

Fuka's Transformation as a Strengthening of the Accounting Information System for Claims Costs of State-Owned Companies Loading and Unloading

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Submitted: Jun 11, 2026

Accepted: Jun 18, 2026

Published: Oct 1, 2026

ABSTRACT

The goal of this study is motivated by the very high complexity of claim cost management, especially in state-owned port and stevedoring companies that have not been fully supported into an information system integrated accounting. New digital tools for the claim management process, like e-claim systems, resulted in a semi-digital but fragmented claim management process: part of all costs (especially co-payments and commercial gestures not borne by insurance) cannot be covered. Research this time purposed to investigate FUKA transformation role in business at claim costs accounting information system to keep transparency, accurate and effective cost. The study uses a qualitative descriptive design using interview, observation and documentation data sharing procedures and interactive data analysis model. These findings show that the system limitations in data integration and cost classification/efficiency processes persist which lead to low transparency levels and more cost risk. By performing end-to-end integration between claim and financial systems, deep classification costs, and the ability to provide structured historical claim data for analytics purposes results in a transformation of FUKA as a strategic solution. Hence, FUKA does not only act as a documentation system but also as the nerve center regarding risk management control and decision making for claim cost management.

Keywords: Accounting Information System, Claim Cost, Deductible, Commercial Gesture, FUKA, Risk Management, State-Owned Port Enterprise

PENDAHULUAN

State-owned enterprises (SOEs) in the transportation and port sectors play a strategic role in maintaining the stability of national logistics distribution. Amid global economic dynamics, companies are required to improve operational efficiency through the use of technology, which has been shown to generate economic benefits, particularly in loading and unloading activities involving high cargo volumes (Carlan et al., 2023). However, loading and unloading activities at ports involve a high level of complexity and intensity, which exposes them to various operational risks (Iswanto, 2016). This condition is further reinforced by a volatile and uncertain business environment that requires organizations to continuously adapt strategically (Ahmed et al., 2022). This situation ultimately gives rise to various cost components that must be managed effectively.

The high level of operational activity at the port has implications for the emergence of various cost components, among which cargo handling cost is one of the most dominant expenses. These costs cover not only loading and unloading activities but also financial risks in the form of claim costs (cargo claims) arising from damage or loss of goods (Wahyudi, 2021). In an effort to improve efficiency, the application of automation technology has been shown to provide significant economic benefits, particularly under conditions of high cargo volume (Carlan et al., 2023). However, the effectiveness of cost management does not depend on technology alone, but also on

the capacity of information systems to support operational processes accurately and in an integrated manner (Fardiana et al., 2025). Existing studies in this area have largely emphasized system effectiveness and data synchronization at the operational level, yet they rarely examine how transaction-level evidentiary forms the documentary basis from which cost and claim data originate can be structurally interconnected within a single accounting information system. This gap is particularly evident in claim cost management, which continues to rely on fragmented forms and documents rather than an integrated recording mechanism.

The novelty of this research lies in the proposal of the FUKA (Form for Accounting Activities/Transactions) transformation model, defined as a model grounded in the principle that every transaction-supporting form or evidentiary document must be interconnected and fully integrated to constitute a single, coherent accounting information system, rather than functioning as isolated administrative records. This definition is derived from recurring patterns of fragmentation identified in the field: claim documentation that remains semi-digital and disconnected from the financial system, cost vouchers (such as deductibles and commercial gestures) recorded without clear classification, and an approval chain processed manually across multiple stages. Theoretically, the model departs from the concept of agile management, which emphasizes an organization's ability to respond quickly and flexibly (Ahmed et al., 2022). It further integrates various accounting functions into a single information system to minimize data duplication and cost inefficiencies (Averina et al., 2016), while the perspective of adaptive leadership in a VUCA environment underlines flexibility and quality decision-making as the basis for implementing a more responsive system (Rohilla & Jindal, 2024). Thus, the FUKA transformation model is expected to connect previously fragmented forms into a unified, adaptive, and integrated approach to claims cost management.

