# Leveraging Digital Platforms for Co-opetition: How Information Sharing Drives Business Performance in Indonesian Freight Forwarding

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**Abstract.** Indonesian freight forwarding firms face persistent challenges of fragmented operations, operational inefficiencies, and compressed profit margins, primarily stemming from inadequate digital integration and insufficient horizontal collaboration among third-party logistics (3PL) providers and transporters (2PL). This paper examines how digitalization-enabled horizontal collaboration—particularly through information-sharing mechanisms—enhances business performance in Indonesia's freight forwarding sector. Drawing on the coopetition literature and supply chain digitalization research, we argue that information sharing, rather than decision synchronization or incentive alignment, is the foundational mechanism by which digital platforms generate measurable improvements in financial performance, service quality, and operational capability. This literature review and conceptual model development demonstrate that digital platforms create unprecedented opportunities for competitors to collaborate while maintaining competitive advantage, particularly in emerging markets where institutional frameworks for formal cooperation remain underdeveloped. The paper contributes to the strategic management and logistics literature by explaining why information sharing should be prioritized in platform-based horizontal collaboration initiatives and offering practical guidance for Indonesian and other Southeast Asian freight forwarding firms seeking digital transformation.

**Keywords:** Digitalization, Horizontal Collaboration, Coopetition, Information Sharing, Third-Party Logistics, Freight Forwarding, Digital Platforms, Business Performance.

## 1 Introduction

The Indonesian logistics sector faces a critical inflection point. Despite the country's strategic geographic position and increasing integration into global supply chains, the freight forwarding industry remains characterized by operational fragmentation, duplicative infrastructure investments, and thin profit margins. Previous study [1] demonstrates that internal information integration enables real-time information exchange with customers, yet Indonesian 3PL providers lag significantly in digital maturity. This

© The Author(s) 2026
R. Hurriyati et al. (eds.), *Proceedings of the 10th Global Conference on Business, Management, and Entrepreneurship (GCBME 2025)*, Advances in Economics, Business and Management Research 407,
https://doi.org/10.2991/978-94-6239-819-1_31

gap is not merely a technology adoption problem; it reflects a deeper challenge in how competing firms organize collaboration through digital infrastructure.

The Indonesian context presents a unique opportunity to study digitalization-enabled horizontal collaboration because: (1) the market remains highly fragmented with numerous small and medium-sized 3PL operators; (2) institutional frameworks for formal horizontal cooperation are nascent; (3) digital platform adoption is accelerating rapidly; and (4) the fundamental barriers to collaboration—trust, information asymmetry, and coordination costs—remain acute. According to [2] shows that digital platforms serve as enablers of digital transformation in logistics by enabling networking and improving information flow. This mechanism is particularly potent in emerging markets where alternative governance structures are underdeveloped.

A freight forwarder usually acts as an agent to source logistics services for shippers. It works closely with carriers such as shipping lines, airlines, trucking companies (2PL carriers), or other 3PLs for international cross-border and domestic shipping. This business is characterized by lower capital investment and entry barriers compared with carriers, and most of their major customers are small or medium-sized manufacturers or traders [3]. A freight forwarder, typically a light-asset company, serves as a vital intermediary between carriers and shippers, sourcing diverse transport solutions and generating profit by coordinating logistics delivery services. However, the fragmented nature of the industry poses significant challenges for 3PL freight forwarders in establishing horizontal collaborations, which are essential for accessing optimal costs and capabilities.

The freight forwarding industry, a critical component of global supply chains, is characterized by regional nuances, fragmentation, and persistent margin pressures 4. Asia-Pacific's manufacturing prowess, North America's tech-driven near-shoring trends, and Europe's intricate regulatory landscape each present unique challenges and opportunities for freight forwarders. Despite these regional variations, the potential of digitalization-enabled horizontal collaboration to address common industry pain points remains universally relevant. Digitalization offers emerging economies the chance to achieve scalable efficiency without the need for extensive infrastructure investments, while mature markets can leverage digital tools to enhance sustainability and resilience [5]. Furthermore, the implementation of blockchain-secured collaboration platforms can lead to substantial operational cost reductions (up to 40%) and accelerate dispute resolution processes by as much as 30%, delivering tangible value to stakeholders across the globe [6].

