Digital Marketing Innovation for MSMEs through ChatGPT Integration and Management Information Systems: A Technological Transformation Approach for Competitive Advantage

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ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) play a significant role in Indonesia's economy. However, with technological advancements and changing consumer trends, MSMEs face substantial challenges in maintaining and enhancing their competitiveness. The development of digital technology is an imperative that cannot be ignored if MSMEs are to remain relevant and competitive in the modern era. This research examines how the integration of ChatGPT and Management Information Systems (MIS) can positively impact the digital marketing of MSMEs and how these enterprises can leverage this technology to enhance their competitiveness. This study employs a literature review method with a qualitative approach. Data were obtained from Google Scholar covering the period from 2014 to 2024. The results indicate that digitalization, through the implementation of technologies such as ChatGPT and Management Information Systems, significantly impacts MSMEs by enhancing their competitiveness. Integrating ChatGPT with MIS not only improves operational efficiency but also enriches customer experience through more responsive and personalized services. Case studies from companies like Tokopedia, Zalora, and Kopi Kenangan demonstrate that adopting digital technology can expand market reach, increase sales, and improve stock management. However, challenges such as infrastructure limitations and the need for staff training must be addressed to ensure successful technology adoption. The long-term success of digital technology highlights the importance of sustainable investment and adaptation to evolving market trends.

Keywords: Digital Marketing Innovation, MSMEs, ChatGPT, Management Information Systems, Technological Transformation, Competitive Advantage

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have a significant role in Indonesia's economy. Contributing over 60% to the national GDP and creating employment for the majority of the workforce, MSMEs are the backbone of the economy (Ausat & Suherlan, 2021). However, with technological advancements and changing consumer trends, MSMEs face substantial challenges in maintaining and enhancing their competitiveness. The development of digital technology has become a necessity that cannot be overlooked if MSMEs are to remain relevant and competitive in the modern era (Sutrisno, Prabowo, et al., 2024).

One technology that has emerged as a potential solution to enhance the efficiency and effectiveness of MSMEs' businesses is Artificial Intelligence (AI), represented by ChatGPT. Developed by OpenAI, ChatGPT is an AI language model capable of understanding and responding to questions and commands in natural language (Harahap et al., 2023). This technology has great

potential to support various operational aspects of MSMEs, especially in marketing. Through automated customer interactions, creating more personalized content, and providing quick and accurate responses, ChatGPT can help MSMEs enhance customer experience and operational efficiency.

Management Information Systems (MIS) are another crucial tool for MSMEs in collecting, managing, and analyzing business data. With MIS, MSMEs can monitor their performance, identify market trends, and understand customer behavior. Integrating ChatGPT with MIS can provide synergistic benefits (Subagja et al., 2023). Data collected from customer interactions via ChatGPT can be processed by MIS to provide deeper and strategic insights, which can be used to develop more effective and data-driven marketing strategies.

In the digital era, digital marketing has become essential. Consumers increasingly use digital platforms to seek information and make purchases (Efendiouglu, 2024). The ability of MSMEs to adapt to this trend is crucial. With ChatGPT, MSMEs can create relevant and personalized marketing content, and manage digital marketing campaigns more efficiently. Meanwhile, MIS enables MSMEs to analyze data in real-time and make more targeted decisions.

However, implementing this technology is not without challenges. Many MSMEs still face obstacles in terms of technological knowledge and skills, adequate infrastructure, and financial resources to adopt advanced technology (Loo et al., 2023). The success of this technological transformation heavily depends on the readiness of MSMEs to overcome these challenges. Support from the government, educational institutions, and related parties is needed to provide necessary training and assistance so that MSMEs can adopt and utilize this technology optimally.

