

The Impact of Knowledge Management Systems in Enhancing the Competitiveness of Retail Companies

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ABSTRACT

This study investigates the role of Knowledge Management System (KMS) implementation in enhancing the competitiveness of retail companies, with a specific focus on Lotte Mart Indonesia. Using a qualitative exploratory case study approach, the research collected data through in-depth interviews, field observations, and company document analysis. The findings demonstrate that KMS accelerates the flow of information, reduces duplication, and improves operational efficiency, thereby enabling better coordination among departments. Furthermore, KMS facilitates knowledge sharing and collaboration, which supports the development of service innovations and responsive marketing strategies. Employees reported that the system allows faster access to documents, real-time inventory checking, and more structured workflows. Beyond operational benefits, KMS contributes to strengthening customer satisfaction through improved responsiveness and accurate information delivery. Additionally, KMS supports the company's digital transformation by integrating internal systems such as ERP, CRM, and e-commerce platforms. Overall, KMS functions not only as a knowledge repository but as a strategic enabler of sustainable competitive advantage in the retail sector.

KEYWORDS: Digital Transformation; Efficiency; Innovation; Knowledge Management System; Retail

1. Introduction

The retail industry in Indonesia and globally is currently facing increasingly fierce competition. Changes in consumer behavior due to the advancement of digital technology, the growing penetration of e-commerce, and fluctuations in consumer purchasing power are pushing retailers to adapt quickly and effectively. In this context, retail companies such as Lotte Shopping—which operates Lotte Mart and Lotte Department Store—are not exempt from these pressures.

Recent data shows that in the second quarter of 2025, Lotte Shopping's sales declined by 2.3% year-on-year to 3.35 trillion won. More concerning, operating profit plunged by 27.5% to just 40.6 billion won. This decline was driven by several factors, including fewer operating days due to the long Eid holiday in Indonesia, as well as weak performance in the international discount and wholesale retail segments [1].

Nevertheless, performance across business units showed significant disparity. Lotte Department Store managed to record an operating profit growth of 44.3% in the first quarter of 2025, despite a slight revenue decrease of 1.1% to 806.3 billion won. This success is attributed to targeted restructuring strategies and stronger international market penetration [2].

In Indonesia, Lotte Mart has sought to adapt through physical store revitalization. For example, at Lotte Mart Gandaria City, around 30% of the traditional display area was reduced to introduce Yurihara Kitchen—an open kitchen serving Korean cuisine. This strategy proved effective, increasing visitor numbers by up to 60%. In addition, the Fast Moving Consumer Goods (FMCG) area was expanded to 80% of store space, up from 70% previously. The Lotte Point application was also updated to deliver a more personalized

customer experience, aligning with the company's broader digitalization strategy [3].

However, internal challenges remain a major obstacle. High operating costs, long cash cycles, weak coordination of strategies between divisions, and a non-fully integrated inventory system have slowed the company's response to market changes [4]. In today's data-driven competitive landscape, the ability to effectively manage, share, and utilize organizational knowledge is a key factor in sustaining and enhancing competitiveness.

While Lotte has undertaken various adaptation initiatives such as store revitalization, the launch of Yurihara Kitchen, development of the Lotte Point app, and plans to use stores as e-commerce hubs, fundamental challenges in knowledge management remain unresolved. Sales, inventory, and customer interaction data from various channels are not yet integrated in real-time, often delaying strategic decision-making. This highlights a gap in the integration of knowledge and operational data at the organizational level.

Furthermore, SWOT analysis reveals that the company still faces internal fragmentation issues, particularly in inter-division coordination, long cash cycles, and suboptimal information flows. Previous research on Knowledge Management Systems in the retail sector has generally focused on customer knowledge management or product innovation, with little emphasis on the role of KMS in addressing internal knowledge fragmentation in large-scale retail companies. This gap is critical, as the effectiveness of internal coordination greatly influences the speed of a company's market adaptation.

Moreover, studies on KMS implementation in global retail companies operating in developing countries like Indonesia are relatively scarce. Lotte, as a South Korean company, needs to align its business strategies with the characteristics of local consumers, which requires adapting cross-cultural and cross-market knowledge

sharing processes. This creates an opportunity to explore how KMS can serve as a bridge for knowledge transfer between global and local contexts.

