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Competitive Analysis and Business Strategies of NVOCCs in the Maritime Industry in Indonesia

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Abstract: This study aims to explain the strategic adaptation mechanisms that shape the competitiveness of Non-Vessel Operating Common Carrier (NVOCC) companies in the competitive conditions of the Indonesian maritime industry. As providers of Less-than-Container-Load services, NVOCCs play an important role in integrating MSMEs into global trade and enhancing the efficiency of the national supply chain. However, NVOCCs face complex adaptive pressures arising from inter-institutional regulatory uncertainty, volatility in logistics costs, global market dominance, and accelerated digitalisation of logistics. This study uses a predominantly qualitative approach supported by secondary quantitative data. Data were collected through in-depth interviews, focus group discussions, and field observations at major Indonesian ports, as well as analysis of policy documents and industry reports. The analysis was conducted using NVivo and synthesised by integrating the PESTEL framework, Porter's Five Forces, the Resource-Based View, Porter's Generic Strategies, and the Herfindahl–Hirschman Index (HHI) as components shaping strategic adaptation mechanisms. The results show that NVOCC competitiveness is formed through dynamic and contextual strategic adaptation mechanisms. Regulatory and infrastructure instability trigger relational strategies and informal coordination, while cost pressures drive operational efficiency through cargo consolidation. Meanwhile, the dominance of global players and limited digital capabilities reinforces the need for technology-based service differentiation and customer relationships. An HHI value of 1,267 indicates a market structure with moderate concentration. Key findings confirm that adaptive hybrid strategies that combine cost efficiency and service differentiation are a key mechanism for maintaining NVOCC performance, particularly in the MSME export segment. This research contributes to the development of the Integrated Strategic Adaptation Model (ISAM) and provides implications for strengthening national logistics competitiveness.

Keywords: NVOCC, Competitiveness, Competitive Analysis, Business Strategy

INTRODUCTION

Indonesia, as the world's largest archipelagic state with more than 17,000 islands, is highly dependent on maritime transportation to sustain connectivity and trade. Around 90% of national export–import volumes are transported by sea, making maritime logistics efficiency a key determinant of national economic competitiveness ((Pallis et al., 2022; Van Dijk et al., 2015)). This strategic role is reinforced by Government Regulation No. 10 of 2006 (UU RI 66, 2024) and Ministry of Transportation Regulation No. 49 of 2005 on the National Transportation System (Sistranas) (PM RI, 2005), which emphasise efficient, integrated, and sustainable transportation, particularly sea transport to support economic growth and interregional connectivity in an archipelagic context.

In maritime transport, containerization has become dominant for general cargo due to its efficiency in terms of cost and time, with services divided into Full Container Load (FCL) and Less-than-Container-Load (LCL) schemes (Rodrigue, 2020; Saputra, 2020). Indonesia's international container traffic has grown steadily, with imports increasing from 3,998,793 TEUs in 2021 to 4,423,773 TEUs in 2024 and exports rising from 3,873,636 TEUs to 4,277,053 TEUs over the same period, reflecting average annual growth of approximately 3.4%. This balanced growth highlights stable trade expansion alongside the continuing need to strengthen logistics infrastructure and optimise port operations to maintain global competitiveness.

Within this system, LCL plays a critical role by enabling small and medium-sized enterprises (SMEs) and exporters with limited shipment volumes to access international markets without bearing the full cost of a container. Given Indonesia's dispersed geography, LCL provides an effective solution for connecting regions with relatively small but consistent trade flows. Although comprehensive national LCL movement data are limited, global estimates indicate that LCL accounted for nearly 15% of total container volume during 2010–2011 (inboundlogistics, 2022), underscoring its structural importance in maritime logistics.

Non-Vessel Operating Common Carriers (NVOCCs) are central actors in the LCL system, providing consolidation and logistics services without owning vessels (Robinson, 2023; Wolf, 2023). In Indonesia, NVOCCs are regulated under the Ministry of Transportation Regulation No. 59 of 2021 (PM RI, 2021), which classifies them within transportation management services. Internationally, NVOCC governance varies widely, ranging from licensing with financial guarantees in the United States (FMC OTI, 2021), administrative registration in China (SSE, 2013) from customs- and logistics-based controls in Japan and Singapore (Customs MOF, 2017; SIN Customs, 2026) to integration within multimodal transport regimes in India (Indian MOLJ, 2000). These diverse models reflect different approaches to legal certainty, compliance burdens, and supervisory effectiveness.

This study focuses on the competitive conditions and business strategies of NVOCCs in Indonesia, where competition is intensifying due to technological change, regulatory volatility, and the growing number of industry players (Pallis et al., 2022; Rodrigue, 2020). NVOCCs face performance challenges, including unstable profitability, limited cost efficiency, and gaps in digital capability, indicating that Porter's Generic Strategies alone are insufficient to explain performance dynamics. Instead, these challenges interact across external pressures, competitive structures, and internal capability constraints, creating strategic dilemmas that require an adaptive, integrated approach.

