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Implementing Advanced Inventory Management to Drive Operational Efficiency at PT Neuronworks Indonesia, Bandung

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Abstract

Inefficient tracking of corporate assets and delayed supply procurement frequently disrupt internal workflows and drain financial resources within fast-growing technology companies. To resolve these operational vulnerabilities, this applied research and community service initiative identifies asset management bottlenecks and formulates strategic solutions to implement advanced inventory management to drive operational efficiency at PT Neuronworks Indonesia, Bandung. Utilizing a qualitative approach, a collaborative team of lecturers and students gathered field data through deep engagement with business owners, tech leads, and operational personnel. The team analyzed the company's real-world supply chain gaps by benchmarking current inventory workflows against established corporate asset management frameworks. The assessment reveals that manual tracking and a lack of centralized inventory data cause significant delays in tech-equipment distribution and project deployment. To bridge this gap, this initiative delivers a streamlined asset-tracking framework and an optimized procurement roadmap tailored to the company's specific IT operational needs. [Implications] Ultimately, these solutions empower PT Neuronworks Indonesia to eliminate administrative waste, maximize resource utilization, and secure a highly agile operational environment that supports sustainable corporate growth.

Keywords: *Advanced Inventory Management, Operational Efficiency, Tech Sector Operations.*

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Introduction

The rapid development of information technology forces companies, including technology firms, to maintain highly effective and efficient operational systems to support their business activities. Information technology companies depend heavily on operational devices such as laptops, network equipment, software, and various other work facilities. Therefore, inventory management becomes a critical factor in sustaining smooth corporate operations. In the IT services sector, inventory management focuses not only on tracking stock supplies but also on monitoring corporate operational assets. Ultimately, effective inventory management ensures the continuous availability of work devices, maximizes asset utilization, and guarantees seamless daily business operations.

Based on field observations and interviews, PT Neuronworks Indonesia generally executes its inventory management processes smoothly and complies with established corporate SOPs. Despite this solid foundation, the company still faces critical operational risks within its asset management system that threaten daily productivity.

Specifically, sudden equipment failure represents a major operational risk, as hardware can break down unexpectedly even though technicians perform routine maintenance. When these sudden malfunctions hit active workstations, they instantly disrupt corporate workflows and delay ongoing project timelines.

Additionally, management faces a continuous challenge in maintaining all physical inventory at an optimal usability standard for every employee across the organization. To mitigate these asset-degradation risks and preserve operational continuity, the company actively conducts frequent evaluations and routine maintenance checks to keep all operational assets functional and reliable.

In today's volatile corporate landscape, businesses must actively eliminate waste and optimize resource allocation to maintain a competitive edge. Effective inventory management stands out as a core driver of this financial and operational stabilization. Rigorous inventory control directly

improves overall business efficiency, stabilizes cash flows, and minimizes carrying costs across various industry sectors (Lijuan et al., 2023). When a company accurately tracks and controls its stock levels, it prevents the twin perils of overstocking and costly stockouts, thereby shielding daily production cycles from sudden disruptions.

This operational safeguarding proves especially critical for smaller and medium enterprises where resource constraints amplify every logistical bottleneck. Modern inventory management practices directly elevate the operational performance of SMEs by bridging the gap between fluctuating supply chain demands and internal capacity (Panigrahi et al., 2024). By abandoning outdated manual tracking and adopting systematic asset-monitoring frameworks, companies actively reduce lead times, boost labor productivity, and lower overhead expenses.

Furthermore, integrating advanced technologies into these management workflows dramatically reshapes modern logistics. Leveraging optimization techniques and machine learning models within inventory management systems heavily enhances supply chain agility and environmental sustainability (Pasupuleti et al., 2024). These intelligent data systems empower companies to dynamically forecast demand, minimize resource waste, and respond instantly to market shifts, turning a traditional cost center into a highly adaptive operational asset.