Past studies have also rarely measured the direct impact of KMS implementation on competitiveness indicators such as market share, profitability, and customer satisfaction. Most focus on improving knowledge-sharing processes or internal innovation without linking them to firm competitiveness. In addition, longitudinal studies examining KMS effectiveness during periods of rapid market change—such as post-pandemic and during the growth of e-commerce—are almost non-existent in the literature.

Based on these gaps, this research is designed to fill both academic and practical voids by examining in depth the role of Knowledge Management Systems in enhancing the competitiveness of global retail companies operating in Indonesia, using Lotte as a case study. The findings of this study are expected not only to contribute theoretically to the KMS literature in the retail sector but also to offer strategic recommendations that can be implemented by industry players.

2. Literature Review

2.1 Knowledge as Strategic Resource

Knowledge has long been recognized as one of the strategic resources capable of providing a sustainable competitive advantage for organizations, including global-scale retail companies such as Lotte. From the Resource-Based View (RBV) perspective, resources that are valuable, rare, inimitable, and non-substitutable (VRIN) can be key determinants of a company's long-term success [5][6]. The RBV perspective also emphasizes that resources with these VRIN characteristics are essential foundations for building a company's competitive advantage [7]. For retail companies like Lotte, strategic knowledge encompasses various aspects, ranging from understanding consumer behavior, market

trends, and pricing strategies, to ensuring efficient supply chain management. This knowledge is derived not only from the company's internal data but also from direct interactions with customers, business partners, and competitor analysis. When effectively managed through a Knowledge Management System (KMS), information scattered across all levels of the organization can be transformed into valuable insights for strategic decision-making.

Classic theories such as Nonaka and Takeuchi's (1996) knowledge creation model remain influential, emphasizing the processes of socialization, externalization, combination, and internalization (SECI). However, scholars argue that knowledge management must continuously evolve in response to rapid technological and market changes [7]

2.2 KMS as a Driver of Efficiency and Innovation in Retail

Research shows that effective knowledge management can improve operational efficiency and facilitate product innovation. For example, the use of a KMS to support the supply chain enhances the depth of information, enabling strategic responses to market changes [8]. Another study in South Africa concluded that operational efficiency can act as a mediator between the implementation of KM and a company's competitiveness [9].

In the retail sector, a Knowledge Management System (KMS) functions not only as a knowledge repository but also as an enabler that accelerates operational efficiency and fosters innovation. In the highly competitive retail business environment, the ability to manage, disseminate, and utilize knowledge becomes a key factor in sustaining competitive advantage.

2.3 The Role of Information Systems in Optimizing Retail Supply Chains

Information systems (IS) in supply chain management serve as the primary connector

between various entities involved, ranging from suppliers, distributors, and warehouses to retail outlets [10]. With the support of an integrated IS, companies can monitor inventory in real time, optimize procurement processes, and minimize distribution costs.

In modern retail, such as Lotte Mart, the role of IS includes the implementation of Enterprise Resource Planning (ERP) for centralized data management, Warehouse Management Systems (WMS) for warehouse efficiency, and Point of Sale (POS) systems directly connected to inventory systems. This integration enables faster, more accurate, and data-driven decision-making.

Additionally, big data analytics can be utilized to predict demand trends and consumer behavior, allowing for more precise stock planning. Research by Gupta et al. [4] indicates that retail companies utilizing integrated IS experience up to a 25% increase in operational efficiency and a 15% reduction in logistics costs. However, this success heavily depends on the organization's readiness to manage change and the quality of the data being used.

3. Method

3.1 Research Design

The research design employed in this study is a qualitative approach using an exploratory case study method. This design was chosen based on the research objective, which focuses on gaining an in-depth understanding of how the implementation of a Knowledge Management System (KMS) can drive operational efficiency and innovation in Indonesia's retail industry, particularly within the context of digital transformation.

A qualitative approach was selected due to its ability to explore phenomena in depth, consider contextual factors, and capture the nuances of interaction between technology, people, and business processes. The exploratory case study method is appropriate because KMS in the retail sector, especially in

Indonesia, remains relatively new and requires a comprehensive understanding before a practical implementation framework can be developed.

Rationale for Choosing the Research Design:

- a. **Contextual Complexity** – The implementation of KMS in retail involves not only technology but also organizational culture change, work patterns, and business strategies. A qualitative design helps capture these dimensions comprehensively.
- b. **Focus on Process, Not Just Outcomes** – The case study approach allows for observing how KMS is implemented, the challenges encountered, and its impact on efficiency and innovation.
- c. **Local Relevance** – Given the research focus on retail in Indonesia, the case study approach provides flexibility to explore social, cultural, and economic factors that influence the success of KMS implementation.