Accordingly, this research addresses a key gap in the literature by providing a holistic analysis of the Indonesian NVOCC industry that integrates external factors (PESTEL), competitive forces (Porter's Five Forces), internal capabilities (Resource-Based View), and strategic alignment (Contingency Theory), while incorporating digitalization as a critical enabler of competitiveness (Borggreve & Wilmsmeier, 2025; Pallis et al., 2022). The study seeks to answer five research questions concerning environmental influences, competitive

structure, internal strategic resources, strategic alignment, and formulate an Integrated Strategic Adaptation Model (ISAM) to strengthen the sustainable competitiveness of NVOCCs in Indonesia.

METHOD

This study adopts a qualitative-dominant mixed-method research design, in which qualitative inquiry serves as the primary approach and is supported by secondary quantitative data. This design is chosen because the phenomena under investigation, business strategies, competitive dynamics, regulatory frameworks, digitalisation, and the internal capabilities of Neutral Non-Vessel Operating Common Carriers (NVOCCs) are complex, contextual, and closely tied to the subjective interpretations and experiences of industry actors. Accordingly, an exploratory qualitative approach provides the main analytical framework for understanding meanings, interaction patterns, and how industry players perceive and respond to changes in the strategic environment. To complement this, secondary quantitative data such as market structure indicators, LCL volume movements, concentration of global players, and logistics cost metrics are employed as supporting evidence, particularly through the use of the Herfindahl–Hirschman Index (HHI), to strengthen and validate qualitative interpretations without shifting the study into a fully quantitative paradigm.

The research is conducted in several stages to ensure a comprehensive, in-depth analysis of competitive conditions and business strategies among NVOCCs in Indonesia. Given the dynamic and evolving nature of the maritime logistics industry, a systematic research process is essential (Pallis et al., 2022) . The qualitative phase focuses on collecting exploratory data through in-depth interviews, Focus Group Discussions (FGDs), field observations, and document analysis, enabling a nuanced understanding of industry dynamics and external factors shaping NVOCC operations. This staged approach allows qualitative insights to remain central, while quantitative indicators function as contextual reinforcement for the overall analysis.

RESULT AND DISCUSSION

NVOCC

The NVOCC market in Indonesia is relatively balanced between local and global players. Local players excel in service flexibility and customer proximity, while global players stand out in international networks and digital integration. Offices are concentrated in Jakarta, Surabaya, and Semarang, with important nodes in Batam and Belawan. Collaboration commonly occurs through co-loading and interlining. The Indonesian NVOCC market is relatively balanced between local and global players, with 54% local and 46% global. This drives competition on two axes: (1) international network reach (supported by global players) and (2) local service proximity & flexibility (the advantage of local players).

Freight Forwarder

There are 11 entities in total, with 64% global and 36% local. Offices are concentrated in Jakarta, with important hubs in Surabaya and Semarang. Other cities, such as Batam, Medan, and Denpasar/Bali, serve as hubs for international routes and for tourism/retail destinations. Some entities list CGK (Soekarno–Hatta) as their operating airport.

CFS

All CFS are local players with operational footprints in the three main LCL flow corridors: Tanjung Priok (North Jakarta), Tanjung Emas (Semarang), and Tanjung Perak (Surabaya).

External Factors Affecting NVOCC (PESTEL Analysis) in the Context of Strategy Formulation

In this context, field findings are not positioned as separate descriptions, but rather as external environmental inputs that are processed through the company's strategic adaptation mechanisms, as formulated in the Integrated Strategic Adaptation Model (ISAM). Based on the integration of NVivo findings with the PESTEL framework, it can be concluded that the NVOCC industry in Indonesia operates under multidimensional and interrelated pressures, including regulatory uncertainty caused by overlapping regulations and sudden changes in export–import policies, limitations of national digital systems such as INAPORTNET and CEISA that do not yet fully accommodate NVOCC roles, and economic pressures in the form of price wars, tariff volatility, and the dominance of global players with superior networks and scale advantages. These challenges are further intensified by gaps in digital and human resource capabilities, the lack of seamless integration within the national logistics ecosystem, and uneven adoption of green logistics practices. At the same time, social factors indicate that relationships, trust, and reputation remain critical differentiators in a relatively narrow and relationship-driven industry. Consequently, the strategic implications for NVOCCs require an adaptive and selective approach, encompassing collective regulatory advocacy, flexible process design, operational risk buffering, focused cost leadership, niche-based and relational differentiation strategies, phased investment in digital capabilities and human resource development, process integration through middleware solutions, and the gradual implementation of green logistics initiatives, in order to sustain resilience and competitiveness within a dynamic logistics environment.