Previous research indicates that adopting digital technology can provide significant competitive advantages for MSMEs. For example, a study by (Ausat et al., 2022) found that MSMEs implementing digital technologies like e-commerce and social media experienced a 20% increase in sales within the first year. Additionally, research by (Ausat & Peirisal, 2021) showed that using data analysis and digital marketing improved operational efficiency by up to 15%. However, despite these identified benefits, much work remains to fully integrate advanced technologies like Artificial Intelligence (AI) and Management Information Systems (MIS) into MSMEs' marketing strategies. For instance, research by (Harahap et al., 2024) revealed that few MSMEs in Indonesia use AI for market analysis and customer personalization. The main barriers include a lack of technical knowledge, high implementation costs, and resistance to change.

Therefore, this research aims to examine how the integration of ChatGPT and MIS can positively impact the digital marketing of MSMEs, and how these enterprises can leverage this technology to enhance their competitiveness. With this background, this study seeks to explore the potential and challenges faced by MSMEs in adopting and integrating ChatGPT and MIS into their digital marketing. By gaining a deeper understanding of this technology, effective strategies can be found to support the digital transformation of MSMEs, allowing them to continue growing and contributing significantly to the national economy.

LITERATURE REVIEW

Digital Marketing Innovation

Digital marketing innovation refers to the application of the latest digital technologies and creative strategies to promote products or services (Dašić et al., 2023). This includes using digital tools and platforms such as social media, search engines, email marketing, and websites to reach a broader audience and interact with customers more effectively. This innovation also involves leveraging data analytics to understand consumer behavior, marketing automation to improve efficiency, and content personalization to enhance engagement and conversion. By continuously adopting the latest technologies and developing adaptive marketing strategies, businesses can be more responsive to market changes and customer needs, thereby increasing their competitiveness (Sudirjo, 2023).

Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are a category of businesses that operate on a smaller economic scale compared to large companies (Subagja et al., 2022). MSMEs are

typically defined based on the number of employees, turnover, and assets. Micro enterprises generally have fewer than 10 employees, small enterprises have 10-50 employees, and medium enterprises have 50-300 employees. MSMEs play a crucial role in the economy by absorbing a large portion of the workforce and significantly contributing to the Gross Domestic Product (GDP). They operate in various sectors, including trade, services, manufacturing, and agriculture, and often drive local innovation and economic development (Sutrisno, Wibowo, et al., 2024).

ChatGPT

ChatGPT is an artificial intelligence-based language model developed by OpenAI, designed to understand and generate text that resembles human conversation (Sudirjo et al., 2023). This model uses machine learning technology, specifically deep learning techniques on artificial neural networks, to process and generate relevant responses based on given text inputs. ChatGPT can be used for various applications, such as automated customer service, content creation, virtual assistants, and more (Jusman et al., 2023). Its ability to understand context and provide coherent and informative answers makes it a highly useful tool in various fields, from business to education.

Management Information Systems (MIS)

Management Information Systems (MIS) are systems designed to collect, store, process, and disseminate information needed to support decision-making and organizational management (Berisha Shaqiri, 2014). MIS integrates information technology with management processes to provide accurate and timely data to managers and other stakeholders. This system involves various components, including hardware, software, databases, procedures, and human resources. With MIS, organizations can improve operational efficiency, optimize business processes, and make better decisions based on available data and analysis (Mjlae, 2020).

Technology Transformation

Technology transformation is the process of adopting and integrating new technologies into business operations and strategies to improve efficiency, productivity and competitiveness (Wahyoedi et al., 2023). It involves fundamental changes in the way organisations operate and deliver value to customers, often through the digitisation of processes, automation of tasks and the use of data for better decision-making. Technology transformation not only includes the implementation of new hardware and software, but also involves changing organisational culture, training employees, and adjusting business models to maximise the benefits of the adopted technology (Sutrisno et al., 2023).

Competitiveness Improvement (Advantage)

Competitiveness improvement (advantage) is an effort to improve the position and performance of an entity-such as a company, MSME, or country-in a particular market or industry in order to compete more effectively with competitors (Robertus Suraji, 2020). It involves strategies and actions designed to increase competitive advantage, such as improving product or service quality, optimising operational efficiency, strengthening brands, and innovation. Increased competitiveness allows entities to attract and retain customers, expand market share, and achieve better financial results, as well as survive and thrive in a competitive business environment (Farida & Setiawan, 2022).