Horizontal collaboration in logistics refers to the coordination of activities and resources among firms operating at the same supply chain level and performing comparable logistics functions. The literature [7] defines this as situations where "competition arises among companies focused on the same target group" but where "co-opetition occurs when horizontal collaboration is jointly developed by competing firms." The crucial distinction is that horizontal collaboration encompasses both cooperators and competitors, whereas coopetition specifically addresses the paradox of simultaneously competing and cooperating.

Ferrell et al. [8] articulates that horizontal cooperation facilitates improved logistics planning and "permits involved companies to reach superior performances with respect

to those they would achieve individually." This is particularly salient for Indonesian freight forwarding, where fragmentation prevents firms from achieving scale economies or comprehensive geographic coverage individually. The traditional barriers to such collaboration—fear of opportunism, uncertainty about partner capabilities, and concern about free-riding on investments—are precisely the problems that digital information sharing addresses.

The horizontal collaboration literature has traditionally emphasized three critical success factors: information sharing, decision synchronization, and incentive alignment. This previous study [9] categorizes these alongside opportunism prevention as key behavioral factors. However, mounting evidence suggests a hierarchical relationship among these factors, with information sharing functioning as the foundational enabler upon which the others emerge naturally. This paper argues for a strategic reorientation toward information sharing for three substantive reasons: First, information asymmetry is the primary transaction cost barrier. Li, B et al. [10] demonstrates that digital technology enhances data sharing and information symmetry among supply chain enterprises, reducing supply-and-demand imbalances and accelerating information transmission efficiency. Second, decision synchronization and incentive alignment are emergent properties of effective information sharing, not prerequisites for it. Once competitors share real-time operational information through digital platforms, decisions naturally synchronize around shared visibility of capacity, demand, and costs. Similarly, when both parties see identical data regarding collaborative benefits and cost savings, incentive alignment follows. The study [11] highlights that "the growth of digital platforms and information sharing in the supply chain and logistics arena has considerably improved cross-departmental and inter-organizational collaboration." The causality runs from information sharing to other factors, not vice versa. Third, information sharing is pragmatically implementable within cooperative contexts, whereas decision synchronization and incentive alignment require formal governance structures and contractual mechanisms that are difficult to establish between competitors.

Digitization, the conversion of analog information into a digital format, lays the foundation for subsequent advancements, while digitalization leverages digital technologies to improve existing processes and operations [12]. Digitalization plays a crucial role in enabling and enhancing horizontal collaboration. Digital platforms provide a central hub for connecting various stakeholders in the supply chain, including shippers, carriers, freight forwarders, and customs agencies. These platforms facilitate efficient matching of freight capacity between collaborating 3PLs, reducing empty miles and optimizing resource utilization through collaborative planning, streamlining operation and expanding service offering. Digital transformation encompasses organizational, relational, and cultural shifts that fundamentally reshape a company, altering its processes and approaches to business and value creation [13].

This paper makes four key contributions: (1) It provides a comprehensive review of how digitalization reshapes horizontal collaboration in logistics, with specific attention to the information-sharing mechanism; (2) It develops a conceptual model positioning information sharing as the primary mechanism through which digital platforms enhance 3PL business performance; (3) It articulates why focusing on information sharing is strategically superior to traditional emphasis on decision synchronization and incentive

alignment, particularly in emerging market contexts; and (4) It offers a strategic roadmap for Indonesian freight forwarding firms navigating digital transformation in cooptative environments.

## 2 Research Methods

This research adopts a qualitative approach combining literature review with case study analysis. The literature review provides a theoretical foundation for understanding how digitalization and horizontal collaboration can impact business performance in the logistics sector. Case studies of Indonesian freight forwarding companies are used to explore how digital platforms facilitate co-opetition, focusing on real-world examples of companies adopting collaborative practices enabled by digitalized information sharing.

The data for this study were collected through interviews with executives and logistics managers from key 3PL providers and transport companies in Indonesia. These interviews focused on their experiences with digital platform adoption, horizontal collaboration, and the resulting impact on business performance.

## 3 Result and Discussion

Table 1 contextualizes each selected study across multiple analytical dimensions within horizontal collaboration topics. These dimensions include research type collaboration level (operational, tactical, and strategic), collaboration elements (information sharing, decision synchronization, incentive alignment), digital evolution (digitalization, digital platforms, and digital transformation), and performance focus (supply chain, organizational, and business performance).