External Factors as Input in ISAM

The results of the NVivo analysis indicate that the external environment of the NVOCC industry in Indonesia is complex, disorganised, and highly uncertain. From a PESTEL perspective, several key inputs consistently emerge in the field's findings.

First, from a political-legal perspective, regulatory uncertainty is the most dominant factor. Overlapping policies among Minister of Transportation Regulation No. 59/2021, Minister of Transportation Regulation No. 8/2022, and Minister of Finance Regulation No. 158/2017 have led to inconsistent operational procedures, increased transaction costs, and prolonged service times. This finding is reinforced by the fact that the position of NVOCCs has not been formally accommodated in the national system, such as INAPORTNET and OSS, so that NVOCCs often operate through contractual channels or "piggyback" on JPT entities. This condition renders regulation not merely an administrative constraint but a source of structural uncertainty that shapes the industry's competitive conditions.

Second, from a technological perspective, the digitization of the national logistics system (CEISA, NLE, SSM, INAPORTNET) has not been seamlessly integrated. System disruptions, data input duplication, and unclear cargo positioning (between JPT and NVOCC) are significant operational risk inputs. The gap in technological readiness and human resources, in which the majority of local players remain conventional, indicates that technology does not yet function as an evenly distributed enabler but rather as a new source of pressure in NVOCC operations.

Third, from an economic perspective, field findings confirm strong cost and margin pressures due to price wars, negative rebate practices, and tariff fluctuations. These pressures are exacerbated by the dominance of global players with international networks, who bid for access, slot space, and much greater volume. This asymmetric market structure is a key factor limiting the strategic space available to local NVOCCs.

Fourth, the Social dimension reveals the unique characteristics of the NVOCC industry in Indonesia. The culture of relationships, trust, and reputation in this relatively "narrow"

industry makes service quality and customer proximity key factors in business sustainability. This social factor acts as a balancing input against regulatory, technological, and economic pressures.

Finally, the Environmental dimension is beginning to emerge as a medium-term input. Global players have implemented green logistics practices, whereas most local NVOCCs remain in the early stages of readiness. Environmental pressures are not yet dominant, but have the potential to become a determining factor in future strategies.

A. Adaptation Mechanisms as a Process in ISAM

Faced with these external environmental inputs, field findings show that NVOCCs do not respond passively, but rather through a series of strategic adaptation mechanisms. Within the ISAM framework, these mechanisms constitute processes that link the external environment to the company's performance and competitive position.

In response to regulatory uncertainty, NVOCCs develop a regulatory navigation strategy that combines minimal-effective compliance, flexible operational process design, and collective advocacy through industry associations. This strategy reflects context-based adaptation, in which the primary objective is not maximum compliance but operational continuity and risk control.

In terms of technology, the adaptation process is more defensive and gradual. NVOCCs implement risk buffering through contingency SOPs, operational time buffers, and digital document pre-checks to mitigate system disruptions. Technology adoption is selective and capability-based, often through shared systems facilitated by associations rather than through large-scale, independent investments.

Facing economic pressures and the dominance of global players, NVOCCs have not fully adopted extreme low-cost strategies. Instead, a pattern of selective cost leadership has emerged, including demand-based co-loading, route optimisation, and dynamic pricing, combined with a limited focus on differentiation within specific lanes or commodities. This strategy indicates that adaptation is hybrid rather than dichotomous between cost and differentiation.

On the social dimension, the adaptation process is manifested through a relational strategy, namely, strengthening services, response speed, and customer account intimacy. These social factors serve as internal mechanisms that strengthen the company's resilience amid external pressures.

B. Strategic Implications as Output in ISAM

The integration of external inputs and adaptation processes yields strategic outputs unique to the NVOCC industry in Indonesia. The findings of this study indicate that effective NVOCC strategies are not single, universal strategies but rather adaptive hybrid strategies that balance selective efficiency, limited differentiation, and regulatory flexibility.

This output is reflected in the ability of some NVOCCs to maintain operations and customer relationships despite being in an unstable environment. In other words, the competitive advantage of NVOCCs in Indonesia is situational and adaptive, rather than structural or scale-based.

C. Answer to RQ1 and Relevance to ISAM. How do external factors (PESTEL) influence industry dynamics and NVOCC business strategies in Indonesia?