The urgency of this research stems from the increasing demand for the implementation of Internal Control over Financial Reporting (ICOFR) in state-owned companies as an effort to strengthen transparency and accountability in financial reporting (PwC Indonesia, 2024). In the context of port operations, the effectiveness of information systems is a key prerequisite for ensuring smooth processes and accuracy in cost management (Fardiana et al., 2025). Without an accounting information system that is both adaptive and integrated with internal controls, claim cost management risks remaining a source of control weaknesses that affect the quality of financial statements and managerial decision-making (PwC Indonesia, 2024). By interconnecting transaction forms into a single, traceable system, FUKA is positioned to close this gap. Therefore, this study aims to analyze how the FUKA transformation can strengthen the claim cost accounting information system to realize transparent, accurate, and efficient financial reporting in port loading and unloading SOEs.

LITERATURE REVIEW

Previous Studies

The implementation of integrated digital systems is an important part of operational management in port SOEs, particularly in strengthening internal control and administrative efficiency. The use of System Application and Product (SAP) enables more systematic synchronization of data across divisions within the supply chain (Jumhur et al., 2024). In addition, the Host-to-Host system has been used to improve control over receivables through more accurate transaction monitoring (Sitompul, 2018). The utilization of an Accounting Information System (AIS) in service revenue likewise contributes to increasing the effectiveness of internal control and the reliability of real-time financial reporting (Sinaga, 2018). Nonetheless, these system implementations have not yet been fully able to address the complexity of cost management in port operations.

This limitation is closely tied to the broader challenge of system integration itself. Integrating accounting systems within a single information environment often poses difficulties, particularly in avoiding data duplication and process inefficiencies (Averina et al., 2016). Furthermore, limited accounting literacy and information technology skills among managers remain an obstacle to the optimal utilization of such systems (Kartikasari et al., 2024). These integration shortcomings continue to create opportunities for error, particularly through duplicate data entry, which can

degrade data integrity and the accuracy of cost information (Kohl & Wolke, 2004). Taken together, these findings indicate that cost management, and claim cost management in particular, still requires more comprehensive strengthening at the level of system architecture rather than isolated technological upgrades.

These limitations point to the need to strengthen the system through an Accounting Information System that is integrated with adequate internal control. The use of an AIS supported by internal control has been shown to contribute positively to improving SOE performance (Albarra & Suwandi, 2025). In this context, the framework of Internal Control over Financial Reporting (ICOFR) becomes relevant as a mechanism for providing reasonable assurance regarding the reliability of financial statements (PwC Indonesia, 2024). Leadership also plays an important role in driving the effectiveness of system implementation, particularly in moderating employee motivation to adopt new management accounting systems (Pham & Vu, 2021). Collectively, this body of literature shows that strengthening accounting information systems for cost management depends not only on technological capability, but equally on system integration design, internal control quality, and organizational leadership.

Conceptual Framework of FUKA

The literature reviewed above identifies three interrelated requirements for strengthening a claim cost accounting information system: (1) integration of accounting functions to avoid duplication and inefficiency (Averina et al., 2016; Kartikasari et al., 2024; Kohl & Wolke, 2004); (2) internal control mechanisms that ensure the reliability and accountability of financial reporting (Albarra & Suwandi, 2025; PwC Indonesia, 2024); and (3) leadership support that drives the adoption and responsiveness of new accounting systems (Pham & Vu, 2021). These requirements correspond directly to the three theoretical pillars underlying the FUKA model introduced earlier: accounting function integration (Averina et al., 2016), the responsiveness emphasized in agile management (Ahmed et al., 2022), and adaptive leadership in a VUCA environment (Rohilla & Jindal, 2024). Building on these pillars, FUKA is conceptualized as a model in which previously fragmented transaction forms, claim documentation, cost vouchers, and approval chains are interconnected into a single, classified, and traceable accounting information system, as illustrated in Figure 1. This conceptual framework provides the basis for the data collection and analysis procedures described in the following section.

