The Role of ERP-Supported Informatization in Internal Supply Chain Performance: Evidence from a Case Study

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Abstract

In recent years, organizations have increasingly invested in Enterprise Resource Planning (ERP) systems to improve process integration, coordination, and overall performance. However, despite these technological advancements, many organizations continue to face significant challenges in achieving stable, efficient internal supply chain operations. This study examines the role of ERP-supported informatization in internal supply chain performance, with a particular focus on the interactions among technological, organizational, and process-related factors. A qualitative single-case study approach was adopted, based on semi-structured interviews and analysis of internal company data. The findings reveal that, although the ERP system provides an integrated information environment, its potential is not fully realized in practice. Internal supply chain performance is significantly affected by fragmented processes, weak cross-functional coordination, and reactive decision-making. These factors contribute to a reinforcing cycle of instability characterized by frequent plan changes, inefficient procurement, and increased logistics costs. The study contributes to the existing literature by demonstrating that ERP-supported informatization is a necessary but insufficient condition for performance improvement. It highlights the importance of aligning technological capabilities with organizational structures and process practices and provides managerial implications for enhancing coordination and stability in internal supply chains.

Introduction

In recent years, digital transformation has become a central strategic priority for organizations seeking to improve efficiency, agility, and long-term competitiveness. Enterprise Resource Planning (ERP) systems play a crucial role in this transformation by integrating core business processes and enabling data-driven decision-making across organizational functions (Davenport, 1998). At the same time, the increasing adoption of digital platforms and artificial intelligence (AI) is reshaping traditional enterprise systems, transforming them from transactional backbones into intelligent and adaptive platforms that

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support innovation and performance improvement (Huang & Tang, 2025; Davenport & Mittal, 2023).

Recent studies emphasize that AI-enhanced ERP systems can significantly improve process efficiency, decision-making quality, and organizational performance (Islam et al., 2025; Mannan et al., 2025). In parallel, digital transformation research highlights the importance of aligning technological capabilities with organizational processes and business models to achieve measurable performance outcomes (Merín-Rodríguez et al., 2024). However, prior research has also demonstrated that ERP systems should be understood as socio-technical systems, in which technological capabilities alone are insufficient to ensure successful implementation and value realization (Markus & Tanis, 2000).

Despite these advancements, many organizations continue to face challenges in realizing the full potential of ERP-supported informatization, particularly in complex environments such as internal supply chains. Existing studies largely assume that the implementation of ERP systems and the integration of advanced technologies such as AI inherently lead to improved organizational performance. This perspective overlooks an important practical challenge: many organizations operate integrated ERP systems but still experience inefficiencies, instability, and coordination problems in their internal supply chains.

Furthermore, limited attention has been given to the interplay between technological integration and organizational realities, such as functional silos, informal decision-making, and inconsistent information use. As a result, there is a lack of empirical evidence explaining why ERP-supported environments often fail to deliver expected performance improvements despite significant investments in informatization.

To address this gap, this study investigates the role of informatization in a manufacturing company's internal supply chain, with a particular focus on the interactions among technological, organizational, and process dimensions. The main research question is: How does ERP-supported informatization influence internal supply chain performance, and what organizational factors limit its effectiveness?

The study employs a qualitative single-case study design, drawing on semi-structured interviews and internal company data. The contribution of this research is twofold. First, it extends the existing literature by providing empirical insights into the limitations of ERP-based informatization in practice. Second, it offers managerial implications for improving coordination, planning stability, and overall supply chain performance through a more integrated approach. This study addresses this gap by examining how ERP-supported informatization operates in practice within internal supply chains.

The remainder of the paper is structured as follows. Section 2 presents the theoretical background, including ERP systems and informatization, digital transformation and AI, internal supply chain challenges, and the identified research gap. Section 3 outlines the research methodology and data collection approach. Section 4 provides the empirical analysis of the case study, focusing on procurement, production planning, logistics, and cross-functional coordination. Section 5 discusses the findings in relation to existing literature and highlights their theoretical and managerial implications. Finally, Section 6 concludes the paper by summarising the key contributions, outlining limitations, and suggesting directions for future research.

Theoretical Background

ERP Systems and Informatization

Enterprise Resource Planning (ERP) systems are among the most important technological enablers of organizational integration and process optimization. Traditionally, ERP systems have been implemented to support the integration of core business functions, such as procurement, production, logistics, and sales, by providing a unified data structure and standardized processes across the organization (Davenport, 1998). This integration enables improved information visibility, coordination, and decision-making, which are essential for achieving operational efficiency and organizational effectiveness.

