



Developing Management Information Systems Creates Competitive Advantages for Businesses

Nguyen Van Thuy^{1*}

¹Academic Affairs, Banking Academy of Vietnam, Ha Noi, Vietnam.

***Corresponding Author**

E-mail: thuynv@hvn.edu.vn

ABSTRACT

In the context of digital solid transformation, the development of management information systems (MIS) has emerged as a critical strategy for businesses striving to achieve competitive advantage. MIS enables firms to innovate by facilitating the creation of new products or services, enhancing existing offerings, and establishing unique differentiators that set them apart from competitors. Through these capabilities, MIS not only supports the introduction and improvement of products but also strengthens competitive positioning by creating distinctive value propositions for customers. Additionally, MIS enhances organizational competitiveness by optimizing and streamlining business processes. By improving operational efficiencies and enabling data-driven decision-making, MIS supports businesses in responding rapidly to market demands and effectively managing resources. These improvements can lead to a more agile organization capable of sustaining advantages in dynamic market conditions. This study examines the multifaceted role of MIS in fostering competitive advantage within businesses. It analyzes the mechanisms through which MIS supports innovation, differentiation, and process improvement and proposes strategies to further leverage MIS as a critical asset in achieving competitive advantage. The findings aim to guide organizations in optimizing their MIS development efforts to sustain and enhance their competitive positioning in an increasingly digital landscape.

Keywords: Management information systems, Competitive advantage, Digital transformation, Businesses.

Introduction

The 4.0 revolution has promoted the digital transformation process of businesses strongly towards the goals of reducing costs, increasing revenue, and increasing market share, thereby increasing the competitive advantage of businesses amid the intense competition in today's digital economy. Digital transformation in business is the process of using data and digital technology to change all aspects of an enterprise's business operations comprehensively. In the technology era, technology applications have profoundly changed the way businesses manage and operate their systems while creating new platforms for providing products and services to customers. The management information system (MIS) plays the role of a bridge between the technology and business of the enterprise towards the strategic goals of the enterprise (Le *et al.*, 2020). This article identifies how management information systems participate and create competitive advantages for businesses, thereby proposing solutions to develop management information systems that create competitive advantages for businesses in the context of today's strongly developing digital economy.

Overview of Management Information Systems and Competitive Advantage

Understanding how management information systems can create competitive advantages for businesses requires a thorough knowledge of information systems, management information systems, competitive advantage, and competitive strategy.

Received: 28.11.2024 –Accepted: 23.02.2025 –Published: 15.03.2025

© 2025 Journal of Organizational Behavior Research. **Open Access** - This article is under the CC BY NC SA license (<https://creativecommons.org/licenses/by-nc-sa/4.0/>)



There are three terms: Information Technology (IT), Information System (IS), and Management Information System (Management Information System) that need to be clearly defined. According to Kroenke and Boyle (2022), Information Technology (IT) refers to the products, methods, inventions, and standards used, to produce information. Information technology includes hardware, software, and data. Information system (IS) is a collection of hardware, software, data, procedures and people that create information, meaning $IS = IT + Process + People$. Information systems include five components: IT (hardware, software, data), processes, and people, as shown in **Figure 1**.

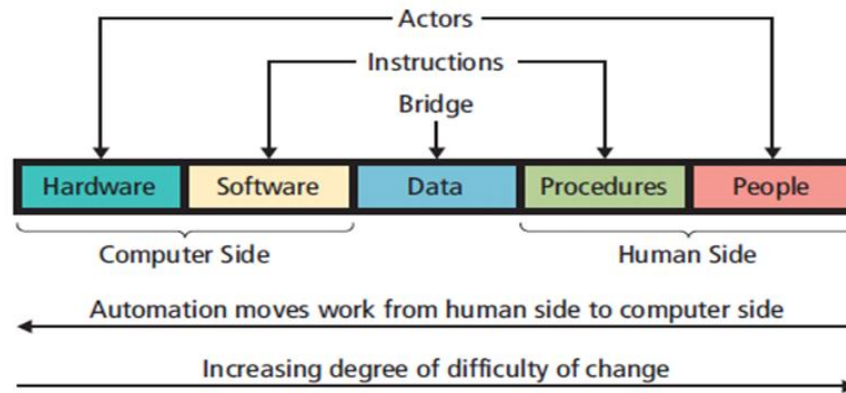


Figure 1. Five-components model of an information system
Source: Kroenke and Boyle (2022)