Maximizing floor efficiency requires a comprehensive approach that links storage productivity directly to outbound logistics. Decision analysis regarding warehouse productivity performance indicators enables companies to identify hidden operational bottlenecks and systematically enhance logistics operational efficiency (Abdul Rahman et al., 2023). By measuring critical benchmarks such as order accuracy, picking speeds, and space utilization, managers turn empirical data into actionable workflows. For any forward-thinking organization, executing these integrated inventory strategies does not merely protect corporate assets; it creates a highly synchronized, agile operational machine capable of sustaining long-term commercial growth.

Based on the field issue analysis and relevant previous literature, this initiative identifies operational challenges and formulates specific solutions

regarding the implementation of advanced inventory management to drive operational efficiency at PT Neuronworks Indonesia, Bandung.

Method

To thoroughly investigate operational workflows, this study deploys a qualitative research design focused on real-world field data. The collaborative research team, comprising university lecturers and students, conducted immersive field observations, in-depth interviews, and extensive documentation review to identify core operational bottlenecks and formulate effective solutions. The team selected PT Neuronworks Indonesia in Bandung as the primary research object. To gather rich, primary data, the team selected key informants consisting of business owners and frontline operational workers who directly manage or interact with the company's daily processes.

This research isolates and analyzes Inventory Management as the primary research variable, specifically examining how the company tracks, maintains, and allocates its physical and digital assets. For the data analysis technique, the team cross-references raw data from interview transcripts and observational field notes against established asset management frameworks. This systematic analysis allows the team to pinpoint exact supply chain gaps and design a tailored, actionable roadmap to optimize the company's inventory workflow.

Results and Discussion

Current Inventory Management Practices at PT Neuronworks Indonesia, Bandung

PT Neuronworks Indonesia operates as a dynamic information technology company that develops cutting-edge digital solutions. To sustain its daily business operations, the company utilizes a wide array of technological devices and workplace infrastructure, including laptops, computers, servers, network equipment, monitors, desks, chairs, and other vital operational supplies.

Based on primary field interviews, the logistics department at PT Neuronworks Indonesia actively manages several distinct categories of inventory to keep the workforce productive. The logistics team handles all physical assets through a highly structured operational workflow, which directly reflects the practical application of the company's Inventory Management Standard Operating Procedures (SOPs).

This comprehensive SOP strictly governs the entire lifecycle of corporate assets—from initial procurement and real-time ledger recording to distribution, daily usage, and routine maintenance. By enforcing these rigorous guidelines, the company brings greater discipline, transparency, and control to its asset management framework, ensuring that every piece of equipment reliably supports the firm's digital operations.