Based on the integration of field findings and PESTEL theory, it can be concluded that external factors directly shape both industry dynamics and the business strategies of NVOCCs in Indonesia through an adaptive mechanism that translates regulatory, technological, economic, social, and environmental pressures into context-specific strategic

responses. Within the ISAM framework, PESTEL dimensions function as environmental inputs, NVOCC adaptive responses as strategic processes, and hybrid strategy patterns as outputs. These findings confirm that NVOCC's success in Indonesia is not primarily determined by the scale of its resources, but by its ability to continuously adapt strategies to a complex, fragmented, and unsynchronised external environment. Political and regulatory pressures create structural uncertainty stemming from the lack of explicit institutional recognition of NVOCCs in existing regulations and national logistics systems, thereby forcing firms to rely on informal, contract-based arrangements and network-driven coordination. At the same time, economic pressures manifested in price wars, extreme rebates, and the dominance of global players in a semi-oligopolistic market structure erode local margins and push NVOCCs toward focus and niche-based strategies rather than broad cost competition.

In this environment, social and relational factors act as a stabilising force that partially offsets structural constraints, as trust, relationship-based differentiation, LCL co-loading collaboration, and the mediating role of industry associations generate non-price competitive advantages for local NVOCCs. Technological factors further reinforce industry asymmetry by creating a dual structure in which global NVOCCs benefit from integrated digital systems. In contrast, most local players remain conventional due to limited system integration and weak digital human resources, necessitating a gradual, low-efficiency-oriented approach to digital adoption. In addition, environmental and international legal pressures, particularly regarding green logistics and advanced documentation standards, set industry benchmarks that local NVOCCs have not fully met, thereby widening the competitiveness gap. Overall, in response to RQ1, the findings demonstrate that external PESTEL factors not only influence the dynamics of the NVOCC industry but also directly determine the emergence of hybrid adaptive strategies that combine selective efficiency, limited differentiation, and regulatory navigation, highlighting the importance of strategic fit based on structural flexibility, cost efficiency, and evolving digital capabilities.

Competitive structure and market forces (Porter's Five Forces) shape the competitive position of NVOCCs

This subchapter aims to answer RQ2, namely how competitive structure and market forces shape the competitive position of NVOCCs in Indonesia, by integrating empirical findings of Competitive Dynamics – Porter's Five Forces and Market Concentration Analysis – Herfindahl–Hirschman Index/HHI. Unlike the previous discussion, which emphasised the identification of competitive factors and patterns, this section focuses on the structural implications of the competition configuration for the competitive position of NVOCCs, particularly in the context of intense price rivalry, global player dominance, and bargaining power imbalances within the maritime logistics chain.

A. P5F and HHI competitive structure

Based on the NVivo findings, the competitive structure of the NVOCC industry in Indonesia is defined by intense rivalry, strong bargaining power of buyers and suppliers, and a relatively high level of market concentration in certain segments, creating an asymmetric competitive environment. The interaction between competitive pressure, as explained by Porter's Five Forces, and market concentration, measured by HHI, shapes competitive dynamics while simultaneously constraining the strategic space available to local NVOCCs when competing directly with global players. High rivalry, manifested in price wars, negative rebate practices, and service homogenization, is closely linked to concentration in segments dominated by global players with superior control over volume, international networks, and global accounts. From an HHI perspective, this concentration intensifies rivalry and shifts

competition from value-based to price-based, compressing industry margins and placing local NVOCCs in a defensive competitive position. As a result, local players are compelled to pursue decommoditization strategies through service differentiation, schedule reliability, and SLA consistency rather than direct price competition, a posture further reinforced by external uncertainties, such as geopolitical risks and volatility in global trade patterns, which increase cost and schedule instability.

At the same time, the competitive position of NVOCCs is shaped by structural asymmetries in entry barriers, buyer power, supplier power, and substitution threats. Although formal entry barriers for local players are relatively low, new entrants quickly face intense price competition and scale constraints. In contrast, global players can enter through acquisitions, alliances, or networks and rapidly dominate market volume, creating a paradox of low formal but high effective entry barriers. Strong buyer bargaining power, driven by price-sensitive freight forwarders and shippers and by the availability of direct contracts with shipping lines, further weakens the intermediary role of NVOCCs and forces a strategic shift toward value-added services such as expediting documentation, credit facilities, and operational reliability. On the supplier side, the dominance of shipping lines over slots and tariffs limits NVOCC flexibility, prompting adaptive strategies centred on volume consolidation and multi-carrier sourcing to enhance relative bargaining power. Finally, the threat of substitutes—such as shifts from LCL to FCL, digital freight platforms, and freight forwarders opening their own consolidations—erodes traditional NVOCC roles, making LCL specialisation and coopetition strategies, including structured co-loading and revenue-sharing arrangements, essential for sustaining a defensible competitive position within an increasingly contested industry structure.

