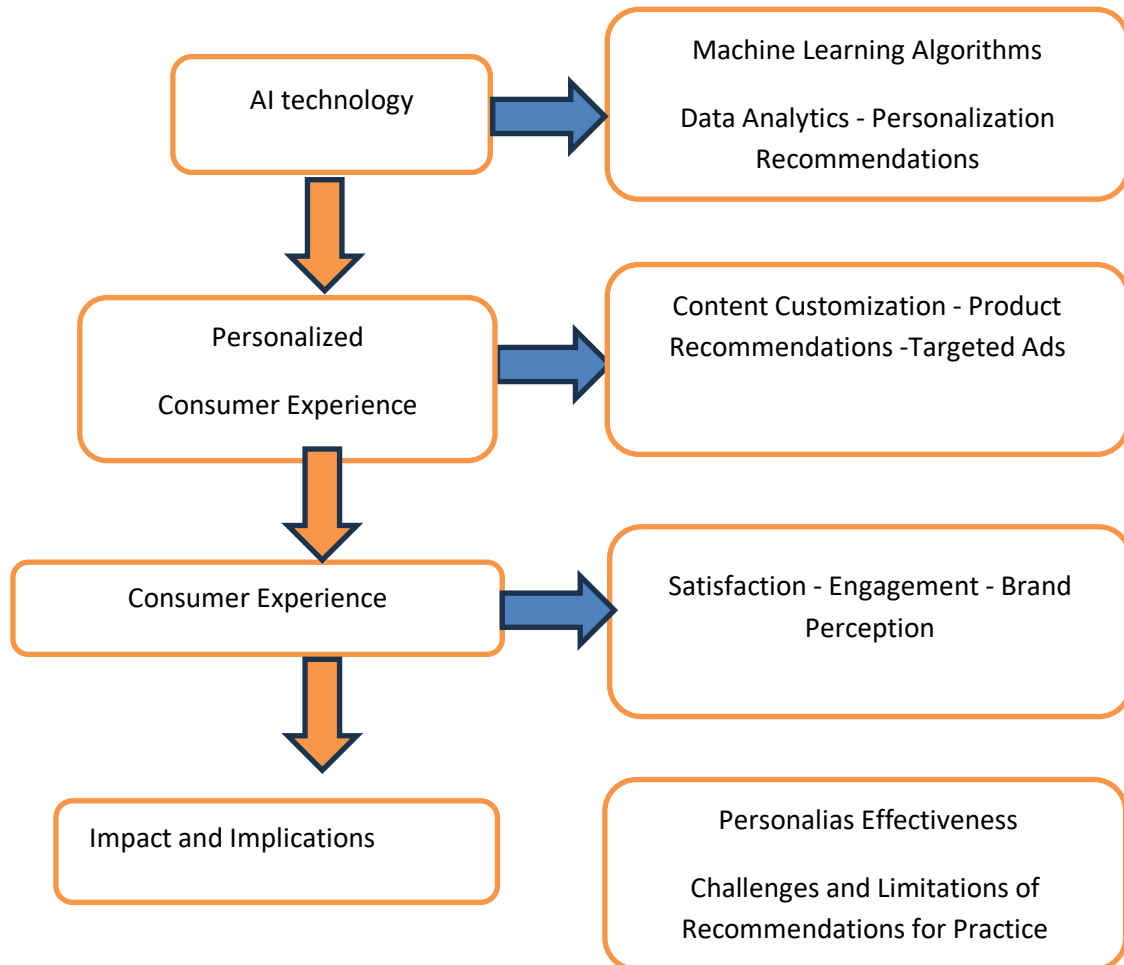
Internet Development

The internet is a global system that connects computer networks around the world. It is a network of various networks involving millions of private, public, academic, business, and government networks. "The internet works thanks to the integration of various technologies and is the largest source of information ever. The Internet also provided more channels of information than humans created until the 20th century." (Philips, 2003).

The term "marketing" has various definitions. One of the most well-known definitions is "Marketing is a social process in which individuals and groups get what they need and want through the creation and exchange of products and values with others." (Kotler, Keller, 2007).

By combining these two fields, "We can apply marketing principles in the context of the internet. This can be done mainly with web page creation, online advertising, marketing research over the internet, e-commerce, and so on. However, internet marketing requires a slightly different approach compared to traditional marketing." (Blažková, 2005). In simple terms, internet marketing, which is also known

as online marketing, web marketing, electronic marketing, or i-marketing, refers to the marketing of products or services over the Internet.

Internet marketing involves the use of a company's website in conjunction with online promotion techniques such as banner ads, search engines, PPC ads, emails, and links from other sites to attract new customers. Many people may think that internet marketing is only about websites with content, when in fact it is much more complex. Internet marketing is a network involving site portals, search engines, partner sites, blogs, links to other sites, B2B partners, customers, and outsourcing partners. For any type of marketing, having a broad audience is essential. In the context of internet marketing, the number of potential customers is in line with the growth of internet usage itself. An analysis of the literature confirms that one of the main applications of AI technology in.