RESEARCH METHOD

This research employs a literature review method with a qualitative approach and descriptive analysis to explore the topic "Digital Marketing Innovation for MSMEs through ChatGPT Integration and Management Information Systems: A Technological Transformation Approach for Competitive Advantage." In this study, a qualitative approach is used to gain a deep understanding of how digital technology, particularly ChatGPT and Management Information Systems (MIS), can influence digital marketing innovation and the competitiveness of MSMEs. This approach allows researchers to explore and understand the various perspectives and dynamics involved in the implementation of these technologies. Data collected is analyzed descriptively to

identify and explain the main themes and patterns that emerge from existing literature. Descriptive analysis focuses on describing the key findings from the reviewed articles, providing an overview of the practices, benefits, challenges, and outcomes related to technology implementation in the context of MSMEs. Research data is obtained from Google Scholar covering the period from 2014 to 2024. The data collection process begins with identifying 51 articles relevant to the research topic. These articles then go through a rigorous selection process based on quality and relevance criteria, resulting in 35 articles used as the basis for analysis. With this method, this research aims to present a comprehensive and in-depth review of technology integration in MSME digital marketing and provide useful insights for developing marketing strategies and digital transformation in the MSME sector.

RESULTS AND DISCUSSION

Digitalization is the key to increasing the competitiveness of SMEs (Setyawati et al., 2023), as demonstrated by Kopi Kenangan, an Indonesian coffee startup that has successfully expanded its market reach and boosted sales through the adoption of digital technology. By integrating online ordering applications and social media into their marketing strategy, Kopi Kenangan has been able to reach new customers and expedite the ordering process. This move has significantly increased sales volume and customer loyalty. The use of digital technology enables Kopi Kenangan to respond quickly and efficiently to market demands, giving them a competitive edge in the increasingly competitive coffee market. This success underscores the importance of technological innovation in supporting the growth and sustainability of SMEs in the digital era.

ChatGPT can be very effective in enhancing customer service (Abdelkader, 2023). Zalora, the largest fashion e-commerce platform in Southeast Asia, uses AI-based chatbots to handle customer inquiries automatically. The use of ChatGPT at Zalora allows them to provide quick answers to common questions and direct customers to relevant products, reducing the workload of customer service staff and increasing customer satisfaction. With ChatGPT, Zalora can serve customers around the clock without interruption, ensuring that customer queries and issues are addressed promptly, ultimately strengthening customer loyalty. This technology also helps gather important data on customer preferences and shopping behavior, which can be used to refine marketing strategies and offer a more personalized shopping experience. The integration of ChatGPT improves operational efficiency and adds significant value in terms of customer satisfaction and retention.

Integrating ChatGPT with Management Information Systems (MIS) can optimize management and marketing (Sudirjo et al., 2023). Tokopedia, one of the largest e-commerce platforms in Indonesia, integrates ChatGPT with their management system to process customer data and provide personalized product recommendations. This allows Tokopedia to tailor offers based on customer behavior and market trends, increasing the relevance of marketing and sales. With ChatGPT, Tokopedia can analyze data in real-time, which helps them make faster and more accurate strategic decisions. Additionally, this technology enables Tokopedia to run more effective marketing campaigns with specific target audiences, optimizing marketing budget usage and maximizing ROI. This more personalized shopping experience enhances customer satisfaction and fosters long-term loyalty. Through this efficient integration, Tokopedia can maintain its competitive edge in the highly dynamic and rapidly evolving e-commerce market.

The use of Management Information Systems (MIS) can help SMEs in better operational management (Syaputra, 2024). For example, Kedai Kopi Kulo uses MIS to track inventory and sales management across their various locations. Data obtained from the MIS allows Kedai Kopi Kulo to manage stock effectively and respond quickly to customer demands, reducing stock shortages and overages. The use of MIS enables them to monitor daily sales, purchasing trends, and raw material availability in real-time, allowing for necessary adjustments to be made immediately. Additionally, the MIS helps in planning future stock needs based on historical data analysis, reducing the risk of shortages or surpluses that can negatively impact operations. Implementing MIS enhances operational efficiency and effectiveness, helping Kedai Kopi Kulo

provide better service to customers, ultimately increasing customer satisfaction and loyalty.