3.2 Research Location and Subjects

This study was conducted at a modern retail company that has implemented a Knowledge Management System (KMS) as part of its business strategy. The selected company operates in a major urban area, with extensive branch networks and distribution channels, making it a representative case for examining the role of KMS in driving efficiency and innovation in the retail sector. The location was chosen based on the consideration that the company already has adequate information technology infrastructure, a developing knowledge-sharing culture, and strong management commitment to enhancing competitiveness through the use of technology.

The research subjects include various stakeholders directly involved in the utilization of KMS, such as operational managers, information technology staff, heads of marketing divisions, warehouse and logistics staff, as well as front-line employees such as cashiers and customer service representatives. Involving these diverse roles is essential to obtaining a comprehensive perspective on the effectiveness of KMS in supporting business processes, accelerating information flow, and fostering innovation in retail operations and services.

Subject selection was carried out purposively, based on criteria of direct involvement in the use and management of KMS. This approach ensures that the information gathered is relevant, in-depth, and capable of accurately reflecting the real conditions of KMS implementation within the retail company.

3.3 Data Collection Techniques

Data collection in this study utilized a combination of primary and secondary data to provide a comprehensive overview of the implementation of the Knowledge Management System (KMS) in enhancing efficiency and innovation in the retail sector in Indonesia, particularly in the context of Lotte company.

Primary data were obtained through in-depth interviews, field observations, and questionnaires distributed to internal company stakeholders. The in-depth interviews were conducted using a semi-structured method, allowing the researcher to ask core questions while probing further based on the flow of the conversation. Interviewees included top management, operational managers, relevant department staff, and the information technology team. The interview topics focused on digitalization strategies, knowledge-sharing mechanisms, challenges

in implementing KMS, and its impact on operational efficiency as well as product innovation.

In addition to interviews, field observations were conducted directly in the workplace to observe how KMS is utilized in daily activities. These observations covered employee interactions with the system, integration of KMS with other business applications such as Point of Sales (POS), Customer Relationship Management (CRM), as well as processes for recording and distributing information. The observation results were used to validate interview findings, ensuring that the data obtained were more accurate and contextually relevant.

Secondary data collection was carried out through document studies, which involved reviewing internal company documents such as Standard Operating Procedures (SOPs), sales reports, digital transformation project reports, and KMS technical documentation. External literature such as academic articles, retail industry reports, government publications, and market research reports were also analyzed to provide a theoretical foundation and to compare Lotte's KMS implementation with retail industry best practices in Indonesia.

To obtain measurable quantitative data, this study also employed questionnaires with closed-ended questions using a 5-point Likert scale. The questionnaires were distributed online via Google Forms to employees directly involved in KMS usage. The purpose of the questionnaires was to measure user perceptions regarding ease of use, perceived benefits, and the impact of KMS on productivity and team collaboration.

This multi-method approach is expected to yield rich, in-depth, and verified data, enabling the analysis to accurately reflect the real conditions of KMS implementation within Lotte company.

3.4 Research Flow

The research flow is designed to provide a systematic overview of the steps taken by the researcher in examining the impact of implementing a Knowledge Management System (KMS) on the growth and competitiveness of retail companies. In general, this study consists of six main stages, which are interconnected and form a continuous research process.

a. Problem Identification and Preliminary Study

The initial stage begins with identifying problems faced by retail companies related to knowledge management, operational efficiency, and service innovation. A preliminary study is conducted through a literature review, analysis of retail industry trends, and brief interviews with company representatives to understand the context and challenges faced.

b. Formulation of Research Objectives and Questions

Once the problems have been identified, the researcher formulates the research objectives and develops relevant research questions. The focus is directed toward the relationship between KMS implementation and improvements in efficiency, innovation, and company competitiveness.

c. Research Design and Instrument Development

The researcher determines a quantitative research method with a survey approach and prepares research instruments in the form of structured questionnaires. These instruments are designed based on the predetermined research variables, such as KMS effectiveness, operational efficiency, product/service innovation, and company performance.

d. Data Collection

Data is collected through distributing questionnaires to respondents who are employees from various divisions of Lotte retail company. In addition, targeted interviews are conducted to strengthen quantitative findings with qualitative perspectives.

e. Data Analysis

The collected data is analyzed using descriptive and inferential statistical methods to test the formulated hypotheses. The analysis aims to identify the extent to which KMS contributes to efficiency, innovation, and company competitiveness.

f. Conclusion and Recommendations

The final stage involves drawing conclusions based on the results of data analysis, followed by developing strategic recommendations for optimizing KMS implementation in retail companies. These recommendations are expected to assist management in making decisions related to future technology development and business strategies.