The concept of informatization extends beyond the mere implementation of information systems and refers to the systematic application of information technologies to support, automate, and redesign business processes. In the context of ERP systems, informatization involves not only technological integration but also changes in organizational structures, workflows, and decision-making practices. As such, ERP implementation is widely recognized as a socio-technical transformation that requires alignment between technological capabilities and organizational elements, including processes, roles,

and governance mechanisms (Markus & Tanis, 2000).

Despite their potential benefits, ERP systems do not automatically lead to improved organizational performance. Prior research highlights that the success of ERP implementation depends on a range of organizational, process-related, and technological factors (Qureshi, 2022). In particular, issues such as unclear process ownership, insufficient data quality, lack of standardization, and weak cross-functional coordination can significantly limit the effectiveness of ERP systems. Consequently, organizations often experience a gap between the expected and realized benefits of ERP-supported informatization (Sternad Zabukovšek & Bobek, 2025).

Furthermore, the literature emphasizes that ERP systems provide a necessary but not sufficient condition for achieving process integration and performance improvements (Mannan, 2025). While ERP systems enable data integration and process standardization, their effectiveness depends on how organizations use the available information and align their decision-making practices with the system's capabilities (Sternad Zabukovšek & Bobek, 2025). In environments characterized by complex, interdependent processes, such as internal supply chains, these challenges become even more pronounced, as effective coordination requires consistent information flows, clearly defined responsibilities, and disciplined planning practices (Canon et al., 2025).

Digital Transformation, AI, and ERP Evolution

Digital transformation has fundamentally reshaped how organizations design, manage, and optimize their business processes. In this context, digital platforms play a critical role by enabling integration, scalability, and real-time data exchange across organizational boundaries (Huang & Tang, 2025). As organizations increasingly adopt platform-based approaches, enterprise systems such as ERP are evolving from traditional transaction-processing systems into more flexible, adaptive digital infrastructures.

A key driver of this evolution is the integration of AI into ERP systems. Recent research highlights that AI enhances ERP capabilities by enabling advanced analytics, predictive decision-making, and intelligent automation of business processes (Islam et al., 2025; Mannan et al., 2025). These developments allow organizations to move beyond reactive decision-making towards more proactive, data-driven approaches, particularly in areas such as demand forecasting, production planning, and supply chain coordination. Moreover, AI-enabled ERP systems improve organizational performance by enabling faster decision-making, greater process efficiency, and better utilization of available data (Davenport & Mittal, 2023). In combination with digital transformation strategies, these systems are expected to enhance organizational agility and responsiveness, enabling firms to adapt more effectively to changing market conditions and customer requirements.

However, despite these technological advancements, the successful implementation and utilization of AI-enabled ERP systems remain highly dependent on organizational factors. Prior research emphasizes that the benefits of digital transformation are not determined solely by technological capabilities but also by the alignment between technology, business processes, and organizational structures (Merín-Rodríguez et al., 2024). Without such alignment, organizations may struggle to fully leverage the potential of AI and ERP integration, resulting in suboptimal performance.

Consequently, while digital transformation and AI integration offer significant opportunities to improve organizational performance, they also introduce new challenges in coordination, decision-making, and process integration. These challenges are particularly evident in complex and interdependent environments, such as internal supply chains, where the effectiveness of advanced technologies depends on consistent information flows and cross-functional collaboration.

Internal Supply Chain and Performance Challenges

Internal supply chains represent a critical component of organizational performance, as they integrate key business functions such as procurement, production planning, production execution, sales, and logistics into a coordinated system of material and information flows. Effective management of internal supply chains requires a high level of process integration, information sharing, and cross-functional coordination, as decisions made in one function directly influence the performance of others (Lambert & Cooper, 2000).

However, prior research indicates that organizations often face significant challenges in achieving effective internal supply chain integration. One of the key issues is the persistence of functional silos, in which departments optimize their own objectives rather than the organization's overall performance. This lack of

coordination frequently results in suboptimal decision-making, reduced transparency, and inefficiencies across the supply chain (Christopher, 2016).