Marketing automation using ChatGPT offers great advantages for e-commerce companies (Mutoffar et al., 2023). For instance, Shopee uses ChatGPT to manage targeted marketing campaigns through emails and in-app messages. This system generates marketing content tailored to user preferences, helping Shopee increase engagement and conversion in an efficient and measurable way. The utilization of ChatGPT allows Shopee to analyze user data to understand their preferences and shopping behavior, enabling the creation of more relevant and engaging marketing messages. This technology also enables timely message delivery, targeting users with promotions and product recommendations that match their interests. Additionally, this marketing automation reduces the workload of the marketing team, allowing them to focus on more creative campaign strategies and development. As a result, Shopee has seen an increase in user engagement and conversion rates, contributing to significant revenue growth. The integration of ChatGPT in marketing automation shows how technology can be used to achieve higher operational efficiency and marketing effectiveness in the e-commerce industry.

Adopting digital technology often comes with significant challenges (K Vimal K.E. et al., 2023). Gojek, known as one of the largest unicorns in Southeast Asia, faced various challenges in scaling and system integration when expanding its services. As Gojek sought to combine various services such as transportation, food delivery, and digital payments into one platform, they encountered system complexity issues requiring a strong and well-integrated technology infrastructure. Infrastructure limitations became one of the main barriers, especially in ensuring that all services could run smoothly without interruptions. Additionally, staff training was a major challenge, as employees needed to be equipped with sufficient knowledge and skills to operate and maintain the new technology. Gojek had to invest significant time and resources to ensure that all employees understood and could effectively use the new systems. These challenges highlight that in addition to the benefits that can be obtained from adopting digital technology, companies must also be prepared to overcome various obstacles to ensure successful and sustainable technology implementation.

Digital technology enhances customer experience by providing more responsive and personalized service (Baddam, 2022). Traveloka, as a leading travel platform, utilizes chatbot technology to assist customers in various aspects, from the ticket booking process to providing destination and accommodation recommendations. The use of chatbots allows Traveloka to offer 24/7 service, making it easier for users to get help whenever they need it. These chatbots are designed to provide quick and accurate answers to common questions, guide users through each step of the booking process, and offer recommendations based on their preferences and search history. This makes the booking process more efficient and reduces the waiting time typically required to get assistance from human staff. The faster and more efficient customer experience significantly increases customer satisfaction, as they feel prioritized and understood. Additionally, the use of chatbots enables Traveloka to collect valuable data on customer preferences, which can then be used to refine services and offer increasingly personalized experiences. The adoption of chatbot technology enhances operational efficiency and strengthens customer loyalty by providing responsive and relevant service.

Organizational culture transformation is a key element in supporting the adoption of new technology (Bozkus, 2023), as evidenced by the steps taken by Unilever Indonesia. The company actively promotes cultural changes by fostering innovation and technology at all levels of the organization. To ensure that every employee understands and effectively adopts new technology, Unilever Indonesia conducts various specially designed training sessions and workshops. Through these programs, employees have the opportunity to learn about the latest technologies, understand how to use them in their work context, and develop the skills needed to operate the technology efficiently. Beyond formal training, Unilever also creates an environment that encourages employees to experiment with innovations and provides space for new ideas. This approach helps build a sense of ownership and engagement among employees, motivating them to adapt to technological changes. As a result, the company can maintain its competitive edge in a rapidly changing market, as employees can leverage technology to enhance productivity, efficiency, and

creativity. Unilever Indonesia's organizational culture transformation demonstrates that adopting new technology is not just about investing in hardware and software but also about building a cultural foundation that supports innovation and change.

