The Role of ChatGPT in Business Information Systems to Support Strategic Decision Making in Medium-Scale Enterprises

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ABSTRACT

Medium-scale companies often operate in dynamic and competitive business environments. Faced with market changes and new opportunities, timely and accurate strategic decisions are key to maintaining and enhancing the competitiveness of the company. This research aims to examine the role of ChatGPT in business information systems to support strategic decision-making in medium-scale enterprises. The research method employed is a literature review with a qualitative approach and descriptive analysis. Descriptive analysis will be used to present information from systematically selected articles from Google Scholar within the timeframe of 2014-2024. The study results indicate that in the continuously evolving digital era, medium-scale companies increasingly rely on technology to address increasingly complex business challenges. One innovation playing a significant role in today's business landscape is the presence of ChatGPT. As an artificial intelligence model capable of understanding and generating text naturally, ChatGPT has a significant impact on business information systems and supports strategic decision-making in these companies.

Keywords: ChatGPT, Business Information Systems, Decision Making, Medium-Scale Enterprises

INTRODUCTION

In the face of constantly evolving and competitive business environments, medium-scale enterprises often encounter significant challenges in adapting to changing market dynamics and exploiting emerging opportunities (Ausat & Peirisal, 2021). In this context, timely and accurate strategic decision-making becomes essential to maintain and enhance the competitive position of the company. Alignment between strategic decisions and the long-term vision of the company, along with a deep understanding of market trends and competitors, forms the foundation for ensuring long-term success and business sustainability.

With the advancement of technology, medium-scale enterprises are confronted with significant challenges in managing the increasingly extensive volume of data and its escalating complexity. This data encompasses information from various sources, ranging from internal company data covering operations and finances, to customer data including preferences and behaviors, as well as market data reflecting industry trends and dynamics. Effectively aligning, managing, and analyzing such data becomes essential for these companies to gain valuable insights.
in the strategic decision-making process. The alignment between in-depth data analysis and the long-term goals of the company, coupled with the ability to extract relevant and actionable information from the data, is key to gaining a competitive advantage amid intensifying competition (Mızrak, 2023).

ChatGPT represents the latest evolution in artificial intelligence (AI) and natural language processing (NLP). With its continually improving capabilities in understanding and generating text akin to human mannerisms, ChatGPT emerges as a highly potent tool in automating complex data analysis processes and providing valuable insights to decision-makers at various levels of the company. By harnessing this technology, companies can enhance their operational efficiency, optimize business strategies, and respond swiftly to market changes, thereby improving their competitiveness in dynamic and competitive business environments (Ausat & Suherlan, et al., 2023).

The phenomenon of adopting chatbots and virtual assistants has become increasingly common across various industry sectors, including but not limited to e-commerce, customer service, and marketing strategies. In the context of medium-scale enterprises, the use of this technology offers significant potential to enrich customer interactions and provide efficient resources to support internal decision-making processes (Subagja et al., 2023). It is speculated that through the utilization of chatbots and virtual assistants, these companies can enhance customer service accessibility, improve operational efficiency, and even expand their market reach through innovative digital platforms. The alignment between the implementation of this technology and the company's business strategy, along with a deep understanding of customer needs, is key to maximizing the benefits of investing in chatbot and virtual assistant solutions.

Although technologies like ChatGPT offer various promising potentials, medium-scale enterprises may face challenges in successfully implementing and managing such technology optimally. Resource constraints, both in terms of finances and human resources, as well as limitations in technical capacity to implement and manage this technology, may pose significant hurdles for some companies (Ausat & Suherlan, 2021). Furthermore, the organizational adaptation process required to integrate this new technology into the company culture and existing workflow processes can also present its own challenges. Careful strategies and appropriate investments in training and developing human resources may be necessary to overcome these limitations and ensure the successful implementation of new technologies like ChatGPT in the context of medium-scale enterprises.

Amidst increasingly competitive and dynamic business environments, medium-scale enterprises are required to implement effective differentiation strategies to enhance their competitive advantage and provide significant value to customers. In this context, the adoption of technological innovations becomes an urgent necessity. Through the implementation of advanced technology and appropriate digital solutions, these companies can create strong differentiation in products, services, and customer experiences. By optimizing the use of technology, both in terms of enhancing operational efficiency and creating value through innovative products and services, medium-scale enterprises can strengthen their position in the market and maintain their competitiveness in the future (Harahap, Kraugusteeliana, Pramono, Jian, et al., 2023; Prastyaningtyas et al., 2023; Sutrisno et al., 2023). The alignment between technology innovation strategies and the long-term vision of the company, coupled with a deep understanding of customer needs and expectations, is key to the success of these differentiation efforts. Therefore, this research aims to examine the role of ChatGPT in business information systems to support strategic decision-making in medium-scale enterprises.