In addition, the quality, timeliness, and consistency of information are crucial to supply chain performance. Delays in information sharing, inaccurate data, and informal communication practices can significantly disrupt planning processes and reduce the reliability of forecasts and operational decisions. As highlighted in the literature, such information distortions can lead to amplified variability across the supply chain, commonly referred to as the bullwhip effect, where small changes in demand generate disproportionately large fluctuations in upstream processes (Lee et al., 1997; Fabbe-Costes & Jahre, 2008).

Another important challenge relates to the dominance of reactive decision-making. Instead of following structured planning processes, organizations frequently adjust their plans in response to short-term changes in demand or operational constraints. This "firefighting" behavior leads to frequent rescheduling, reduced process discipline, and decreased efficiency, particularly in environments characterized by high process variability and interdependence (Lambert & Cooper, 2000).

Although ERP systems are designed to support integration and coordination within internal supply chains, their effectiveness is often limited by organizational and process-related factors (Qureshi, 2022). The existence of an integrated information system does not automatically ensure consistent information use, coordinated decision-making, or alignment between different functions. As a result, organizations may operate ERP-supported environments while still experiencing performance issues typically associated with fragmented and poorly coordinated systems (Harianto et al., 2024).

These challenges highlight the importance of adopting a holistic perspective on internal supply chain management, in which technological, organizational, and process dimensions are considered simultaneously (Markus & Tanis, 2000; Merín-Rodríguez et al., 2024). Understanding the interaction between these dimensions is essential for explaining why ERP-supported informatization does not always lead to the expected improvements in operational performance.

Research Gap and Theoretical Positioning

The literature reviewed highlights the significant progress in the development of ERP systems and their role in supporting digital transformation, particularly through the integration of digital platforms and artificial intelligence. Prior studies emphasize the technological capabilities of ERP systems, including integration, automation, and advanced analytics, as key drivers of organizational performance (Huang & Tang, 2025; Islam et al., 2025; Mannan et al., 2025). In particular, existing studies rarely focus explicitly on internal supply chains, where coordination challenges primarily arise within organizational boundaries rather than between independent suppliers. At the same time, research in supply chain management underscores the importance of process integration, information quality, and cross-functional coordination for achieving effective operational performance (Lambert & Cooper, 2000; Lee et al., 1997).

Despite these contributions, the existing body of knowledge remains fragmented. On the one hand, ERP and digital transformation research predominantly adopts a technology-oriented perspective, focusing on system capabilities and expected performance improvements. On the other hand, supply chain research highlights coordination and process-related challenges but often does not explicitly consider the role of ERP-supported informatization in shaping these dynamics.

As a result, there is a lack of integrative empirical research that simultaneously examines technological, organizational, and process dimensions in ERP-supported environments. In particular, limited attention has been given to understanding why organizations with implemented and integrated ERP systems continue to experience inefficiencies, instability, and coordination problems in their internal supply chains.

This gap points to the need for a more holistic perspective that moves beyond purely technological explanations and considers the interaction between information systems and organizational realities. By adopting a qualitative case study approach, this study bridges this gap by providing in-depth empirical insights into how ERP-supported informatization operates in practice and which organizational factors limit its effectiveness.

While existing research provides valuable insights into

the technological capabilities of ERP systems and the importance of supply chain integration, it often fails to explain why organizations with implemented and integrated ERP solutions continue to experience instability and coordination problems within their internal supply chains. Many studies implicitly assume that system integration leads to improved performance, thereby underestimating the role of organizational practices and decision-making dynamics in shaping operational outcomes.

In particular, there is a lack of empirical research that simultaneously examines technological integration, organizational alignment, and process discipline within internal supply chains. Prior studies typically focus either on ERP implementation success factors or on supply chain coordination challenges, but rarely address their interaction in a unified analytical framework. As a result, the mechanisms through which ERP-supported informatization influences internal supply chain performance in practice remain insufficiently understood.

Research Methodology

This study adopts a qualitative single-case study approach, which is appropriate for in-depth investigation of complex organizational phenomena such as internal supply chain coordination and ERP-supported informatization. A case study enables a comprehensive understanding of interactions among technological, organizational, and process-related factors in their real-life context. It is particularly suitable for exploring how ERP-supported environments function in practice.

Empirical data were collected from multiple sources to ensure methodological triangulation and increase the reliability of findings. Primary data were obtained through semi-structured interviews with employees from key functional areas, including procurement, production planning, logistics, and sales. Secondary data sources included internal company documentation, such as process descriptions, production plans, logistics reports, and selected ERP system data. The combination of primary and secondary data enabled a more comprehensive understanding of internal supply chain processes and their performance.