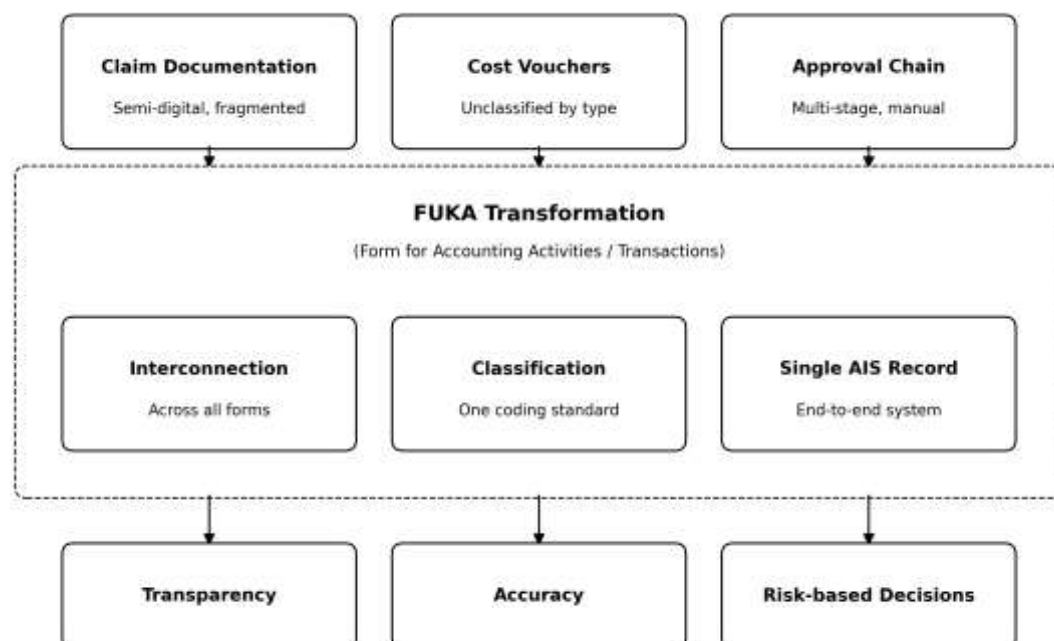


Figure 1. Conceptual Framework of FUKA Transformation

METHOD

This study uses a descriptive qualitative approach with a case study design to examine the management of claim costs in a state-owned loading and unloading company, focusing on the integration between the claims process and the accounting information system. Data were obtained from four informants selected purposively to represent the full claim cost cycle, from field-level handling to strategic financial oversight. TEGUH, a Legal Staff member with more than five years of experience in claim investigation, joint surveys, and negotiation with insurers and related third parties, was responsible for field-level investigation and negotiation. DEA, a Superintendent of Legal with more than five years of experience in claim document verification and validation and coordination with insurers, was responsible for verifying and validating claim documents and coordinating the claim submission process with insurers. ALIF, a Superintendent of Budget Accounting with more than five years of experience managing claim payment documents and processing data from the legal department and insurers, was responsible for recording claim costs, entering data into the system, and preparing claim cost reports. JEANY, the SVP of Finance with more than five years of experience in finance, claim cost policy, and inter-departmental coordination, was responsible for controlling claim costs, approving financial policy, and evaluating the impact of claim costs on the financial statements. Each informant was interviewed once in a semi-structured, in-depth session on April 7, 9, 11, and 13, 2026 respectively, supplemented by relevant company documents and financial statements as secondary data.

Data collection techniques are carried out through interviews, observations, and documentation (Scott, 2022), with the validity of the data tested using source triangulation comparing statements across the four informants, whose differing roles across the claim cycle allowed cross-verification of the same events from multiple vantage points and technique triangulation, comparing interview results with company documents such as claim recapitulations and insurance policy records.

Data analysis was carried out descriptively through the stages of data reduction, data presentation, and conclusion drawing (Miles et al., 2014). At the data reduction stage, interview transcripts were coded openly to identify recurring statements related to claim documentation, cost classification, and the approval process. These open codes were then grouped into three analytical sub-themes claim documentation, cost vouchers, and approval chain which form the empirical basis for the FUKA conceptual framework presented in the Literature Review. Conclusions were drawn iteratively by cross-checking emerging patterns against the triangulated data sources.

RESULT

Transformation of the Insurance Claims System in Strengthening the Cost Accounting Information System (FUKA)

The results of the study show that the claim cost management system in state-owned loading and unloading companies is still in the semi-digital stage, where there is already the use of an electronic system (e-claim), but it has not been fully integrated with the financial system. This condition causes inefficiencies in recording, controlling, and reporting claim costs, especially related to costs that are not covered by insurance such as deductibles and commercial gestures. These findings are an important basis for the transformation of FUKA (Form for Accounting Activities/Transactions) as a system that is able to integrate the claims process with real-time and structured cost accounting records.