Management information system is the development and use of information systems that help businesses achieve strategic goals.

Competitive Advantage

The concept of competitive advantage was first mentioned by M. Porter (1985) and developed into the theory of competitive advantage. According to Barney (1991), "A business is said to have a competitive advantage when it implements a value creation strategy that no current or potential competitors can implement. The essence of competitive advantage is that a business creates higher value for customers and brings higher profits to the business. According to Porter (1985), "competitive advantage has two types: low-cost advantage and differentiation advantage. In particular, low-cost advantage is the advantage a business has when providing the same values/utilities as competitors but at a lower cost. Differentiation advantage is the advantage a business achieves when it provides superior values/utilities than competitors' products/services.

Competitive Strategy

According to Porter (1985), "general competitive strategy describes how a business deploys competitive advantage in its chosen market. Competitive strategy is determined according to two dimensions: scope and strategic strength. Strategic scope is demand-side, directed at the size and structure of the market the strategy aims to target. Strategic strength is on the supply side, focusing on the strength and core competencies of the business." The main competitive strategies according to M. Porter (1985) are "low-cost strategy, differentiation strategy, focus strategy".

How Management Information Systems Participate and Create Competitive Advantages for Businesses

M. Porter's (1985) theory of competitive advantage, shows that "any resource that gives a business the ability to outperform competitors can be the foundation for building advantage". Typical traditional resources of businesses include financial resources, access to natural resources, and exclusive ownership of specific limited resources. However, in the context of global competition and free integration, the above traditional resources are increasingly accessible and easily imitated. With new resources, businesses can create competitive advantages. Sustainability includes Technology and innovation; Human resources; and Organizational structure. The management information

system with its structures and characteristics has vigorously participated in the process of creating and developing the competitive advantages of businesses.

Derived from the business's strategy combined with market context analysis through industry structure analysis with "05 competitive forces, potential competitors (new entrants), substitute products and services, customers (customers/buyers), suppliers and competition between competitors in the industry (competitive rivalry), businesses determine competitive strategies. From competitive strategy to determining its competitive advantages, businesses analyze the business's value chain, thereby realizing competitive advantages through identifying business processes. Business processes are managed, organized, and implemented in information systems (Figure 2).

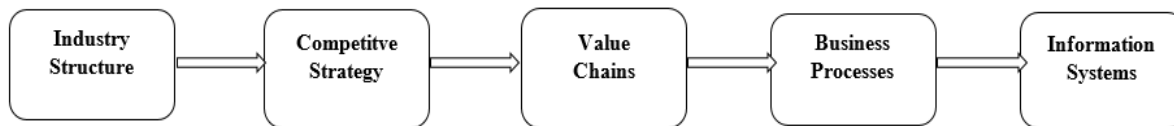


Figure 2. Competitive strategy determines a business's information systems

Source: Kroenke and Boyle (2022)

Through the above analysis, for businesses to determine their competitive advantages, they perform value chain analysis, build business processes to create competitive advantages, and thereby build systems information to carry out those business processes.

According to Porter (1985), “value chain is a set of vertically linked activities to create and increase value for customers. In terms of structure, the value chain consists of two groups: 5 main activities and 4 support activities. Five main activities include Inbound Logistics; Operations; Outbound Logistics; Marketing and Sales; and Service (Service). Four support activities include Procurement; Human Resources Management; Technological Development; and Infrastructure”. To gain and maintain competitiveness, businesses must clearly understand the components of their value chain. Enterprises build competitive advantages from the overall analysis of the enterprise along the value chain to determine the specific role of each department and its impact on competitive advantage. This is the fundamental for businesses to determine optimal business processes and then develop management information systems to implement those business processes.