**Table 1.** Review of horizontal collaboration literature

| Authors | Collaboration level | | | Collaboration element | | | Digital evolution | | | Performance measurement | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Authors** | Operational | Tactical | Strategic | Information Sharing | Decision Synchronization | Incentive Alignment | Digitalization | Digital Platform | Digital Transformation | Supply Chain Performance | Organizational Performance | Business Performance |
| **Wallenburg & Schaffler [14]** | √ | | √ | √ | √ | | | | | | √ | |
| **Daudi et al. [9]** | √ | | | √ | √ | √ | | | √ | √ | | |
| **Aloui et al.[15]** | √ | | | √ | | | √ | | | | √ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pomponi et al. [16]** | √ | √ | √ | √ | | √ | √ | | | √ | | √ |
| **Ferrell et al. [8]** | √ | √ | √ | √ | | √ | √ | √ | | √ | | √ |
| **Ajeramee et al. [17]** | | | √ | √ | | | √ | | | √ | | |
| **Palmieri et al. [18]** | | √ | √ | √ | √ | | | | | | √ | √ |
| **Izikki et al. [19]** | | | √ | | √ | | √ | | √ | | √ | |
| **Abideen et al. [11]** | √ | √ | √ | √ | | | √ | √ | √ | √ | | |
| **Pomponi et al. [20]** | √ | √ | √ | √ | | √ | √ | | | | √ | |
| **Pan et al. [21]** | √ | | √ | √ | √ | √ | | | √ | √ | | |
| **Serrano-Hernandez et al. [7]** | √ | X | √ | √ | | | √ | | | | √ | |
| **Mrabti et al. [22]** | √ | √ | √ | √ | | √ | | | | | √ | |
| **Hofmann & Osterwalder [23]** | | | √ | √ | | | √ | √ | √ | | | √ |
| **Chen a et al. [24]** | | | √ | √ | | | | √ | | √ | | √ |
| **Sanchez Rodrigues et al. [25]** | √ | √ | √ | √ | | | √ | | | | | |

All interview data were transcribed verbatim to ensure accuracy and fidelity to participants' narratives. The analysis process employed NVivo 15 software to facilitate systematic data organization and coding. A sequential coding procedure, comprising open, axial, and selective coding, was conducted.

**Table 2.** Example of the Open Coding Process

| No | Example of a transcript's excerpt | Open Codes |
|---|---|---|
| **1** | Enhanced coordination of operational plans and schedules through integration: all parties view the same platform, enabling quick responses to disruptions. (B4). | Data-driven decision |

| | | |
|---|---|---|
| **2** | Forwarding platforms should transform into e-commerce models: fully digital, monitorable steps from e-commerce order, seller pickup, to courier handling. (A3). | Real-time data transparency |

Based on the interview results, the researchers analyzed the transcripts and consol dated open codes that represented digitalized horizontal collaboration factors. The open coding extraction process is exemplified in Table 2. The source code A3 in the example below refers to Case A, Informant 3. The open codes underscore how digitalization drives horizontal collaboration in 3PL freight forwarding by creating interconnected operational enablers and overcoming integration barriers. Key elements include electronic data interchange (EDI), digital dashboards, standardized data, and digital tools (e.g., CargoWise), which enable seamless information sharing and interoperability among partners. Collectively, these mechanisms convert technology compatibility challenges into collaborative advantages, promoting operational efficiency, reducing redundancy, and enabling scalable partnerships among 3PL firms. We systematically coded phrases, sentences, or paragraphs from interview transcripts into specific items. These items were then mapped to concepts. The axial coding extraction process is exemplified in Table 3.

Concepts were further mapped to dimensions following the preliminary conceptual model where applicable. New dimensions emerged when the preliminary model failed to encompass emerging ideas. For example, ‘‘process digitalization’’ was linked to the dimension of ‘‘digitalization’’. This analysis highlights potential disparities between the two companies in the obstacles and competencies required to implement horizontal collaboration.