**LITERATURE REVIEW**

**ChatGPT**

ChatGPT, short for "Generative Pre-trained Transformer," is an artificial intelligence model developed by OpenAI (Harahap, Junianto, Astutik, Risdiwiyanto, et al., 2023). Built upon the Transformer architecture, ChatGPT has proven highly effective in natural language processing. It can generate text resembling human language, whether in the form of answers to questions, storytelling, or informal conversation (Fauzi et al., 2023; Sudirjo, Diantoro, et al., 2023). This capability is achieved through extensive training on large-scale data from various sources on the
internet. Leveraging advanced natural language processing, ChatGPT can understand and respond to text with complex contexts, enabling its use in various applications, from automated customer service to virtual assistants across industries. Through its natural language processing capabilities, ChatGPT has become a noteworthy technology in the field of artificial intelligence and is widely utilized in various commercial applications and research.

**Business Information Systems (BIS)**

Business Information Systems (BIS) refer to the use of information technology and computer systems to collect, store, manage, and analyze relevant data for operational activities and decision-making within a business organization (Aydiner et al., 2019) and (Heriyanto, Oktavianda, & Suprihartini, 2022). BIS is designed to provide accurate, timely, and relevant information to internal stakeholders of the company, such as management, employees, and business owners, as well as external stakeholders such as business partners, customers, and financial parties (Qu et al., 2019). BIS encompasses not only technological infrastructure but also procedures, policies, and people involved in managing and using this information (Heriyanto, 2022a); (Heriyanto, 2022b) and (Heriyanto, Lubis, et al., 2020). The primary goal of BIS is to enhance operational efficiency, support better decision-making, and create competitive advantages for companies by strategically leveraging information (Ali, 2019). By integrating data from various internal and external sources, BIS helps organizations understand market trends, predict customer demand, identify new business opportunities, and respond to changes in the business environment more quickly and effectively.

**Decision-making**

Decision-making is a mental and practical process in which an individual or a group selects one option from several alternatives based on the evaluation of available information (Scholl et al., 2016). This process involves identifying problems or opportunities, gathering relevant data, analyzing information, considering various factors influencing the decision, and ultimately choosing the action or decision deemed most adequate or effective in achieving desired goals (Berisha Shaqiri, 2014). Decision-making can occur in various contexts, both in personal life and within organizational scopes, ranging from simple to complex decisions. This process is often influenced by various factors such as personal preferences, values, goals, risks, and resource limitations (Hallo et al., 2020). The importance of good and effective decision-making is significant, as sound decisions can lead to success and progress, while poor decisions can result in detrimental consequences or even fatal outcomes (Abubakar et al., 2019). Therefore, the ability to make good decisions is a crucial skill for individuals and organizations to achieve their goals.

**Medium-Scale Enterprises**

Medium-scale enterprises are businesses that fall between small and large scales, often defined based on criteria such as the number of employees, annual revenue, or asset value (Harahap, Ausat, & Suherlan, 2023). Generally, medium-scale enterprises have characteristics such as fewer employees compared to large corporations, moderate turnover or revenue, and operational and managerial complexity that lies between small and large companies (Arjang et al., 2023). Medium-scale enterprises often play a crucial role in the economy as they can be significant sources of economic growth, create employment opportunities, and contribute to innovation and industrial development (Rijal et al., 2023). However, medium-scale enterprises also face unique challenges, including limited access to financial and technological resources, fierce competition from large corporations and small businesses, and the need to manage risk and growth wisely (Metris et al., 2024). Therefore, appropriate support from governments (Heriyanto, Debbie Yuari Siallagan, et al., 2020), financial institutions, and the local business ecosystem is essential to support the development and success of medium-scale enterprises.