The use of data from Management Information Systems (MIS) can significantly enhance marketing strategies (Alzhrani, 2020), as shown by H&M. The global retail company leverages data collected from its management systems to design more effective and targeted marketing campaigns. By analyzing customer shopping behavior through MIS, H&M can more accurately identify consumer trends and preferences. This information allows them to tailor product offerings and promotions to be more relevant and appealing to their target audience. For instance, if data shows an increase in interest in a particular category of clothing, H&M can promptly respond by promoting related products through personalized advertising campaigns. Additionally, data from MIS helps H&M in market segmentation, allowing them to group customers based on demographics, purchase history, and style preferences. H&M can then execute more customized campaigns, such as exclusive offers for loyal customers or special promotions to re-engage inactive customers. This data-driven approach increases the effectiveness of marketing campaigns and optimizes advertising spend, ensuring that marketing budgets are used efficiently to achieve maximum results. Utilizing data from MIS helps H&M stay competitive in a highly dynamic and ever-evolving market and strengthens customer relationships through more relevant and timely communication.

Management Information Systems (MIS) play a crucial role in better stock and inventory management (Setyadi et al., 2024), as implemented by IKEA. The global furniture company uses MIS to track inventory and plan stock requirements across various locations efficiently. Through this system, IKEA can monitor inventory levels in real-time, identify fast- or slow-moving products, and adjust stock reordering based on actual data. This helps IKEA reduce excessive storage costs and ensure that necessary products are always available to customers. Additionally, MIS enables IKEA to optimize product distribution between different warehouses and stores, reducing wait times and speeding up product delivery to customers. The system also aids in strategic planning, such as determining when to hold promotions or discounts based on existing stock levels. Using MIS supports leaner and more responsive operations, reducing the risk of stock shortages or surpluses that can negatively impact customer satisfaction. Through careful and efficient inventory management, IKEA can provide better service to its customers, increase consumer trust and loyalty, and maintain a competitive edge in the highly competitive global furniture market.

Stakeholder involvement is a critical factor in the successful implementation of technology (Prebanić & Vukomanović, 2023), as demonstrated by Bank Mandiri. In the process of adopting new technology, Bank Mandiri actively involves various parties, including managers, employees, and customers. Involving managers helps ensure that technology strategies align with broader business and operational goals, while employees receive training and support to understand and use new technologies effectively. Customers are also engaged through transparent communication and feedback, allowing the bank to tailor technology more closely to their needs and preferences. This approach enables Bank Mandiri to identify and address potential issues early on, such as technical difficulties or resistance to change. This involvement also helps improve the implementation process, minimize operational disruptions, and ensure that the technology implemented meets the expectations and needs of all stakeholders. Additionally, stakeholder involvement allows Bank Mandiri to build support and trust throughout the organization and among customers, which is crucial for the successful adoption and acceptance of new technology. This approach ensures that technology is implemented effectively and delivers maximum benefits to the bank and its customers, strengthening its competitive position in a highly dynamic market.

Investing in digital technology often yields significant long-term benefits (Solanki et al., 2020), as seen in Amazon's approach. The e-commerce giant consistently invests in the latest technology to improve operational efficiency and enhance customer experience. For example, Amazon has integrated automation and artificial intelligence in its logistics and warehouse management processes, enabling faster and more accurate order processing. Additionally,

investments in technologies such as AI-based recommendation systems and chatbots have allowed Amazon to offer a more personalized and responsive shopping experience, increasing customer satisfaction and loyalty. Technology is also used to optimize the supply chain and minimize operational costs, contributing to competitive pricing. By continuously innovating and adopting advanced technologies, Amazon can maintain its position as a global e-commerce leader, face intense competition, and meet evolving customer expectations. These investments support short-term growth and ensure the company's long-term competitiveness in a highly dynamic and competitive industry.

Integrating Management Information Systems (MIS) and ChatGPT requires careful planning and execution (Dwivedi et al., 2023), as exemplified by Starbucks. The coffee company combines AI-based chatbot technology with MIS to enhance customer service and overall operational management. The structured approach applied in this process includes a thorough planning phase, where technology and operational teams collaborate to design seamless integration and ensure compatibility between both systems. After planning, Starbucks implements the integration in stages, starting with training staff to understand and utilize the new technology, and adjusting the system based on initial feedback. MIS allows Starbucks to monitor and manage customer data more effectively, while ChatGPT provides quick responses to customer inquiries and enhances interactions across various communication channels. This strategy enables Starbucks to improve operational efficiency, such as inventory management and order processing, while also enhancing the customer experience by offering faster and more personalized service. The structured approach in this integration ensures that each aspect of the technology functions optimally, supports company goals, and meets customer expectations.