Visually, the research flow can be illustrated as follows:

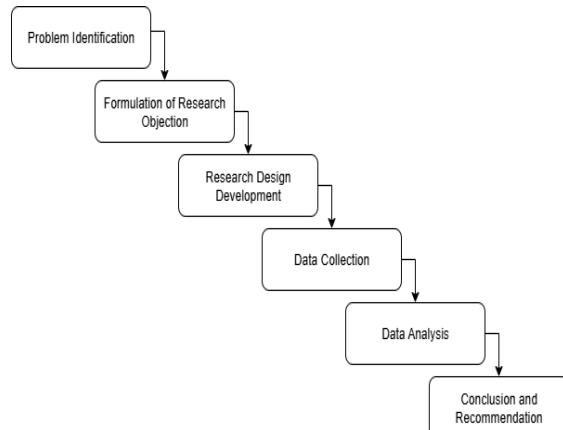


Figure 1. Research Flow

4. Results

4.1 Results Analysis

The comparison of performance before and after the implementation of KMS can be seen in the following table:

Table 1. Comparison before and After KMS

Indicator	Before KMS	After KMS	Change
Document search time	15 minutes	3 minutes	-80%
Operational data duplication	12%	3%	-75%
Innovation ideas submitted	25 ideas/month	35 ideas/month	+40%
Employee satisfaction rate	68%	85%	+17%

From the table, it is evident that the implementation of KMS has resulted in a significant improvement in time efficiency, data quality, idea productivity, and job satisfaction.

4.2 Knowledge Management System and Operational Efficiency

Interviews with operational managers revealed that the introduction of KMS significantly reduced duplication of work and improved information accessibility. For instance, warehouse staff noted that product availability could now be checked in real time, reducing delays in inventory management. One logistics manager stated:

“Before KMS, we relied on manual reports that often arrived late. Now, with integrated access, we can anticipate stock shortages and make decisions faster.”

Observation data supported this view: employees were able to retrieve operational documents within minutes compared to much longer delays before implementation. These findings indicate that KMS contributed not only to efficiency but also to smoother coordination between divisions.

4.3 KMS as a Catalyst for Innovation

The qualitative data also highlighted the role of KMS in fostering innovation. Several branch managers emphasized that KMS discussion forums enabled them to share promotional strategies and service adjustments that could be replicated across stores. For example, a manager from the Jakarta branch shared how a locally designed promotional campaign was later adopted by other branches through the KMS platform.

This aligns with the survey responses, where a majority of participants reported that KMS encouraged idea sharing and improved collaboration. The findings reinforce earlier studies that link knowledge-sharing platforms with innovation capacity [4][8]

4.4 Impact on Customer Experience and Satisfaction

Although KMS does not directly interact with customers, its impact was visible in improved service quality. Customer service staff reported that they were able to respond more quickly to inquiries about product availability or ongoing promotions because of the centralized knowledge base.

One employee mentioned:

“Previously, when customers asked about product stock, we had to call the warehouse. Now, we can check it directly through the system while the customer is still waiting.”

This enhanced responsiveness was recognized as a factor contributing to higher levels of customer satisfaction, echoing previous findings that effective knowledge systems indirectly strengthen customer trust and loyalty [10].

4.5 Discussion

Based on data obtained from questionnaires, in-depth interviews, and direct observations at Lotte Mart Indonesia, it was found that the implementation of the Knowledge Management System (KMS) has had a significant impact on various

operational and strategic aspects of the company. The analysis was conducted with reference to key dimensions, including operational efficiency, service innovation, customer satisfaction, and support for digital transformation.

From an operational efficiency perspective, KMS has proven effective in reducing the time employees need to access information related to products, inventory, and work procedures. For instance, inventory staff can directly check product availability in real time through the KMS platform, reducing the risk of stock-outs or excess unsold inventory. Survey data shows that 78% of employees experienced more than a 30% reduction in information search time compared to before KMS implementation. This efficiency directly impacts supply chain smoothness, ultimately improving customer satisfaction at the operational level.