This study builds on prior research conducted within the framework of a master's thesis (Vodušek, 2016). The original data were further refined and re-analyzed to align with the objectives of the present study and to enable a more in-depth examination of ERP-supported internal supply chain processes.

Data analysis followed a process-oriented approach. Interview transcripts and documentary data were analyzed iteratively to identify recurring patterns, coordination breakdowns, and root causes of performance issues. The analysis focused on key internal supply chain processes, including procurement, production planning, and logistics. Findings were grouped by process areas and synthesized to reveal cross-functional interactions and systemic effects, with particular attention to the relationships among information flows, decision-making practices, and operational performance outcomes.

The qualitative single-case study approach adopted in this research is particularly suitable for exploring complex coordination phenomena within ERP-supported internal supply chains. Prior research emphasizes that such phenomena are deeply embedded in organizational routines, informal practices, and cross-functional interactions, which are difficult to capture through purely quantitative methods (Yin, 2018; Eisenhardt & Graebner, 2007).

By combining semi-structured interviews with internal documentation and system-related data, the study enables an in-depth examination of how ERP-supported informatization is enacted in daily operational practice. This approach allows for the identification of underlying coordination mechanisms and behavioral patterns that contribute to planning instability and reactive decision-making. At the same time, the single-case design entails limitations related to generalisability. The findings, therefore, aim to provide analytical rather than statistical generalization, contributing to theory development by illustrating how organizational factors shape the performance effects of ERP-supported informatization in internal supply chains.

Case Study: Internal Supply Chain Analysis

Company Context

The analyzed company operates in the manufacturing sector and supplies both domestic and international markets. Its production is characterized by a relatively high product variety, strict delivery requirements, and frequent demand fluctuations. Over time, the organization has developed a functional structure with clearly defined departments responsible for

procurement, production planning, production execution, logistics, and sales.

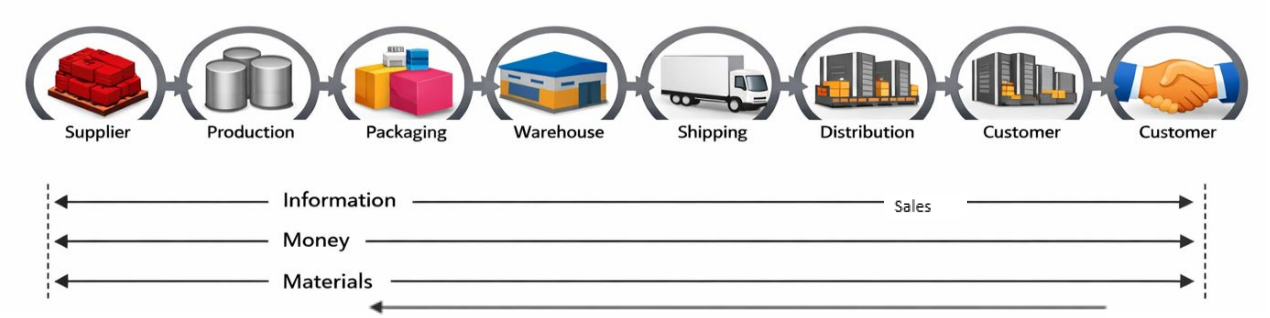
The internal supply chain is supported by an integrated ERP system that provides a shared data environment and enables coordination across business functions. Despite this technological integration, the company continues to face challenges in process coordination, information flow, and operational performance.

Procurement Process Analysis

Procurement plays a critical role in ensuring the availability of raw and packaging materials required for uninterrupted production. As part of the internal supply chain, it is closely interconnected with production planning, logistics, and sales, forming a system of material and information flows supported by the ERP system (see Figure 1). The empirical findings indicate that procurement activities in the analyzed company are predominantly operational and reactive, with limited emphasis on strategic planning and supplier coordination.

Figure 1

Internal supply chain structure and main material and information flows are supported by the ERP system.



Source: Adapted from Vodušek (2016)

One of the key challenges identified is the absence of clearly defined inventory policies, particularly regarding safety stock levels for critical materials. As a result, material shortages are frequently addressed through urgent purchasing decisions, which increases procurement costs and introduces additional variability into the planning process. Furthermore, limited differentiation between strategic and non-strategic suppliers reduces the organization's ability to prioritize and manage supplier relationships effectively.