B. Integration with ISAM: Input–Process–Output

Within the framework of the Integrated Strategic Adaptation Model (ISAM), the findings in this table can be positioned systematically. ISAM inputs originate from a competitive structure characterised by high rivalry, market concentration (HHI), supplier and buyer dominance, and the threat of substitution. The ISAM process is reflected in NVOCC strategic adaptation mechanisms, such as service differentiation, focus on niche segments, volume consolidation, value-based pricing, and coopetition. The ISAM output is the formation of an adaptive and selective NVOCC competitive position, rather than a structurally dominant one.

Thus, in response to RQ2, it can be concluded that the competitive structure and market power shape the competitive position of NVOCCs through a combination of rivalry pressure and high market concentration, which forces NVOCCs to avoid direct price-based competition and adopt strategies of focus, limited differentiation, and strategic collaboration. The competitive position of NVOCCs in Indonesia is not the result of economies of scale but rather of their ability to translate structural pressures into adaptive strategies, as formulated in ISAM.

C. Answer to RQ2 and Relationship with ISAM. How do competitive structure and market forces (Porter's Five Forces and IHH) shape the competitive position of NVOCCs in Indonesia?

Based on the synthesis of findings for RQ2 using Porter's Five Forces, the competitive structure of the Indonesian NVOCC industry places local players in a relatively weak competitive position. Intense rivalry among competitors, characterised by price wars, extreme rebates, and the dominance of global players in an oligopolistic, highly concentrated market, exerts strong pressure on margins and leaves limited scope for price-based competition. High buyer bargaining power, driven by price-sensitive customers and low switching costs,

compels NVOCCs to maintain competitive tariffs while simultaneously strengthening value-added services to sustain customer loyalty. Strong supplier bargaining power, particularly from shipping lines, CFS operators, and port authorities that control critical operational processes, constrains operational flexibility and restricts opportunities for cost differentiation, forcing NVOCCs to rely on internal efficiency and strategic relationships. Furthermore, the threat of new entrants, supported by relatively low entry barriers and the absence of specific NVOCC regulations, intensifies competition and accelerates market fragmentation, especially among small local players. Finally, the threat of substitutes, including direct consolidation by freight forwarders, shifts from LCL to FCL, and the use of multimodal transport, weakens the strategic position of NVOCCs and requires firms to clearly define their value proposition and focus on specialised and differentiated services to remain competitive.

1) The competitive structure of NVOCCs is highly intense (*high rivalry*).

Findings indicate that the NVOCC industry in Indonesia is characterised by intense rivalry, as evidenced by price wars, negative rebate practices, and service homogenization. These conditions have led to compressed profit margins and made price-based competition the dominant pattern. As a result, the competitive position of NVOCCs, especially local players, becomes structurally weak if they rely solely on tariffs.

Implications for competitive position: NVOCCs are not competitive on price, so they seek non-price advantages.

2) Market concentration (HHI) strengthens the dominance of global players.

HHI analysis indicates that market share is concentrated in certain segments, with a small number of global players dominating. These players have advantages in international networks, global accounts, slot access, and scale that local NVOCCs cannot match.

Competitive position implications: Local NVOCCs are subordinate within the market structure and must avoid direct (*head-to-head*) competition with global players.

3) Buyer bargaining power is very high and weakens the position of NVOCCs.

Freight forwarders and shippers have numerous service options, are price-sensitive, and, in many cases, have direct contracts with shipping lines. This reduces buyer dependence on NVOCCs and narrows the scope for tariff negotiations.

Competitive implications: NVOCCs' position as intermediaries is vulnerable unless they can offer value-added services that shipping lines do not provide.

4) Suppliers (shipping lines) have stronger bargaining power than NVOCCs.

Shipping lines control slots, space, and tariff structures, making NVOCCs dependent on supplier policies. This dependence is even greater for NVOCCs with small volumes.

Competitive position implications: NVOCCs have low bargaining power upstream, so their competitive position is largely determined by their ability to consolidate volume or build multi-carrier relationships.

5) The threat of substitution is real and growing.

Substitution arises from: a) Multimodal and airfreight services; b) The shift from LCL to FCL by importers/exporters who consolidate volumes; c) Digital freight platforms; d) Shipping lines and freight forwarders that open their own consolidations.

Competitive implications: The traditional role of NVOCCs is increasingly being eroded, so their competitive position can be maintained only through LCL specialisation and value-added services.

6) The threat of new entrants is asymmetrical

a) Local entrants can easily enter the market but are quickly eliminated due to price wars; b) Global entrants enter through networks/acquisitions and immediately dominate volume.

Implications for competitive positioning: 1) The market structure is asymmetrical, making it difficult for local NVOCCs to grow organically.