**Table 3.** Example of the Axial Coding Process

| No | Example of Open Codes | Axial Codes |
|---|---|---|
| **1** | Real-time data transparency | Communication & coordination Real-time data sharing and communication |
| **2** | VMS, OMS, TMS functionality | Real-time data sharing and communication |

The study synthesizes the literature to propose a conceptual model (see Fig 1) with hypotheses exploring relationships among digitalization, including digital logistics platform adoption, collaboration, and business performance. To answer research questions, several propositions are formulated to explore the correlations between dimensions:

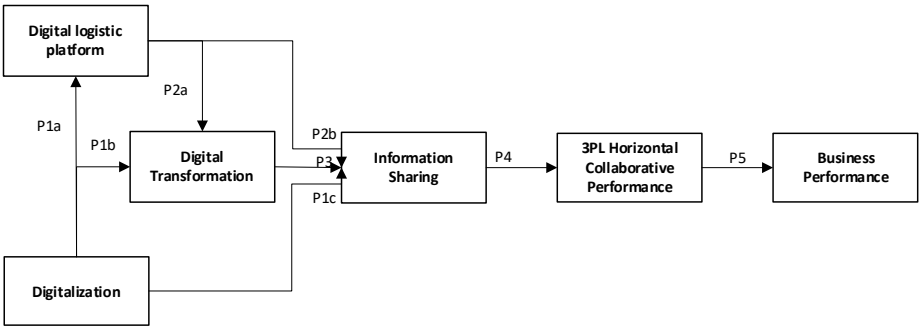


**Fig. 1.** Validated Conceptual Model - Information Sharing as the Mechanism Linking Digitalization to Business Performance

- Proposition 1a: Digitalization facilitates the development and adoption of digital logistics platforms in supply chain ecosystems.
- Proposition 1b: Digitalization drives organizational transformation through seamless integration of advanced technologies such as AI, IoT, and cloud infrastructure.
- Proposition 1c: Digitalization enhances inter-organizational information sharing by establishing standardized data protocols and connectivity frameworks.
- Proposition 2a: Digital logistics platforms accelerate supply chain transformation via workflow automation and data centralization, streamlining operational processes.
- Proposition 2b: Digital platforms improve information-sharing quality through real-time, standardized data exchange, reducing latency and format inconsistencies.
- Proposition 3: Digital transformation deepens information-sharing intensity by dismantling organizational silos and fostering cross-functional data integration.
- Proposition 4: Enhanced information sharing elevates collaborative performance by enabling cost reductions and rapid disruption resolution among supply chain partners.
- Proposition 5: Improved collaborative performance directly enhances business performance through greater operational efficiency, elevated customer satisfaction and accelerated service innovation.

A fundamental insight emerging from this analysis is that digital-era horizontal collaboration should be reframed from a governance challenge (how to structure formal cooperation) to an information architecture challenge (what information should be shared, how, and with whom?). Barykin, S. E. et al. [26] describes logistics platforms as "special organizational structures that coordinate the processes of goods movement and forms of interaction between participants." This definition highlights the coordinative function—not through formal governance but through information flow. This reframing has profound implications for implementation. The information architecture itself creates coordination without requiring explicit governance. When all firms can see identical data about capacity, demand, and costs, coordination emerges organically.

A secondary but important insight is that digital platforms function as trust intermediaries in cooperative contexts. Zhao et al. [27], notes that "the establishment of digital platforms enables end-to-end supply chain connectivity, interweaving and integrating

supply chain nodes to form a supply chain network structure." This connectivity serves trust functions: it reduces the need for direct firm-to-firm trust by substituting platform-mediated trust. When Firm A is hesitant to share information directly with competitor Firm B due to trust concerns, the platform intermediary role reduces this concern. Both firms share the platform; the platform manages information flow according to predetermined rules agreed to by both parties. This is particularly valuable in Indonesian contexts where direct business relationships between competitors may be minimal or adversarial.

Information-sharing platforms create positive ecosystem effects that accelerate participation. 28 validates this mechanism: "the value to users increasing as more maritime logistics partners join the platform" and "if more users join the digital logistics platform, more supply chain partners will be willing to carry out logistics collaboration on the platform, which can accelerate the digital transformation process." These network effects mean that early platform adopters benefit disproportionately—the platform becomes more valuable as participation increases.