The question is how information systems bring competitive advantage to businesses. Information systems provide a competitive advantage to businesses through products, services, and business processes. The first is related to products and services. Management information systems assist businesses in achieving competitive advantage by creating new products or services, enhancing existing products or services, and differentiating their products and services with those of their competitors. Information systems with 5 components: hardware, software, data, processes, and people are used by businesses to achieve strategic goals. Enterprise information systems, provide new products and services through new technology, by optimizing customer experience with the data that enterprise information systems have about customers to 360⁰ understanding of customers, thereby personalizing the best products and services to customers, creating a difference in products and services for customers (Tu, 2015; Mikalef *et al.*, 2020).

The second is related to business processes. Business processes are designed in information systems to optimize customer experience while optimizing profits for businesses, thereby creating competitive advantages for businesses in terms of customer retention, and suppliers, raising barriers to market entry, and increasing the ability to form alliances between businesses while cutting costs for businesses. Enterprise management information systems execute optimal business processes that deliver operational excellence, enable key business initiatives, and subsequently drive decision-making and organizational transformation. Management information systems from transaction processing systems to tactical and strategic information systems create synchronous, optimal, and effective operations of businesses, bringing competitive advantage for business (Rackoff *et al.*, 1985; Tu, 2015; Pearlson *et al.*, 2024).

Solutions to Develop Management Information Systems to Create Competitive Advantages for Businesses



With the role of providing information for business management, management information systems play an important role in all business activities from the operational, tactical, and strategic levels. Management information systems help businesses capture overall information about all business activities in real-time, increase business performance, and cut operating costs, thereby creating benefits. competitive position for businesses. The current strong competitive landscape requires businesses to carry out digital solid transformation in which management information systems play an essential role in creating competitive advantages for businesses. For management information systems to maximize competitive advantage, businesses, when developing and deploying management information systems, need to synchronously implement the following solutions:

Firstly, it is necessary to design an overall and synchronized information system in the enterprise. Information systems manage and provide all information for an enterprise. Still, if not designed comprehensively and synchronously, they will cause significant problems in corporate governance, thereby reducing the competitive advantage of the enterprise. Integrating discrete management information systems into a comprehensive, synchronized information system will ensure that data and information throughout the enterprise are always seamless, providing timely information support for all business activities. Platforms for integrating and sharing data from information systems in businesses need to be developed (Azeem *et al.*, 2021; Kroenke & Boyle, 2022).

Second, information systems need to flexibly adapt to emerging technology platforms flexibly. Information systems are highly adaptable to emerging technologies, operate optimally on the business's technology infrastructure, and are always ready to change without affecting business operations (Kroenke & Boyle, 2022)

Third, it is necessary to standardize business processes, thereby moving towards automated business processes in business management information systems. For information systems to be able to manage and provide complete, timely, and optimal information for businesses, business processes must be designed to be standardized and optimized.

On the other hand, the trend of automating business processes is also going strong, creating substantial competitive advantages for businesses in terms of time and costs. Another trend in management information systems that is currently of interest is intelligent business processes. Combining automation and artificial intelligence in managing business processes creates intelligent business processes and intelligent management information systems that create competitive advantages for businesses (Soeparto, 2018; UI Abdin *et al.*, 2021; Kroenke & Boyle, 2022).

Fourth is the management information system that supports the enterprise's intelligent business. Business intelligence provides knowledge and information about customers, competitors, business partners, and the competitive environment to make effective, meaningful, and strategic decisions (Borges *et al.*, 2021). Enterprise management information systems collect, manage, and provide data about all enterprise activities and data about customers, competitors, and markets. This data source is an essential basis for business intelligence, thereby creating competitive advantages for businesses (Di Vaio *et al.*, 2021; Singh & Sharma, 2022; Ogborigbo *et al.*, 2024).