7) Interconnection with ISAM

Thus, in response to RQ2, it can be concluded that the competitive structure and market forces shape the competitive position of NVOCCs in Indonesia as structurally weak if they rely solely on price or scale. A sustainable competitive position is instead built through adaptive and selective strategies, such as focusing on niche segments or specific commodities, differentiating value-added services, consolidating volume, and strategic collaboration (coopetition). Within the ISAM framework, the competitive structure and market concentration function as environmental inputs, strategic adaptation mechanisms as processes, and the adaptive-selective competitive position of NVOCCs as outputs. These findings confirm that the competitiveness of NVOCCs in Indonesia is not determined by market dominance but rather by their ability to manage structural pressures through contextual and sustainable strategies.

Internal Capabilities as a Strategic Advantage for NVOCC Companies Based on the Resource-Based View (RBV)

This subsection explicitly addresses RQ3: which internal capabilities underpin the strategic advantages of NVOCC companies within the Resource-Based View (RBV). Departing from the empirical findings in Internal Resources & Competitive Advantages and the NVivo coding results, the discussion focuses on internal capabilities that have been shown to work in practice and meet the VRIO criteria. Rather than inventorying resources separately, this subsection examines how NVOCC orchestrates digital technology capabilities, data integration and process reliability, human resources and trust-based relationships, strategic networks and collaboration, sales performance management, and service differentiation for MSMEs and e-commerce into sustainable competitive advantages**.** Within the ISAM framework, these capabilities are treated as internal inputs that are strategically adapted to produce outputs in the form of adaptive and defensible competitive positions amid the pressures of competition in the NVOCC industry.

A. Internal Capabilities of NVOCCs in Indonesia

The competitive advantage of NVOCCs in Indonesia is shaped by the orchestration of mutually reinforcing internal capabilities, rather than by a single resource. NVivo findings indicate that the most adaptive and consistent companies are those that integrate technology, processes, human resources, networks, and service innovation into a well-organised operational system.

Based on the integration of NVivo findings with the Resource-Based View (RBV) and VRIO framework, the competitive advantage of NVOCCs in Indonesia is shaped by a combination of technological, operational, relational, and institutional capabilities that are valuable, rare, difficult to imitate, and organizationally embedded. Digital technology capabilities, such as AI-based document automation and integrated internal systems across branches, enhance speed, accuracy, cost efficiency, and service consistency, enabling differentiation through operational reliability and clear service-level agreements. Process and data integration capabilities, including digital warehouse management systems and strong internal platforms that compensate for non-seamless national systems, support transparency,

reduce disputes, and sustain service continuity, reinforcing reliability-based differentiation. Human resources and relational capabilities, particularly trust, reputation, and fast response in a relationship-driven industry, function as inimitable assets that stabilise volumes and customer loyalty. In addition, international network access, slot capacity guarantees, direct services, and participation in global bidding create entry barriers and schedule certainty for certain NVOCCs that are difficult for local players to replicate, thereby encouraging focused strategies on specific lanes, commodities, or market segments. Collaborative capabilities, such as LCL co-loading and service bundling with CFS operations, enable cost efficiency, volume stabilisation, and one-stop service offerings, thereby increasing switching costs, particularly for MSMEs and e-commerce clients. Finally, managerial and pricing capabilities, including margin discipline, adaptive pricing, portfolio and segmentation strategies, and collective institutional capabilities through associations for policy advocacy, allow NVOCCs to mitigate market volatility and regulatory risk, demonstrating that sustainable competitiveness in the NVOCC industry is increasingly driven by internally developed, capability-based strategies rather than price competition alone.

The following capabilities explain how NVOCCs manage and sustain competitive advantage.

First, digital technology capabilities emerged as the operational backbone. The implementation of integrated operational systems (G-Soft/Seafreight), AI-based document automation, and WMS/WIMS enabled process acceleration, error reduction, and service consistency across branches. These capabilities meet the VRIO criteria because they are valuable and difficult to imitate without investment, system design, and organisational learning. However, the findings also confirm that excellence does not come from technology alone, but from the integration of technology with processes and human resources.

Second, data integration capabilities and process reliability are important differentiators when external systems (INAPORTNET–CEISA–NLE) are not yet seamless. NVOCCs that have a single source of truth, data-reconciliation SOPs, and contingency mechanisms can maintain clarity regarding cargo positions and service continuity. This aspect of reliability is often overlooked, even though, for corporate and SME customers, the certainty and consistency of service are more valuable than the lowest price.

Third, human resource capabilities and trust-based relationships serve as social capital that reinforces other strengths. The "narrow" nature of the logistics industry makes reputation and quick response the determinants of customer loyalty. These capabilities are socially inimitable, as they are built through a long track record, service culture, and cross-functional coordination that competitors cannot instantly replicate.

Fourth, network capabilities and strategic collaboration, including international network access, direct service, slot space, SOC, global account contracts, and trust-based co-loading, provide volume stability and cost efficiency. These collaborative capabilities demonstrate that NVOCC's competitive advantages are not always individual, but often stem from collective capabilities facilitated by relationships.