Following the coding procedure described in the Method section, these findings are organized into three thematic clusters claim documentation, cost vouchers, and approval chain and are interpreted below through the lens of agile management, accounting system integration, and adaptive leadership established in the Literature Review.

Insurance Protection Characteristics and Risk Structure

The DEA stated on Tuesday, April 7, 2026 at 14.35 WIB that:

"Yes, more or less all are covered by insurance. Claims are about 90% covered, not 100% because it depends on the insurance check."

The statement emphasizes that although in general all of the company's assets have been insured, the level of protection provided by insurance is not full coverage. This shows that there are protection limits determined by the verification and investigation process from the insurance company. In other words, there is a risk validation-based claim selection mechanism that causes some losses to remain the company's burden. This condition is reinforced by TEGUH's statement on Monday, April 13, 2026 at 10.15 WIB:

"Around 72 percent, depending on the case."

The above data reveals the large difference between the loss value and the claim value settled by the insurance company. Conceptually, it reflects a risk sharing mechanism between the company and the insurance company. This complicates cost recording in the accounting information system, since not all losses that occur can be categorized as reimbursable claims. Furthermore, TEGUH also stated on Monday, April 13, 2026 at 10.15 WIB:

"It used to be around 33%–52%, now it is above 100%."

This statement indicates a significant increase in the claim ratio in recent periods. A claim ratio exceeding 100% indicates that the total claims paid by the insurance company are greater than the premiums received (OECD, 2024). In OECD (2025), this condition is referred to as loss ratio deterioration, which has the potential to cause future premium adjustments and tightening of underwriting policies. The increase in operational activity is directly proportional to the increased risk of asset damage, ultimately impacting insurance premiums. From the perspective of FUKA transformation, this condition demands a more adaptive and integrated claims cost accounting information system capable of distinguishing between covered and uncovered claims to support strategic decision-making. Without an integrated system, companies will face difficulties in conducting cost control and comprehensive risk performance evaluation (Dzaky et al., 2024). *This finding belongs to the claim documentation cluster: the speed with which risk validation outcomes fluctuate illustrates precisely the responsiveness that agile management (Ahmed et al., 2022) demands of the accounting system, rather than the static, manually reconciled records currently in use.*

Dynamics of Policy Value and Insurance Premiums

The DEA stated on Tuesday, April 7, 2026 at 14.35 WIB that:

"No, every year it changes depending on the insured asset. If the assets increase, the value increases, it can also decrease, so it fluctuates."

This statement shows that the value of insurance policies in companies is not fixed, but dynamic, following changes in the value of assets owned. This confirms that insurance policies are not only a protection instrument, but also part of a risk management strategy that is adaptive to changes in the company's asset structure. The DEA also confirmed that high claim ratios lead to premium increases in the following year. In insurance industry practice, this is known as experience rating, where the frequency and amount of claims are used as the basis for adjusting premiums in the following period (Dzaky et al., 2024). TEGUH's statement on Monday, April 13, 2026 at 10.15 WIB further clarified:

"It is not the TSI that is going up, but the rate that is going up."

The statement emphasizes that the increase in insurance costs is driven by rising premium rates due to increased risk and claim ratios, not merely by growth in the total sum insured (TSI). Companies with a high claim history tend to experience Premium Loading, which is an addition of the premium burden to compensate for greater risk (Hikmah & Hikmah, 2020). This dynamic demands that the accounting information system function not only as a transaction recorder, but also as a historical data provider to support negotiations and policy assessments. Without integrated claims data, companies will struggle to evaluate risk trends and control future premiums. An integrated FUKA system must therefore be able to identify claims patterns, segment loss types, and provide analytical data supporting strategic insurance policy decisions. This is aligned with Azra et al. (2024), who show that an ineffective accounting information system can hinder cost identification and control, potentially causing cost management inefficiencies. *This reinforces the claim documentation cluster: historical claims data must be interconnected within a single information system (Averina et al., 2016) rather than remain dispersed across manual records, in order to support premium negotiation.*

The Role of Deductibles as a Component of Internal Costs

The DEA stated on Tuesday, April 07, 2026 at 14.35 WIB that:

"Self-borne and direct costs are deducted from insurance claims."