Conclusion

The digital transformation process is taking place firmly in businesses today, with the highest level being digital business model transformation, including the pillars of digital infrastructure, data, business processes, and information systems. Business intelligence is the central pillar. This is also a factor that helps businesses survive in the digital technology era, limiting the risk of being eliminated in today's increasingly fierce competition context. Management information systems play the role of ensuring that all business activities operate optimally and smartly, creating competitive advantages toward the strategic development goals of the business. Based on digital technology platforms, flexible adaptation to emerging technologies, synchronous design, management of new enterprise resources such as data, and integration of automated and intelligent business processes, management information system is considered the most critical foundation for businesses to create competitive advantage in the context of today's digital economy.

Acknowledgments: The author is grateful to Banking Academy of Vietnam.

Conflict of Interest: None



Financial Support: This article was financially supported by Banking Academy of Vietnam (Grant number: 3241/QĐ-HVNH dated 01/08/2024).

Ethics Statement: None

References

- Azeem, M., Ahmed, M., Haider, S., & Sajjad, M. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. *Technology in Society*, 66, 101635.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Borges, A. F., Laurindo, F. J., Spínola, M. M., Gonçalves, R. F., & Mattos, C. A. (2021). The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions. *International Journal of Information Management*, 57, 102225.
- Di Vaio, A., Palladino, R., Pezzi, A., & Kalisz, D. E. (2021). The role of digital innovation in knowledge management systems: A systematic literature review. *Journal of Business Research*, 123, 220-231.
- Kroenke, D. M., & Boyle, R. J. (2022). *Using MIS*, 10th ed. Pearson, Prentice Hall.
- Le, Q. B., Nguyen, M. D., Bui, V. C., & Dang, T. M. H. (2020). The determinants of management information systems effectiveness in small-and medium-sized enterprises. *The Journal of Asian Finance, Economics and Business*, 7(8), 567-576.
- Mikalef, P., Krogstie, J., Pappas, I. O., & Pavlou, P. (2020). Exploring the relationship between big data analytics capability and competitive performance: The mediating roles of dynamic and operational capabilities. *Information & Management*, 57(2), 103169.
- Ogborigbo, J. C., Sobowale, O. S., Amienwalen, E. I., Owoade, Y., Samson, A. T., Egerson, J., Ogborigbo, J. C., Sobowale, O. S., Amienwalen, E. I., Owoade, Y., et al. (2024). Strategic integration of cyber security in business intelligence systems for data protection and competitive advantage. *World Journal of Advanced Research and Reviews*, 23(1), 081-096.
- Pearlson, K. E., Saunders, C. S., & Galletta, D. F. (2024). *Managing and using information systems: A strategic approach*. John Wiley & Sons.
- Porter, M. E. (1985). *Competitive strategy: Creating and sustaining superior performance, in creating and sustaining competitive advantage*.
- Rackoff, N., Wiseman, C., & Ullrich, W. A. (1985). Information systems for competitive advantage: Implementation of a planning process. *MIS Quarterly*, 285-294.
- Singh, P., & Sharma, S. (2022). What are the key requirements to develop a competitively advantageous management information system? *Central European Management Journal*, 30(3), 373-376.
- Soeparto, W. H. (2018). Sustainable competitive advantage in finance and management information systems. *proceeding 17th ADRI-UMMU 2018*, 1.
- Tu, T. V. (2015). Information systems and creating competitive advantages for businesses, *In: Proceedings of the national conference the role of management information systems in the development of organizations and businesses*. National University of Economics.
- Ul Abdin, S. Z., Khan, A. J., Gill, S. A., & Ahmed, T. (2021). Information technology competencies: A performance booster for organizations. *iRASD Journal of Management*, 3(3), 400-410.