Fifth, adaptive sales and pricing performance management capabilities bridge operational excellence with financial results. Amidst price wars and negative rebate practices, the leading NVOCCs are those capable of managing margins, balancing the nominated-freehand-co-loading segments, and leveraging service excellence as a selling point. This capability emphasises that internal excellence must be translated into market performance, not just internal efficiency.

Sixth, service differentiation capabilities for MSMEs and e-commerce show how NVOCC builds advantages in specific segments through commodity-based service customisation, one-stop shopping, SOC, and bundling packages supported by digital systems.

These capabilities fulfil the VRIO framework by combining market knowledge, networks, and operational flexibility, thereby creating a defensible market niche.

Overall, this confirms that NVOCC's RBV-based competitive advantage is built through the orchestration of six internal capabilities that satisfy the VRIO framework. The most decisive factor is not merely the adoption of technology, but the ability to integrate technology, data, human resources, networks, and service innovation into a reliable and valuable system for customers.

B. Answer to RQ3 and Its Relevance to ISAM

Based on Resource-Based View (RBV) analysis and NVivo findings, the strategic advantage of NVOCCs in Indonesia is shaped by the orchestration of six integrated internal capabilities, rather than by a single resource. These capabilities include: (1) digital technology capabilities as an operational backbone (AI-based document automation, integrated operational systems, WMS/WIMS); (2) data integration and process reliability capabilities that maintain service continuity when external systems are not yet seamless; (3) trust-based human resource and relational capabilities, which strengthen reputation, quick response, and customer loyalty; (4) strategic network and collaboration capabilities, including direct service access, slot space, SOC, global account contracts, and trust-based co-loading; (5) adaptive sales and pricing performance management capabilities to maintain margins and volume stability amid tariff wars; and (6) service differentiation capabilities for MSME and e-commerce segments through commodity-based service customization, one-stop shopping, bundling packages, and digital system integration. These six capabilities meet the VRIO criteria and enable the implementation of a hybrid generic strategy that combines selective efficiency, value-added service differentiation, and a focus on specific segments/commodities, thereby creating a sustainable competitive advantage.

C. Connection with ISAM.

Within the framework of the Integrated Strategic Adaptation Model (ISAM), these six internal capabilities serve as inputs that determine NVOCCs' adaptive capacity in responding to external industry pressures. These inputs are processed through strategic adaptations, including system integration and data governance, strengthening contingency SOPs, implementing a hybrid cost-differentiation focus strategy, and orchestrating collaboration and customer relations. The output of this process is adaptive and sustainable competitive advantage, reflected in faster, more reliable, value-added services, increased customer loyalty (especially among MSMEs and e-commerce), and stability in volume and margins amid a highly competitive structure. Thus, ISAM emphasises that the success of the NVOCC strategy in Indonesia is primarily determined by the organisation's ability to integrate and orchestrate its internal capabilities systematically, rather than by external environmental pressures alone.

The alignment between external and internal factors (Contingency Theory) forms an effective NVOCC Generic Strategy

Based on the synthesis of findings for RQ4 through Contingency Theory, the business strategies of NVOCCs in Indonesia are fundamentally shaped by the degree of fit between external environmental pressures and internal organisational capabilities. High tariff competition, strong price sensitivity, and persistent price wars make pure cost leadership difficult for local NVOCCs to sustain, given their limited scale and dependence on powerful suppliers. At the same time, regulatory uncertainty and non-seamless national systems require high internal flexibility, where operational adaptability and regulatory responsiveness become critical survival capabilities. Within the ISAM framework, this alignment represents a

strategic adaptation process in which external pressures act as inputs, internal capabilities as mediating mechanisms, and hybrid strategy configurations as outputs. These findings confirm that effective NVOCC strategies are not determined by rigid adherence to a single generic strategy, but by the ability to align internal strengths with contextual environmental demands.

Empirical findings indicate that cost leadership, differentiation, and focus strategies emerge in context and often overlap in the Indonesian maritime logistics industry. Under intense price pressure, many local NVOCCs adopt a defensive cost-leadership strategy, using rebates and near-break-even tariffs to preserve volume. However, this approach creates long-term margin pressure that constrains investment in technology, human resources, and service quality. In contrast, global NVOCCs can implement structural cost leadership, supported by economies of scale, international networks, and long-term contracts, thereby remaining competitive without sacrificing margins. Differentiation strategies become more effective under conditions of system uncertainty and demand for service reliability, with differentiation based not on product variety but on speed, schedule certainty, process reliability, and digital integration. While global NVOCCs leverage network-based and technology-driven differentiation, local NVOCCs rely more on relational trust, responsiveness, and operational reliability, underscoring that the effectiveness of differentiation depends on internal readiness rather than strategic intent alone.