Another important issue relates to the quality and timeliness of demand information. Procurement relies heavily on input from sales and production planning; however, demand updates are often delayed or communicated informally. This lack of reliable medium-term planning information constrains procurement's ability to anticipate material requirements and coordinate proactively with suppliers.

These findings highlight a misalignment between the ERP system's technological capabilities and the organization's actual practices. Although the ERP system enables data integration and supports procurement planning, its potential is not fully utilized due to reactive decision-making and insufficient process standardization. As a result, procurement contributes to overall supply chain instability rather than acting as a stabilizing function.

Production Planning Analysis

Production planning serves as a central coordination point within the internal supply chain, integrating demand information, material availability, and production capacity into executable plans. As such, its effectiveness is critical for ensuring operational stability and overall supply chain performance.

The empirical findings reveal that frequent plan changes, short planning horizons, and limited schedule stability characterize production planning in the analyzed company. Although formal planning procedures exist, they are often overridden by short-term changes in demand or material availability. As a result, production plans are continuously adjusted after their initial release,

reducing their reliability and undermining their role as a coordination mechanism.

From an internal supply chain perspective, frequent replanning not only reduces schedule credibility but also weakens the coordinating role of production planning. When plans are repeatedly adjusted after release, downstream functions increasingly rely on informal communication and local decision-making rather than on system-based plans. Over time, this behavior undermines trust in formal planning processes and reinforces reactive operating modes across the internal supply chain.

Moreover, empirical studies indicate that planning instability tends to become self-reinforcing. Short planning horizons limit procurement and logistics' ability to anticipate future requirements, increasing the likelihood of material shortages and last-minute adjustments. These adjustments, in turn, trigger further replanning, creating a cycle in which production planning shifts from a coordination mechanism to a continuous firefighting activity.

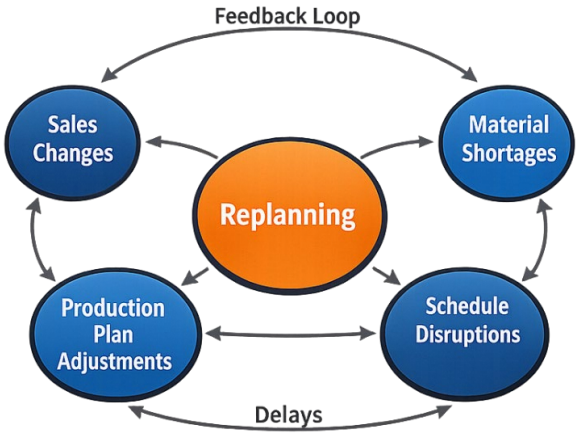
From a broader internal supply chain perspective, planning instability not only affects operational efficiency but also erodes the coordinating role of production planning as a central integrative function. When production plans are repeatedly revised after their initial release, downstream functions increasingly rely on informal communication and local adjustments rather than on system-based plans. Over time, this behavior weakens trust in formal planning processes and reduces the perceived relevance of ERP-supported planning outputs (Markus & Tanis, 2000; Harianto et al., 2024).
As confidence in production plans declines, employees often develop parallel coordination mechanisms, such as manual tracking tools, spreadsheets, or direct interpersonal communication, to compensate for perceived system limitations. While these practices may provide short-term flexibility, they further fragment information flows and undermine end-to-end visibility. Consequently, production planning shifts from a stabilizing coordination mechanism to a reactive firefighting mode, focused on resolving immediate disruptions rather than maintaining feasible, reliable plans (Baycik & Gowda, 2024). This dynamic creates a structural tension.

A key driver of these disruptions is the influence of sales-driven requests, which often lead to unplanned changes in production schedules. In many cases, production planners are required to incorporate additional or modified orders into existing plans to accommodate customer demands, even when such changes negatively affect overall efficiency. This behavior reflects a prioritization of short-term responsiveness over long-term planning stability.

In addition, a structural disconnect between planning and execution further contributes to inefficiencies. While production planners are responsible for developing and maintaining feasible production schedules, execution units often focus on local performance objectives, such as machine utilization or output volume. This misalignment complicates coordination and limits the organization's ability to identify and address the root causes of planning instability.

The observed patterns indicate a dominance of reactive decision-making, in which planning is continuously adjusted in response to emerging issues rather than guided by stable, coordinated processes. This results in a recurring cycle of replanning, where changes in demand or material availability trigger subsequent adjustments across the supply chain (Figure 2).