Drawing on the reviewed literature & case study results, we propose a conceptual model in which information sharing serves as the primary mediator through which digitalization improves business performance in horizontal collaboration contexts. Zhou et al. [1] empirically validates that "customer collaboration partially mediates the relationship between digitalization and financial performance but fully mediates the relationship between digitalization and service performance." This finding indicates that when digitalization enables collaboration, service performance improvements occur through collaboration mechanisms; financial improvements have additional pathways. For horizontal collaboration (as opposed to vertical customer-supplier collaboration), we hypothesize that information sharing serves as the primary mediator for both financial and service performance. The mechanism operates as follows:

Stage 1: Digitalization Enables Information Standardization. Digital platforms create standardized data formats, protocols, and verification mechanisms. Indonesian 3PL firms, operating on heterogeneous legacy systems, struggle to exchange information. Platform adoption creates a common language.

Stage 2: Information Standardization Reduces Transaction Costs. Li, B. et al. [10] shows that "digital technology allows enterprises to collect market information more comprehensively and accurately, accelerates the efficiency of information transmission between enterprises, and greatly improves the degree of information symmetry." When competitors share capacity, pricing, and demand information through standardized platforms, the transaction costs of coordination collapse. Firms no longer need to negotiate individually; information flows are automatic.

Stage 3: Reduced Transaction Costs Enable Incremental Collaboration. Lower transaction costs mean collaboration becomes profitable even for small shipments or marginal routes. Indonesian 3PLs can begin sharing backhaul capacity, consolidating shipments, or splitting routes without elaborate contracts. This previous study [11] emphasizes that "collaborative supply chain and transportation network design, profit-sharing, inventory bundling, distribution, and vehicle routing" all emerge from this information foundation.

Stage 4: Collaboration Generates Financial and Service Performance Improvements. The performance improvements are concrete: reduced empty running through capacity sharing, consolidated shipments that reduce per-unit costs, shared infrastructure investments, and improved service frequency for customers. Serrano-Hernández et al. [7] notes that "reducing transportation costs is one of the most pursued goals in horizontal collaboration," but also that firms achieve "improving service quality, diminishing environmental impact, reducing risk, and enhancing market share."

Traditional collaboration frameworks suggest that decision synchronization must precede collaboration—firms must agree on what decisions to make (routing, pricing, capacity allocation). However, in platform-enabled contexts, decision synchronization emerges from shared information. When all participants can see identical, real-time data on capacity, demand, and costs, decisions naturally synchronize. Zhao et al. [27] demonstrates that "digital platforms integrate operational information of supply chain partners and enhance the level of trust, which will further facilitate resource allocation and collaboration at the whole supply chain level."

For Indonesian freight forwarding, this suggests that initial platform development should focus on achieving critical mass in a specific geographic region or service segment. Once platform benefits become visible in one region, adoption spreads to adjacent regions through demonstration effects. SMEs particularly benefit from this approach, as they can observe the platform's benefits before committing to participate.

## 4 Conclusion

Indonesian freight forwarding firms face the dual challenge of overcoming operational fragmentation while navigating institutional and competitive barriers that hinder formal horizontal collaboration. This paper argues that digitalization-enabled information sharing provides a practical mechanism for collaboration by facilitating real-time information exchange without requiring complex governance structures. Existing studies demonstrate that digital integration strengthens inter-organizational connectivity and enables efficient information exchange [1], while digital platforms further enhance collaboration through network effects that encourage participation [28]. Moreover, strategic information sharing has been shown to improve organizational and financial performance [24], supporting the proposition that information sharing serves as the primary driver of successful horizontal collaboration, with decision synchronization and incentive alignment developing progressively as trust increases. For the Indonesian freight forwarding industry, platform-based information sharing offers a low-barrier, legally feasible approach that is particularly suitable for the SME-dominated market, allowing firms to improve operational efficiency while preserving competitive independence. Accordingly, the development of neutral industry platforms, phased information-sharing practices, and integrated performance measurement systems can foster sustainable collaboration and enhance supply chain competitiveness. As Indonesia becomes increasingly integrated into regional and global logistics networks, prioritizing digital information-sharing platforms represents a realistic and effective pathway toward achieving resilient, collaborative, and competitive freight forwarding operations.

**Disclosure of Interests.** The authors have no competing interests to declare that are relevant to the content of this article.

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