This statement emphasizes that the deductible is part of the claim cost directly borne by the company, as it is not included in the component reimbursed by the insurer. Substantively, deductibles function as a risk retention mechanism to avoid moral hazards and encourage prudent operations. JEANY's statement on Friday, April 11, 2026 at 12.31 WIB confirmed that deductibles are mandatory and non-negotiable, meaning the only strategy available is operational risk control to reduce the frequency of claim occurrences (Bani et al., 2025).

Furthermore, ALIF stated on Wednesday, April 9, 2026 at 09.45 WIB that deductibles are entered under asset or repair costs and do not stand alone as a separate account. This indicates a limitation in the cost accounting information system in terms of risk-based cost classification. Conceptually, deductibles can be classified as part of the cost of risk, i.e. costs incurred as a result of the company's exposure to operational risks. The separation of risk costs is explicitly seen as very important because it can improve the quality of cost information used in efficiency analysis and strategic decision-making (Situngkir et al., 2024). The inseparability of deductible recording causes three critical implications: lack of cost transparency, inability to evaluate insurance policy effectiveness, and potential distortions in internal financial statements. Therefore, FUKA's transformation must enable more detailed cost classifications that clearly distinguish between deductibles, reimbursed claims, and non-insurance costs. *This finding directly substantiates the cost vouchers cluster illustrated in Figure 1, where a unified classification standard is needed in place of the current practice of folding deductibles into generic asset or repair accounts.*

Non-Insurance Claim Fee (Commercial Gesture and Small Claim)

The DEA stated on Tuesday, April 7, 2026 at 14.35 WIB that:

"Covered by TPS through commercial gesture (no insurance claim)."

This statement shows that the company consciously bears a portion of losses not submitted to insurance, especially for small-value claims. This is a business strategy to maintain customer relationships and service reputation. JEANY's statement on Friday, April 11, 2026 at 12.31 WIB confirmed that these are discretionary costs outside insurance schemes, used to maintain relationships with customers. Such costs are often not adequately documented in the accounting system, becoming hidden costs that are difficult to analyze (Eliza & Panciu, 2009). Furthermore, JEANY also stated there is no special financial recap for these costs; they are simply recorded as general claim fees. This reflects weaknesses in cost accounting information system design regarding classification and reporting of activity- and risk-based costs. Unclear cost classifications lead to information distortion and hinder cost analysis accuracy (Irianto et al., 2026). FUKA's transformation must therefore establish a system capable of separating and classifying costs more comprehensively, facilitating strategic analysis related to both customer relationship management and risk cost efficiency. *Together with the deductible findings above, this confirms that cost vouchers one of the three empirical fragmentation patterns underlying FUKA require a single coding standard so that commercially motivated costs are no longer absorbed into undifferentiated claim fee accounts.*

Reimbursement Mechanism and Complexity of the Claim Process

The DEA stated on Tuesday, April 7, 2026 at 14.35 WIB that:

"Yes, the system is reimbursed, the company pays first and then the insurance is reimbursed."

This statement shows that the claim mechanism used is a reimbursement system, where the company must first disburse funds before receiving reimbursement from the insurance company. This directly impacts cash flow due to the time lag between expenditure and receipt of claim funds. ALIF's statement on Wednesday, April 9, 2026 at 09.45 WIB confirmed that reimbursement occurs only after verification is completed, creating working capital pressure on the company. JEANY further elaborated on Friday, April 11, 2026 at 12.31 WIB that the process flows from legal review → BOD approval → finance → payment, indicating a multi-stage bureaucratic process that is still

predominantly administrative rather than integrated. Long and unintegrated business processes tend to cause process inefficiency, delays, and increased operational costs (Sujudi, 2024). FUKA's transformation must therefore include automation and end-to-end integration of the entire claims process flow. *This finding constitutes the approval chain cluster: its multi-stage, predominantly manual character reflects the absence of the responsive, adaptive leadership emphasized by Rohilla and Jindal (2024) in steering claims toward more decisive, integrated handling.*

Digital System Limitations and FUKA Integration Needs

The DEA stated on Tuesday, April 07, 2026 at 14.35 WIB that:

"There has been an e-claim since 2024, but it has not been integrated into finance, it still uses manual official memorandums."