Figure 2
Typical Replanning cycle triggered by demand changes and material constraints.



Source: Author's illustration, based on empirical findings.

Logistics Process Analysis

Logistics serves as the interface between internal production processes and external customers, ensuring timely and reliable product delivery. Its effectiveness depends heavily on the stability of upstream processes, particularly production planning and demand management.

The empirical findings indicate that logistics activities in the analyzed company are largely execution-oriented,

with limited emphasis on proactive planning and optimization. Outbound logistics planning is characterized by short planning horizons and frequent last-minute changes, driven primarily by instability in production schedules and late customer order changes.

As a consequence, logistics operations often rely on reactive decision-making. Transport arrangements are frequently organized at short notice, limiting the ability to optimize routes, consolidate shipments, and negotiate favorable transport conditions. This leads to increased transportation costs and reduced efficiency.

Planning instability in upstream processes has a direct and cumulative impact on logistics performance. Frequent changes to production schedules and delivery priorities reduce logistics functions' ability to plan transport activities proactively. As a result, shipment planning is often conducted with limited lead time, restricting opportunities for route optimization, load consolidation, and capacity negotiation with logistics service providers (Canon et al., 2025).

In such contexts, logistics performance is increasingly shaped by short-term corrective actions rather than by structured planning. Although ERP systems provide up-to-date information on orders, inventory levels, and shipment status, the volatility of upstream plans limits the practical use of this information for forward-looking decision-making. Consequently, logistics personnel are compelled to prioritize responsiveness over efficiency, accepting higher transportation costs and operational variability as unavoidable trade-offs (Baycik & Gowda, 2024).

Moreover, recurring last-minute changes create hidden coordination costs within the internal supply chain. These include increased administrative effort, overtime work, frequent exception handling, and intensified communication between functions. While standard performance metrics rarely capture such costs, they significantly affect overall supply chain efficiency and service reliability. The findings thus confirm that logistics inefficiencies observed in ERP-supported environments are largely symptoms of upstream coordination failures rather than isolated deficiencies within the logistics function itself (Alsheyadi et al., 2024; Harianto et al., 2024).

In addition, limited visibility and coordination across functions affect service reliability. Due to inconsistent information flows and frequent schedule changes, logistics units struggle to plan dispatch activities and ensure on-time deliveries accurately. This results in fluctuating service performance and reduced customer predictability.

The findings further confirm that logistics performance is not only determined by the efficiency of logistics activities themselves but also by the level of coordination and information quality across the entire internal supply chain. As such, logistics serves as a “symptom” function, in which the consequences of upstream inefficiencies become most visible. This highlights that logistics inefficiencies are largely a consequence of upstream coordination failures rather than isolated operational issues.

Cross-Functional Issues and Synthesis

Recent studies emphasize that cross-functional misalignment represents one of the most persistent barriers to internal supply chain performance in ERP-supported environments. Even when information is technically shared across functions, differences in priorities, incentives, and decision-making horizons can prevent effective coordination. As a result, actions taken by one function may unintentionally undermine the objectives of others, reinforcing fragmentation rather than integration (Fabbe-Costes & Jahre, 2008; Flynn et al., 2010; Alsheyadi et al., 2024).

Empirical evidence indicates that organizations addressing cross-functional issues through shared performance metrics, joint planning routines, and clearly defined process ownership achieve more consistent decision-making and improved operational stability. Without such mechanisms, ERP-supported informatization may formalize existing silos rather than enabling genuine end-to-end coordination (Lambert & Cooper, 2000; Harianto et al., 2024).

The analysis of procurement, production planning, and logistics processes reveals that the observed performance issues are not isolated but systemic. Rather than stemming from individual functional inefficiencies, the problems arise from weak cross-functional coordination, fragmented decision-making, and inconsistent use of information across the internal supply chain.

A key finding is the presence of functional silos, where different departments operate with partially conflicting objectives and limited alignment. Procurement focuses on material availability, production planning on schedule feasibility, and logistics on execution, yet these functions

are not sufficiently coordinated through shared planning processes or consistent performance metrics. As a result, decisions made in one area frequently generate unintended consequences in others.

Another critical issue is the lack of reliable and timely information flows. Demand updates are often delayed or communicated informally, which reduces planning accuracy and limits the ability of different functions to coordinate effectively. Although the ERP system provides integrated data, its potential is not fully realized due to inconsistent data usage and reliance on informal communication channels.