For resource-constrained local NVOCCs, a focus strategy represents the most consistent and viable form of strategic fit. By focusing on specific trade lanes, LCL services, niche commodities, or small- and medium-sized shippers, local NVOCCs can align their limited internal capabilities with targeted market demands, often supported by co-loading practices and long-term relationships to stabilise volume. The findings also reveal unavoidable strategic trade-offs, particularly between maintaining competitive prices and investing in differentiation amid tariff wars and system disruptions. Consequently, the most effective strategy for local NVOCCs is a controlled hybrid strategy that combines process-based cost efficiency and collaboration with service-based differentiation in selected niches, rather than imitation of global strategies. Overall, this confirms that sustainable NVOCC business strategies arise from external–internal strategic fit, reinforcing the ISAM perspective that competitive advantage is generated through adaptive, contextual, and capability-aligned strategic responses.

The Comprehensive Strategy Model (ISAM) in Enhancing the Competitiveness of NVOCCs in Indonesia

This section presents the Integrated Strategic Adaptation Model (ISAM) as the final outcome of the adaptive strategy formulation process, grounded in empirical findings. This model explains the systemic relationship among external factors, strategic adaptation mechanisms, and NVOCC competitiveness in the maritime logistics industry. This framework shows that competitive advantage is not the result of a single dimension (price, service, or policy), but rather of adaptive and synergistic interactions among the four main subsystems described in the next subsection.

Table 1 Synthesis of RQ5 Answers: Final ISAM Conceptual Model as NVOCC Adaptive Strategy Integration

ISAM Model Components	Main NVivo Themes (Synthesis of Findings)	Integration of Theoretical Frameworks	Final Answers
External Environment	• Regulatory and policy pressures • Digital inequality • Economic pressures &	**PESTEL**	The external environment exerts high structural pressures, which are the primary drivers of NVOCC's strategic adaptation

	globalization		needs.
Industry Structure	• High rivalry • Global player dominance • Threat of substitution & new entrants	**Porter's Five Forces**	The industry structure constrains NVOCCs' strategic choices and narrows the scope for price-based competition, particularly for local players.
Internal Capabilities	• Services & relationships • Operations & tacit human resources • Technology & regulatory adaptation	**RBV (VRIO)**	Internal capabilities determine an NVOCC's ability to respond to external pressures and take advantage of available strategic opportunities.
Strategic Fit	• Contextual adaptation • Flexibility & selectivity of strategy	**Contingency Theory**	Competitive advantage arises when there is a fit between external pressures and internal capabilities, not from generic strategies that are universal in nature.
Adaptive Business Strategy	• Service differentiation • Market focus & trade lane • Minimum operational efficiency	**Porter's Generic Strategy**	Effective NVOCC strategies are limited, hybrid, contextual, and adaptive to structural constraints and niche opportunities.
Outcome: Sustainable Competitiveness	• Business resilience • Operational sustainability • Long-term relevance	**Integrated Strategic Adaptation Model (ISAM)**	ISAM explains that the sustainable competitiveness of NVOCCs is shaped by adaptive systems that dynamically integrate the environment, industry structure, internal capabilities, and strategic choices.

The *process* stage in ISAM is the core of the strategic adaptation mechanism and encompasses strengthening data governance, contingency SOPs, price discipline, collaborative network orchestration, and digital service development. At this stage, ISAM emphasises that NVOCCs dynamically calibrate their cost, differentiation, and focus strategies in response to external pressures and internal constraints, thereby making the adaptation process contingent and iterative.

The results of this adaptation are reflected in the output as controlled hybrid strategies and increased competitiveness. Global NVOCCs combine structural cost efficiency with network- and technology-based differentiation. In contrast, local NVOCCs achieve competitiveness through segment focus, service reliability, long-term relationships, and process-based efficiency and collaboration. Overall, ISAM explains that NVOCC competitiveness is determined by the ability to adapt strategies contextually and in line with capabilities, thereby providing an adaptive and sustainable strategic framework for Indonesia's maritime logistics industry.

CONCLUSION

All empirical findings are interpreted within the integrated theoretical framework, confirming that the competitiveness of NVOCCs in Indonesia is shaped by a dynamic, continuous process of strategic adaptation rather than by isolated or static factors. External environmental pressures (PESTEL) act as triggers for adaptation, industry structure and competition function as constraining mechanisms, and internal capabilities serve as key drivers, with strategic fit achieved through an adaptive hybrid strategy that combines cost

efficiency and service differentiation. These interacting elements operate in a cyclical, feedback-driven manner where environmental and competitive pressures prompt capability reconfiguration, leading to strategic responses that shape performance and competitive positioning, culminating in the Integrated Strategic Adaptation Model (ISAM).

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