Graph 1. Number of Internet Users in Indonesia (2018-2022*)
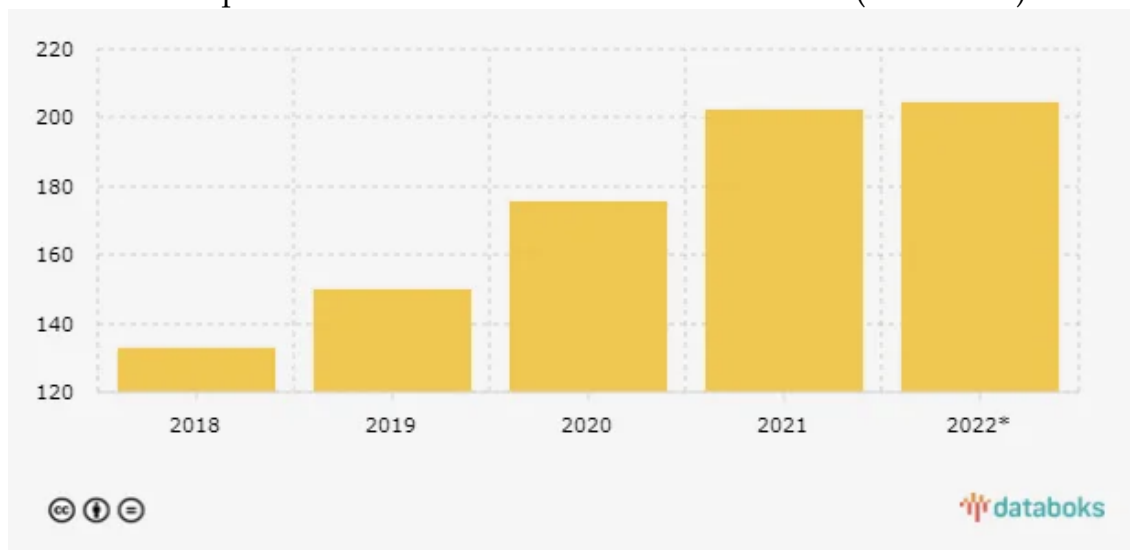
B. Personalizing the Consumer Experience through AI Technology

This article discusses the transformative potential of Artificial Intelligence (AI) in personalizing marketing strategies. The research investigates the theoretical fundamentals of consumer engagement and how AI can be leveraged to create targeted and relevant marketing experiences. AI can tailor messages based on consumer behavior and demographics, influence processing paths, as well as increase engagement.

With AI, gamified marketing experiences can be personalized, tailoring rewards and challenges to individual preferences, thus encouraging deeper engagement. Algorithms can process large amounts of customer data to predict preferences and behaviors, enabling targeted advertising, product recommendations, and content tailored to specific consumer segments. Natural Language Processing (NLP), powered by AI, analyzes customer reviews, social media conversations, and other unstructured data. It allows brands to understand customer sentiment and tailor communication styles for more effective interactions, such as those done by AI-based chatbots and virtual assistants.

Personalized marketing can enhance the brand experience by offering real-time product support and recommendations, as well as driving a more interactive and engaging brand experience. The benefits and considerations of personalized messages and experiences include increased customer satisfaction and loyalty, as well as the creation of a more relevant brand image. Personalized marketing campaigns can significantly increase conversions and sales. However, it's important to balance personalization with data privacy concerns. Transparency and user control over data collection practices is essential. AI algorithms can also reinforce bias in training data, thus ensuring fairness and inclusivity in AI-driven marketing is a priority. By leveraging the analytical capabilities of AI and understanding consumer engagement theory, brands can develop more targeted, relevant, and drive business growth marketing strategies (Sodiq Odetunde Babatunde et al., 2024).

Personalization using AI technology focuses on tailoring products, services, and marketing strategies according to the customer's individual preferences. This process involves collecting and analyzing extensive customer data, including search history, purchase patterns, and demographic information, to create tailored experiences by leveraging machine learning algorithms (Xu, 2023). With AI-driven personalization, organizations can organize information, recommendations, and offers to be more relevant to user needs. This approach has the potential to increase customer satisfaction and engagement, as well as boost revenue by offering more valuable and relevant experiences(Bhuiyan, 2024).

The use of AI technology in personalizing the consumer experience opens up a huge opportunity for companies to significantly improve the quality of their interactions with customers. Here are some points that can be further explained:

1) **Comprehensive Data Collection**: AI technology allows companies to collect customer data from a variety of sources, including online interactions, purchase behavior, preferences, search history, and responses to marketing campaigns. This data forms the basis for effective personalization by providing a deep understanding of consumers' individual behaviors and needs.