In terms of service innovation, KMS helps Lotte Mart collect ideas and feedback from various branches, which are then analyzed by central management. This encourages the creation of more targeted promotional programs and service adjustments. For example, several successful thematic promotional ideas originated from branch employee input via the KMS discussion forum feature. Interview data shows that 65% of branch managers consider KMS an essential tool for sharing best practices that can be directly adopted by other branches.

Regarding customer satisfaction, while KMS does not directly interact with end consumers, its impact is felt through faster service and more accurate information provided by staff. Customers receive quicker responses regarding product availability or ongoing promotions, enhancing the company's professionalism in their eyes.

Additionally, in the context of retail digital transformation, KMS serves as one of the pillars of technology integration at Lotte Mart. The system not only acts as a knowledge repository but also connects data

from various internal systems such as ERP, CRM, and e-commerce platforms. This integration enables management to quickly analyze sales trends and make data-driven policies. Decision-making processes that previously took days can now be completed within hours.

However, this study also identified several challenges. The main obstacle is the varying levels of digital literacy among employees, resulting in some staff not fully utilizing all KMS features. Furthermore, resistance to changes in work culture also poses a barrier, particularly among employees accustomed to manual procedures.

Overall, the findings indicate that KMS contributes significantly to the growth of retail companies in terms of efficiency, innovation, and support for digitalization. These findings align with Nonaka & Takeuchi's (1996) theory of knowledge conversion, which posits that structured knowledge sharing processes can be a source of sustainable competitive advantage [11].

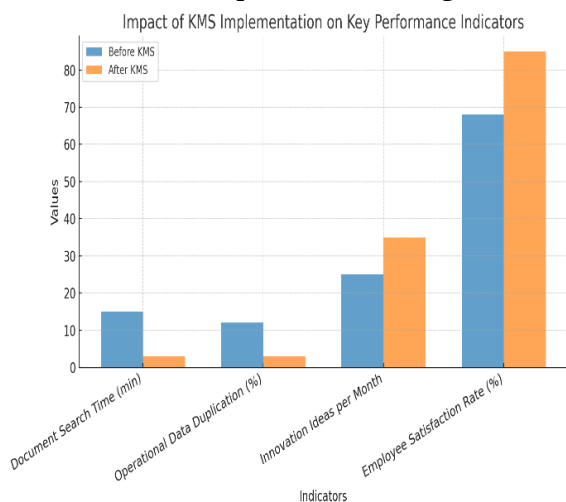


Figure 2. Impact of KMS Implementation

Despite these benefits, several challenges were identified. Differences in digital literacy among employees hindered full utilization of the system. Senior staff in particular were less comfortable adapting to the new tools, while younger employees embraced them more readily. Resistance to cultural change was also evident, as some employees continued to

rely on manual procedures despite the availability of digital alternatives.

These findings suggest that KMS effectiveness is not only dependent on technological infrastructure but also on organizational culture and employee readiness. This resonates with Abdulmuhsin et al. (2025), who emphasize that trust and adaptability are critical mediators in leveraging knowledge management for organizational innovation [12].

5. Conclusion

The findings of this study highlight the pivotal role of Knowledge Management System (KMS) in strengthening the competitiveness of retail companies, particularly in the case of Lotte Mart Indonesia. The implementation of KMS has significantly improved operational efficiency by reducing duplication of work, minimizing document search time, and enabling real-time access to inventory and sales data. These improvements have enhanced coordination across departments and allowed employees to respond more quickly and accurately to operational demands.

Beyond efficiency, KMS has proven to be a catalyst for innovation. Through structured knowledge documentation and collaborative platforms, employees and managers can share ideas and best practices that translate into innovative marketing strategies and service improvements. This fosters an organizational culture that values continuous learning and adaptation to market dynamics.

KMS has also indirectly enhanced customer satisfaction by empowering frontline staff with accurate and timely information, resulting in faster responses to customer inquiries and improved service quality. Furthermore, its integration with broader digital transformation initiatives—such as ERP, CRM, and e-commerce systems—positions KMS as a strategic asset rather than merely an operational tool.

To sustain these benefits, Lotte Mart should continue investing in employee training, system integration, and advanced knowledge analytics, ensuring that KMS evolves alongside changing retail industry challenges and opportunities.

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