For SMEs, starting with pilot projects is a highly effective strategy for adopting new technology (Mishrif & Khan, 2023). Gojek, for instance, employs this approach by launching small-scale trials before fully implementing new technology. By starting with pilot projects, Gojek can identify and address various issues that may arise at the early stages, such as technical problems or difficulties in integrating with existing systems. This process involves a thorough evaluation of trial results, allowing the company to make necessary adjustments and effectively tackle initial challenges. Additionally, pilot projects provide an opportunity to gather feedback from early users and stakeholders, which is invaluable for ensuring that new technology meets the needs and expectations of all parties. This way, Gojek can minimize the risk of failure and ensure that the adoption of new technology is carried out more smoothly and successfully. This approach also enables the company to manage its budget more effectively, as they only need to invest resources on a small scale before deciding to proceed with a broader implementation. As a result, pilot projects help SMEs like Gojek optimize the use of new technology, improve operational efficiency, and enhance services without facing the significant risks associated with launching new technology directly on a full scale.

Digital technology will continue to play a crucial role in the future of SMEs (Bagale et al., 2023), with Tokopedia being a prime example of how companies can leverage technology to meet customer needs and keep up with ever-changing market trends. Tokopedia actively updates its technology and strategies to ensure that its platform remains relevant and competitive in a dynamic market. For instance, they continually integrate new features such as artificial intelligence for personalized product recommendations and data analytics to understand customer behavior. Additionally, Tokopedia invests in advanced security technology and payment systems to enhance the shopping experience and provide customers with a sense of security. This approach allows Tokopedia to stay adaptable to changing consumer preferences and market challenges, strengthening its position as a major player in the e-commerce industry. By continuously adopting and developing digital technology, SMEs like Tokopedia can maintain their competitiveness, meet evolving customer expectations, and achieve sustainable growth in an increasingly competitive and digital business environment. Digital technology helps SMEs improve operational efficiency and opens new opportunities for innovation and market expansion, which are crucial for long-term success.

This discussion leverages case studies from well-known companies to provide concrete

examples of the application of digital technology, ChatGPT, and Management Information Systems (MIS) in the context of SMEs as well as large enterprises. By examining how companies like Starbucks, H&M, and Tokopedia implement these technologies, we can illustrate the real benefits they gain, such as improved operational efficiency, better inventory management, and more personalized customer experiences. These case studies also reveal the challenges faced during the adoption process, such as the need for careful planning, staff training, and complex system integration. Through these concrete examples, the discussion not only demonstrates how digital technology can strengthen competitiveness and support growth but also provides insights into successful strategies and solutions for overcoming potential obstacles. In this way, the discussion offers a more in-depth and practical view of technology implementation in the real world and how SMEs and large enterprises can learn from the experiences and strategies implemented by leading industry players.

Table 1. Key Findings on Digital Marketing Innovation for SMEs Through ChatGPT and Management Information Systems Integration