2) **Deep Analytics**: By using machine learning algorithms, AI technology can analyze customer data with a high degree of accuracy. This capability allows companies to identify patterns, trends, and consumer preferences that may not be detected manually. This in-depth analysis helps companies understand consumer behavior and provide relevant recommendations.

3) **Personalized Relevant Experiences**: Based on the results of data analysis, companies can create customized experiences for each individual consumer. This can include specific product recommendations, special offers, customized content, or personalized interactions. This personalization helps to increase consumer engagement and strengthen the relationship between consumers and brands.

4) **Continuous Adjustment**: One of the key advantages of AI technology is its ability to learn and adapt constantly to changes in consumer behavior and market trends. By continuously collecting and analyzing data, companies can continue to improve the personalization of their consumer experience to stay relevant and effective.

Through Chatbots and AI-based personalized virtual assistants can improve the customer experience in various types of businesses. Artificial intelligence is able to provide goods, services, and marketing according to customer preferences. For example, in the field of retail and hospitality, as well as finance. Artificial intelligence can improve retail virtual shopping assistants and product recommendations.

Likewise, artificial intelligence-based communication and individualized financial advice can improve customer service. In fact, it has been found that the practical use of AI-powered personalization and its benefits for the customer experience. These findings are an attempt to illustrate that AI is able to personalize their experience and engage customers in various industries(Bhuiyan, 2024).

Thus, the use of AI technology to personalize the consumer experience offers great potential for companies to improve service quality and strengthen customer satisfaction. It also allows companies to differentiate themselves in a competitive market by providing a unique and relevant experience for each consumer.

The use of machine learning algorithms in the context of personalizing the consumer experience is one of the main foundations in applying artificial intelligence (AI) technology. This algorithm provides an opportunity for the system to study the patterns contained in customer data and compile recommendations tailored to each individual's preferences.

In the realm of digital marketing, machine learning algorithms have a wide range of applications that can improve the personalization of the consumer experience:

1) Pattern and Trend Analysis: Machine learning algorithms can be used to analyze historical customer data to identify patterns in purchasing behavior, product preferences, and online interactions. With a deeper understanding of these patterns, companies can craft recommendations that are more accurate and relevant to each customer.
2) Customer Segmentation: Through machine learning algorithms, companies can segment customers based on similar characteristics and behaviors. This allows companies to present content, offers, and recommendations that suit the needs and preferences of each customer segment.
3) Interaction Optimization: Machine learning algorithms can be optimized to improve interactions between companies and customers. By analyzing customer responses to different types of interactions, such as email marketing or social media content, companies can tailor their communications to make them more engaging and relevant to each customer.
4) Prediction Model Development: Machine learning algorithms are also useful in developing predictive models that can predict future customer behavior. By leveraging historical data and factors such as seasonality or market trends, companies can design marketing strategies that are more effective and responsive to changing environments.

Thus, the role of machine learning algorithms is vital in improving the personalization of consumer experiences in the realm of digital marketing. By leveraging machine

intelligence, companies can provide a more relevant, engaging, and satisfying experience for each customer.

Personalizing the consumer experience with AI technology faces a number of challenges that require careful handling. One of them is the need for efficient data management to ensure that consumer information is stored properly and can be accessed in a timely manner. Data security and privacy are also a major focus, where the protection of consumers' personal information must be strictly maintained in accordance with the applicable privacy policy.

Increasingly stringent data regulations, such as GDPR in the European Union or the CCPA in California, add complexity to the management of customer data. Companies must ensure full compliance with such regulations and invest resources to understand and implement the relevant requirements. Additionally, relying too much on AI technology in personalizing the consumer experience can be challenging. While AI provides valuable insights, it's important not to rule out the role of humans in understanding the customer's unique context and needs holistically.

Companies must also pay attention to the variation in consumer preferences for the level of personalization provided. Some consumers may be comfortable with high personalization, while others may prefer to maintain their privacy. Therefore, flexibility in the personalization approach is key to answering the needs and wants of customers appropriately. By adopting a holistic approach that includes technology, policies, and best practices, companies can address these challenges more effectively. As such, the consumer experience can be significantly enhanced without sacrificing critical data security and privacy.

CONCLUSION

This research emphasizes the importance of integrating AI technology and personalizing the consumer experience in an effort to improve the effectiveness of digital marketing strategies. AI, as a powerful tool, provides better insights, while personalizing the consumer experience allows companies to deepen relationships with their customers.

Overall, the study highlights the central role of AI technology in driving innovation in digital marketing, especially in the context of personalizing the consumer experience. With a better understanding of the interconnectedness between AI and personalization, companies can develop marketing strategies that are more effective and responsive to customer needs in an ever-evolving digital environment.

Through collaboration between academics, practitioners, and regulators, the implementation of AI technology in personalizing the consumer experience can bring significant benefits to all parties involved. By deepening understanding and implementing best practices, companies can optimize the use of AI technology to achieve their marketing goals and meet customer expectations in the ever-changing digital age.

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