This statement shows that although the company has adopted a digital system in the form of e-claims, the implementation remains partial and not integrated with the financial system. JEANY and TEGUH's statements on Friday and Monday respectively confirmed that no structured system design such as flowcharts or ERDs yet exists, and system integration is still in process. System integration is a key factor in improving information quality, operational efficiency, and organizational transparency (Natali, 2025). Without proper integration, claims data, financial data, and legal data will be scattered across different systems, increasing the risk of recording errors and information delays. FUKA's transformation must therefore be directed at developing an end-to-end integrated accounting information system, from claims reporting through legal processes to financial records, enabling real-time and reliable data flow as a basis for decision-making. *This finding most directly evidences the absence of the system integration emphasized by Averina et al. (2016), confirming why FUKA's interconnection component, rather than incremental digitization alone, is required to close the gap between claims and financial recording.*

Implications of FUKA Transformation on Strengthening Accounting Information Systems

Based on the overall findings, the current claim cost accounting information system still exhibits the three patterns of fragmentation identified through the coding procedure in the Method section: fragmented claim documentation, unclassified cost vouchers, and a multi-stage, manual approval chain confirming the empirical basis of the FUKA conceptual framework presented in Figure 1. Addressing these patterns requires FUKA to operate through its three interrelated components. First, interconnection integrates the e-claim system with the financial accounting system, enabling automatic recording and linkage of the entire claim process within a single platform rather than relying on manual official memoranda. Second, classification establishes a single coding standard that separates deductibles, small claims, and commercial gestures from general claim fee accounts, making cost information more transparent and accurate.

Third, a single AIS record provides structured claims historical data to support risk analysis and insurance premium negotiation; the availability of accurate and integrated data is a key factor in improving the quality of risk-based decision-making (Lukman & Fiulaizi, 2026). Through these three components, end-to-end process digitization is expected to speed up claims flows, reduce reliance on manual processes, and increase operational efficiency. Consistent with the outcomes depicted in Figure 1, the transformation of FUKA is therefore expected to produce transparency, accuracy, and risk-based decision-making positioning FUKA not merely as an improvement to the recording system, but as a strategic instrument for controlling risk management, improving cost efficiency, and strengthening the quality of decision-making in managing claim costs in state-owned port loading and unloading companies.

CONCLUSION

The transformation of the insurance claims system in strengthening the Cost Accounting Information System (FUKA) in state-owned companies is a strategic need that cannot be postponed, considering that the results of the study show that the current system is still semi-digital, fragmented, and has not been able to comprehensively represent all cost components. Although almost all assets have been insured, the level of protection that is not full, the existence of a risk sharing mechanism, and the increase in the claim ratio to above 100% cause significant cost

pressure, especially through an increase in premiums in the future; in addition, the existence of deductibles that are mandatory but not recorded separately, as well as non-insurance costs such as commercial gestures that do not have a special classification, indicate weaknesses in the transparency and accuracy of cost information, while the complex reimbursement mechanism and involvement of many administrative stages worsen operational efficiency and impact the company's cash flow, and the limitations of the integration of the e-claim system with the financial system further emphasize the gap in data management and claims cost control. These findings directly answer the research question of how FUKA can strengthen the claim cost accounting information system: by interconnecting the previously fragmented claim documentation, cost vouchers, and approval chain into a single, traceable accounting information system as conceptualized in Figure 1, FUKA establishes a unified classification standard that separates deductibles, small claims, and commercial gestures from generic claim fee accounts, and provides structured historical claims data for risk-based analysis. Therefore, FUKA's transformation must be directed at building an end-to-end integrated system, capable of separating cost classifications in detail, providing analytics-based claims historical data, and supporting risk-based strategic decision-making, so that FUKA not only functions as a recording tool but, consistent with the three outcomes depicted in Figure 1, serves as an instrument for transparency, accuracy, and risk-based decision-making, supporting continuous cost efficiency improvement and risk management control in state-owned port loading and unloading companies.

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