The interaction among these factors creates a reinforcing cycle of instability. Delays in demand information and material shortages trigger changes to production plans, which, in turn, disrupt logistics planning and execution. These disruptions further increase the need for reactive decision-making, creating a continuous loop of replanning and operational inefficiencies.

Importantly, the findings indicate that the ERP system, while providing a necessary technological foundation, does not by itself ensure effective coordination or performance improvements. The persistence of fragmented processes and informal decision-making practices limits the organization's ability to leverage ERP-supported informatization fully.

Overall, the results highlight that the combined effects of technological, organizational, and process-related factors determine internal supply chain performance. Addressing isolated issues within individual functions is therefore insufficient; instead, an integrated, systemic approach is required to achieve sustainable improvements in performance.

Discussion

Recent literature on digital supply chain transformation further reinforces this study's findings by demonstrating that ERP-supported environments often fail to stabilize operations when organizational alignment is weak. Case-based evidence shows that firms frequently assume that increased transparency and data availability will automatically improve coordination, while neglecting the need for explicit decision rules and cross-functional governance structures. In such cases, digital systems may accelerate reactions to disturbances without addressing their underlying causes (Canon et al., 2025).

The findings also highlight the importance of distinguishing between internal and external supply chain integration when evaluating the performance effects of ERP-supported informatization. While much of the supply chain literature focuses on coordination across organizational boundaries, the present study demonstrates that significant performance challenges arise within organizational boundaries, where functional silos, misaligned incentives, and informal decision-making persist despite shared information systems.

This distinction is particularly relevant for managers operating in ERP-supported environments, as investments in system integration may create an illusion of coordination without addressing underlying organizational misalignments. As shown in the analyzed case, internal supply chain instability is less a consequence of insufficient information availability than of inconsistent information use and fragmented decision authority. These insights reinforce the argument that improving internal supply chain performance requires organizational interventions that complement technological integration, such as cross-functional governance structures and disciplined planning routines (Flynn et al., 2010; Fabbe-Costes & Jahre, 2008).

Empirical studies also indicate that successful digital transformation initiatives explicitly integrate behavioral change with technological deployment. Organizations that redesign planning routines, formalize escalation mechanisms, and invest in cross-functional capability development alongside ERP implementation achieve more sustainable improvements in internal supply chain performance than those that focus primarily on system functionality (Baycik & Gowda, 2024).

These insights strengthen the interpretation of the present case study by situating it within a broader pattern observed across industries. They confirm that ERP-supported informatization should be viewed as an enabling infrastructure whose performance impact depends on organizational discipline and coordinated decision-making rather than on technological sophistication alone.

The findings of this study provide important insights into the role of ERP-supported informatization in internal supply chain performance. While prior research emphasizes the potential of ERP systems and digital transformation technologies to improve efficiency, coordination, and decision-making (Huang & Tang, 2025;

Islam et al., 2025; Mannan et al., 2025), the results of this study highlight a significant gap between technological capabilities and their actual utilization in practice (Canon et al., 2025; Harianto et al., 2024; Alsheyadi et al., 2024; Baycik & Gowda, 2024).

Consistent with the socio-technical perspective on ERP systems (Markus & Tanis, 2000), the findings confirm that technological integration alone is insufficient to ensure performance improvements. Although the analyzed company operates an integrated ERP system, it continues to experience coordination problems, planning instability, and inefficiencies across its internal supply chain. This supports the argument that ERP systems provide a necessary but not sufficient condition for effective process integration and organizational performance.

The results further extend existing research by demonstrating that internal supply chain inefficiencies are primarily driven by organizational and process-related factors rather than technological limitations. In particular, the persistence of functional silos, inconsistent information use, and reactive decision-making significantly reduces the effectiveness of ERP-supported environments. These findings complement prior studies on supply chain coordination, which emphasize the importance of information quality and process integration (Lambert & Cooper, 2000; Lee et al., 1997), but provide additional empirical evidence on how these issues manifest in ERP-integrated settings.

A key contribution of this study lies in identifying the reinforcing cycle of instability within internal supply chains. The results show that delayed information flows, frequent plan changes, and reactive adjustments create a self-reinforcing loop that continuously undermines planning reliability and operational efficiency. This insight adds to the existing literature by highlighting the dynamic nature of coordination failures in ERP-supported environments.