**RESEARCH METHOD**

The research method employed in this study is a literature review with a qualitative approach and descriptive analysis. The qualitative approach is utilized to explore and understand emerging themes from existing literature, focusing on interpretation and in-depth understanding.
Descriptive analysis will be used to present information from systematically selected articles from Google Scholar within the timeframe of 2014-2024. Initial data obtained from Google Scholar encompassed 50 articles, however, after undergoing strict selection based on inclusion and exclusion criteria, only 31 articles were deemed relevant and aligned with the research objectives. These articles will be comprehensively analyzed to identify main themes, important findings, and trends related to the role of ChatGPT in business information systems to support strategic decision-making in medium-scale enterprises. This analysis will provide a deeper understanding of the contributions of previous research in this field and highlight aspects that need to be considered in further research.

**RESULTS AND DISCUSSION**

In the ongoing digital era, technology has become a cornerstone for numerous companies, particularly those operating at a medium scale, in tackling increasingly complex business challenges. One innovation that has significantly transformed the business landscape is the emergence of ChatGPT. Short for "Generative Pre-trained Transformer," ChatGPT is an artificial intelligence model capable of understanding and generating text naturally. The role played by ChatGPT in the context of business information systems is crucial, as it can provide essential support in the strategic decision-making process in medium-scale enterprises (Sudirjo, Ausat, et al., 2023).

Initially, ChatGPT can function as a highly useful business data analysis tool (Ausat, Rachman, et al., 2023). With its capability to comprehensively understand human language, ChatGPT can extract crucial information from various data sources, including internal company data and external data such as market trends, consumer behavior patterns, and industry updates. With this capability, companies can gain deep insights into market conditions and competition, facilitating more informed and intelligent strategic decision-making.

Moreover, ChatGPT can also serve as a virtual assistant in facilitating decision-making processes (Sudirjo, Diawati, et al., 2023). Through its ability to interpret questions and requests from users, ChatGPT can provide recommendations based on accumulated data. For example, in the context of strategic planning, ChatGPT can assist in formulating various scenarios and predicting the potential impacts of various business decisions.

Furthermore, ChatGPT can be maximized to strengthen communication and collaboration within the company. By providing chat features and virtual assistants, ChatGPT becomes a valuable tool in disseminating information quickly and efficiently to all team members. Its presence plays a crucial role in ensuring that every individual is involved in the decision-making process and has a uniform understanding of the company's strategies. Thus, alignment and unity of vision can be achieved among team members, thereby enhancing productivity and cohesion within the organization (Muhamad et al., 2023; Satriadi et al., 2022).

However, the utilization of ChatGPT in the realm of business information systems also poses various challenges that need to be addressed. One of these is the complexity related to data security and user privacy. With the possibility of sensitive information leakage through the ChatGPT platform, it is essential for companies to prioritize efforts to ensure that the systems used are adequately safeguarded and protected from potential cyber attacks that could jeopardize data integrity and confidentiality (Basir et al., 2023; Harahap, Ausat, Rachman, et al., 2023; Jusman et al., 2023). Therefore, implementing stringent security policies and advanced encryption technologies becomes crucial in maintaining user trust and shielding the company from cyber security threats that could disrupt operational continuity and damage the company's reputation.

Substantially, the role played by ChatGPT in the context of business information systems, particularly in supporting the strategic decision-making process in medium-scale operational companies, demonstrates its undeniable relevance and significance. Its proven ability to perform data analysis, deliver accurate recommendations, and enhance internal communication flow makes ChatGPT an invaluable asset for companies facing increasingly complex business challenges in this digital era (Ausat, Azzaakiyyah, et al., 2023). With the support of ChatGPT, companies can...
optimize their potential in managing data, formulating intelligent strategies, and fostering strong cohesion among team members, thereby strengthening the company's position in the competitive market (Heriyanto, Oktavianda, & Sihombing, 2022). As a logical consequence of this, the adoption of ChatGPT technology becomes a necessity for companies that wish to remain relevant and compete effectively in the ever-changing and dynamic business landscape.

In a more specific context, mid-sized companies often face challenges in managing their resources efficiently. ChatGPT can act as an effective tool in addressing these challenges in ways such as:

- **Automated Processing:** Utilising ChatGPT in the context of automating administrative tasks has the potential to improve a company's operational efficiency. The tool is capable of handling a number of repetitive tasks such as order processing, meeting scheduling, and inventory management. The impact is a reduction in administrative workload, which in turn allows company teams to allocate their resources and attention towards more strategic tasks, increasing productivity and focusing on achieving long-term business goals.