No	Aspect	Key Finding
1	Role of Digitalization	Digitalization helps MSME expand market reach, improve sales, and enhance operational efficiency. Example: Kopi Kenangan expanded market and increased sales through online ordering and social media.
2	Effectiveness of ChatGPT	ChatGPT enhances customer service by providing quick and accurate responses. Example: Zalora uses ChatGPT to manage customer inquiries and improve satisfaction.
3	Integration with MIS	Combining ChatGPT with MIS optimizes operations and marketing. Example: Tokopedia uses integration to provide personalized product recommendations.
4	Case Study: MIS Usage	MIS helps in effective inventory and sales management. Example: Kedai Kopi Kulo uses MIS to manage stock levels and respond to customer demand efficiently.
5	Marketing Automation	ChatGPT automates personalized marketing, improving engagement. Example: Shopee uses ChatGPT for targeted email and in-app campaigns.
6	Challenges	Technology adoption can face challenges like infrastructure limitations and staff training. Example: Gojek faced scaling and integration challenges.
7	Customer Experience	Technology improves customer experience by offering faster and more personalized services. Example: Traveloka uses technology to streamline booking processes and enhance user satisfaction.
8	Organizational Culture	Changing organizational culture supports successful technology adoption. Example: Unilever Indonesia fosters innovation and provides training.
9	Data and Analytics	Utilizing data from MIS and ChatGPT enhances marketing strategies. Example: H&M leverages data to tailor marketing campaigns effectively.
10	Stock Management	MIS optimizes stock and inventory management, reducing costs. Example: IKEA uses MIS for real-time inventory tracking.
11	Stakeholder Involvement	Engaging stakeholders in technology adoption is crucial. Example: Bank Mandiri involves managers, staff, and customers in the process.

No	Aspect	Key Finding
12	Long-Term Success	Sustainable investment in technology leads to long-term benefits. Example: Amazon's ongoing investment in technology ensures market leadership.
13	Technology Integration	Careful planning and execution are necessary for integrating MIS and ChatGPT. Example: Starbucks integrates both systems to improve operations and customer service.
12	Recommendations for MSME	Start with pilot projects, provide adequate training, and use data for marketing. Example: Gojek suggests starting small to identify and solve issues before full implementation.

CONCLUSION

Digitalisation, through the implementation of technologies such as ChatGPT and Management Information System (MIS), has had a significant impact on MSMEs in improving their competitiveness. The integration of ChatGPT with MIS not only improves operational efficiency but also enriches the customer experience through more responsive and personalised services. Case studies from companies such as Tokopedia, Zalora, and Kopi Kenangan show that the adoption of digital technology can expand market reach, increase sales, and improve stock management. Meanwhile, challenges such as infrastructure limitations and staff training needs need to be overcome to ensure successful technology adoption. The long-term success of digital technology demonstrates the importance of continuous investment and adaptation to evolving market trends. Suggestions that can be given for the results of this research are:

1. Investment in Technology: MSMEs are advised to make gradual investments in digital technology, starting with trials or pilot projects. This allows them to evaluate the effectiveness of the technology before full implementation, as done by Gojek and Tokopedia.
2. Staff Training and Development: It is important to provide adequate training for staff so that they can utilise new technologies effectively. Companies such as Unilever Indonesia and Starbucks show that good training can help overcome technical and cultural barriers.
3. Stakeholder Involvement: Involving various stakeholders in the technology adoption process is crucial. Bank Mandiri, for example, involves managers, staff, and customers to ensure the implemented technology meets the needs of all parties.
4. Data Optimisation and Analytics: MSMEs should utilise the data generated from MIS and ChatGPT to design more effective marketing strategies. H&M and Shopee demonstrate how data analytics can improve campaign relevance and increase customer engagement.
5. Stock and Inventory Management: The use of MIS in stock and inventory management can help reduce costs and improve efficiency. IKEA and Kedai Kopi Kulo provide examples of how MIS can optimise stock management.
6. Flexibility in Technology Adoption: MSMEs must be ready to adapt to changes and overcome challenges that arise during the technology adoption process. Companies like Gojek face challenges in scale and system integration, which highlights the importance of flexibility and adaptability.
7. Improved Customer Experience: A focus on improving customer experience through technologies such as ChatGPT can increase customer satisfaction and loyalty. Zalora and Traveloka show how technology can improve customer service by providing quick and relevant responses.
8. Continuous Monitoring and Evaluation: It is important to continuously monitor and evaluate the use of technology to ensure that the expected benefits are achieved. Companies like Amazon and Tokopedia are constantly updating their technology to stay competitive.

By following these suggestions, MSMEs can maximise the benefits of digital technology adoption and maintain competitiveness in an increasingly competitive market.

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