From a managerial perspective, the findings suggest that organizations should move beyond a purely technology-driven approach to informatization. Instead of focusing primarily on system implementation, managers should prioritize process standardization, clear responsibility definitions, and consistent planning practices. Improving data quality and reducing reliance on informal communication channels are also critical for enhancing coordination and stability.

Furthermore, organizations should adopt a more integrated approach to performance management by aligning objectives across functions and introducing metrics that support overall supply chain performance rather than local optimization. Strengthening cross-functional collaboration and establishing disciplined planning routines can significantly improve the effectiveness of ERP-supported systems.

Overall, this study demonstrates that the benefits of ERP-supported informatization depend not only on technological capabilities but also on the extent to which organizations align their processes, structures, and decision-making practices with the system's functionalities. This highlights the need for a holistic approach to managing internal supply chains in digitally transformed environments.

These findings are particularly relevant in the context of increasing adoption of AI-enabled ERP systems, where technological advancements alone cannot ensure improved coordination.

Conclusion

This study examined the role of ERP-supported informatization in a manufacturing company's internal supply chain, with a particular focus on the interactions among technological, organizational, and process-related factors. The findings demonstrate that, despite the presence of an integrated ERP system, significant performance challenges persist, particularly in coordination, planning, stability, and information flow.

The results confirm that ERP systems alone do not guarantee improved operational performance. While they provide an essential technological foundation for integration and data management, their effectiveness depends on how well organizations align their processes, structures, and decision-making practices with the system's capabilities. In this regard, the study highlights the importance of moving beyond a purely technology-driven perspective towards a more holistic approach to informatization.

The main contribution of this research lies in identifying the systemic nature of internal supply chain inefficiencies and the reinforcing cycle of instability driven by delayed information, frequent plan changes, and reactive decision-making. By providing empirical evidence from a real organizational context, the study contributes to a

better understanding of the limitations of ERP-supported environments in practice.

From a managerial perspective, the findings suggest that improving internal supply chain performance requires stronger cross-functional coordination, a clearer definition of responsibilities, and more disciplined planning processes. In addition, organizations should focus on improving data quality and reducing reliance on informal communication to leverage the benefits of ERP systems fully.

This study is subject to several limitations. First, the research is based on a single case study, which limits the generalisability of the findings. Second, the analysis focuses on a specific organizational context within the manufacturing sector, which may not fully reflect the conditions in other industries. Future research could address these limitations by conducting comparative studies across multiple organizations or industries and by combining qualitative and quantitative methods to validate the findings further.

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Vloga ERP-rešitve pri informatizaciji in uspešnosti interne oskrbne verige: študija primera

Izvleček

V zadnjih letih organizacije vse pogosteje vlagajo v celovite informacijske rešitve (ERP) z namenom izboljšanja integracije procesov, koordinacije in celotne uspešnosti poslovanja. Kljub tem tehnološkim napredkom se številne organizacije še vedno soočajo s pomembnimi izzivi pri zagotavljanju stabilnega in učinkovitega delovanja internih oskrbnih verig. Prispevek proučuje vlogo ERP-podprte informatizacije pri uspešnosti interne oskrbne verige s posebnim poudarkom na medsebojnem delovanju tehnoloških, organizacijskih in procesnih dejavnikov. Prispevek temelji na kvalitativni študiji primera, ki vključuje polstrukturirane intervjuje in analizo internih podatkov podjetja. Rezultati raziskave kažejo, da ERP-rešitev sicer zagotavlja integrirano informacijsko okolje, vendar njegov potencial v praksi ni v celoti izkoriščen. Na uspešnost interne oskrbne verige pomembno vplivajo razdrobljeni procesi, šibka medfunkcijska koordinacija in reaktivno odločanje. Ti dejavniki ustvarjajo spiralo nestabilnosti, ki se odraža v pogostih spremembah planov, neučinkoviti nabavi in povečanih logističnih stroških. Raziskava prispeva k obstoječi literaturi z ugotovitvijo, da ERP-podprta informatizacija predstavlja nujen, vendar ne zadosten pogoj za izboljšanje uspešnosti. Poudarja pomen usklajevanja tehnoloških zmogljivosti z organizacijskimi strukturami in procesnimi praksami ter podaja managerske usmeritve za izboljšanje koordinacije in stabilnosti internih oskrbnih verig.

Ključne besede: ERP-rešitve, informatizacija, interna oskrbna veriga, uspešnost interne oskrbne verige, integracija poslovnih procesov, medfunkcijska koordinacija