- **Customer Sentiment Analysis:** In order to improve the understanding of customer needs and preferences, the utilisation of ChatGPT becomes an invaluable instrument. Through its ability to analyse sentiment from various sources such as customer reviews, feedback, and social media interactions, ChatGPT provides deep insight into customer perceptions and responses to a particular product or service. The results of this analysis can provide a solid foundation for the development of more targeted and effective marketing strategies, and can guide the product development process to better suit market needs. Thus, the use of ChatGPT in analysing customer sentiment makes a significant contribution to the company's efforts in achieving competitive advantage and better customer satisfaction.

- **Demand and Sales Prediction:** Through the integration of historical sales data with relevant market information, ChatGPT becomes a crucial tool in the effort to project product demand as well as identify likely sales trends in the future. By analysing past buying patterns and applying an understanding of current market dynamics, ChatGPT can provide a more detailed and targeted forecast of how demand for a particular product will react to changing external factors. These predictive results provide a solid foundation for companies to conduct inventory planning that is more timely, efficient, and responsive to evolving market needs. Thus, the utilisation of ChatGPT in analysing and forecasting sales trends generates significant added value in efforts to improve supply chain management and ensure optimal product availability for consumers.

- **Information Filtering:** In the context of a business environment that tends to get caught up in information overload, ChatGPT's role as an information filter becomes increasingly important and substantial. Its ability to understand user preferences and context and the associated business dynamics allows it to intelligently filter through the flood of available information and present only that which is most relevant and valuable to the user. Through careful analysis and deep understanding of individual needs and changing business circumstances, ChatGPT acts as an agent that steers users towards the most relevant and decision-beneficial knowledge. As such, ChatGPT is not just a technology tool, but also a catalyst for increased productivity and effectiveness in the business decision-making process amidst the overwhelming complexity of information.

- **Virtual Assistant for Employee Training and Development:** The use of ChatGPT as a virtual assistant in the context of employee training and development signifies the evolutionary role of technology in supporting self-directed learning in the work environment. With its ability to provide instant access to a wide array of information and learning resources, ChatGPT bridges the gap between the ever-evolving need for knowledge and the limited time and resources employees have. As an intelligent and responsive tool, ChatGPT can personally recommend learning materials that suit individual needs and interests, accelerate the learning process, and enable employees to develop their skills according to their job demands and career aspirations. As such, the use of ChatGPT in the context of employee training promises a significant transformation in the workplace learning paradigm, enabling the achievement of individuals'
full potential and the improvement of overall organisational performance.

While ChatGPT offers a wide array of benefits to mid-sized organisations, the key essence lies in understanding that this technology cannot be considered as a universal solution capable of addressing all challenges faced. In adopting ChatGPT, organisations need to adopt a careful and thoughtful approach that involves integrating the technology into a broader business strategy. Data security integrity, relevant regulatory compliance, and consideration of sustainability principles are crucial aspects that must be considered in the use of ChatGPT. With a holistic and integrated approach, companies can optimise the full potential of ChatGPT to support better strategic decision-making, strengthen business resilience, and accelerate the achievement of their long-term goals.

CONCLUSION

In the ever-evolving digital era, medium-sized companies increasingly rely on technology to address the growing complexity of business challenges. One innovation playing a significant role in today’s business landscape is the presence of ChatGPT. ChatGPT, as an artificial intelligence model capable of understanding and generating text naturally, has a profound impact on business information systems and supports strategic decision-making in these companies. Recommendations based on the findings of this study include:

1. Utilizing ChatGPT to analyze business data more efficiently, allowing companies to gain deep insights into market conditions and competition.
2. Using ChatGPT as a virtual assistant to provide relevant recommendations in strategic decision-making processes, such as strategic planning and predicting the impact of business decisions.
3. Enhancing communication and collaboration within the company by leveraging ChatGPT’s chat features and virtual assistant capabilities.
4. Paying attention to data security and user privacy when using ChatGPT in business information systems, ensuring that the systems used are protected from cyber attacks.
5. Integrating the use of ChatGPT with broader business strategies while considering factors such as security, compliance, and sustainability.

With a holistic and integrated approach, medium-sized companies can harness the full potential of ChatGPT to support strategic decision-making and achieve long-term success in this digital era.

REFERENCES