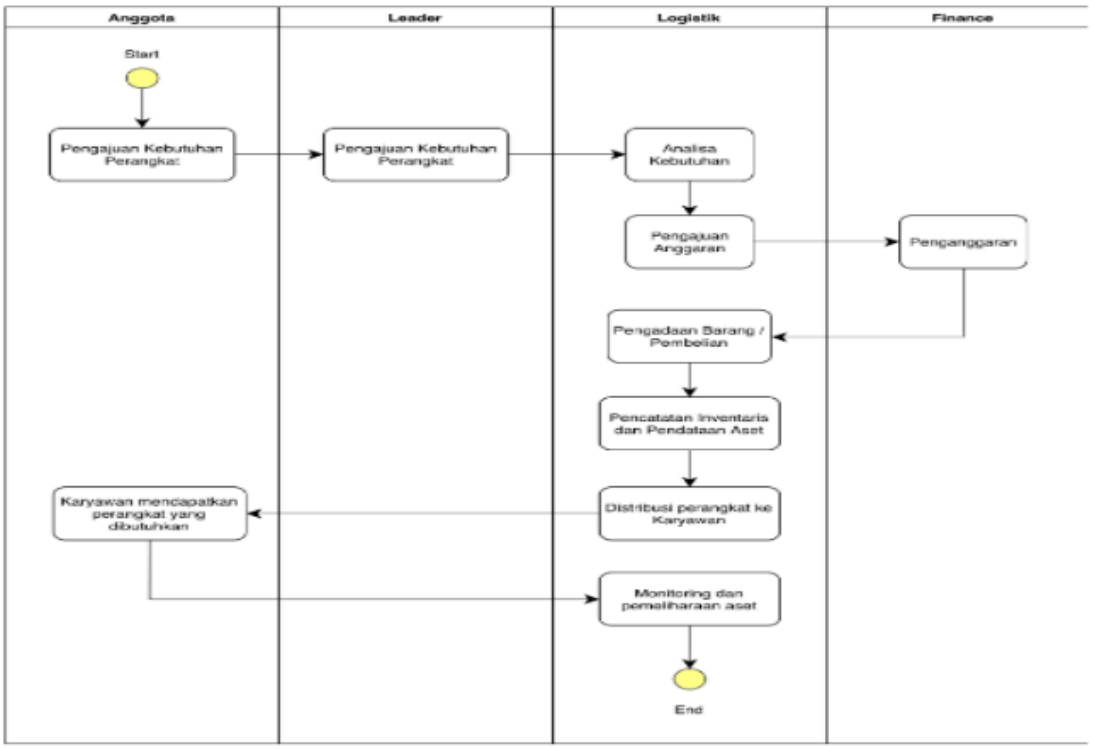


Figure 1. Inventory Management Standard Operating Procedures (SOPs) PT Neuronworks Indonesia, Bandung.

Based on the flowchart, the inventory management process begins when department heads submit work-device requests to meet specific corporate operational needs. Following procurement, the logistics team logs every

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incoming asset into the company records. This systematic registration streamlines asset supervision and ensures that the company accounts for all inventory properly.

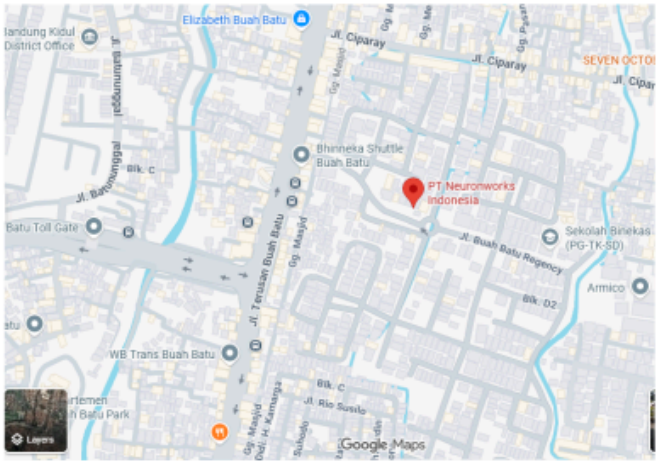




Figure 2. PT Neuronworks Indonesia, Bandung.

Operational Risk Profile at PT Neuronworks Indonesia, Bandung

While analyzing the inventory ecosystem at PT Neuronworks Indonesia, the research team identified four primary operational risks that directly threaten daily workplace productivity and asset longevity.

First, careless employee handling frequently causes sudden laptop breakdowns. This negligence directly disrupts team workflows and increases the company's capital expenditure due to premature asset damage. Second, critical infrastructure components—such as network cables, printers, and air conditioning units—fail unexpectedly despite receiving routine preventive maintenance. These sudden hardware malfunctions instantly bottleneck daily operational activities and halt corporate communication.

Third, employees continuously run hardware assets without rest, pushing devices to overheat. This continuous over-exertion systematically degrades hardware components and shortens the operational lifespan of expensive equipment. Fourth, the lack of strict software controls on employee-issued laptops allows users to download unverified applications. This uncontrolled usage creates severe system security vulnerabilities and severely degrades laptop processing performance over time.

Despite these operational threats, PT Neuronworks Indonesia actively mitigates risks through a multi-layered defense strategy. The company enforces strict Inventory SOPs, conducts regular preventive maintenance, performs periodic stock counts (stock opname), and maintains tight, cross-departmental coordination to safeguard its operational continuity.



Figure 3. The Activity at PT Neuronworks Indonesia, Bandung.

Strategic Recommendations to Enhance Operational Efficiency

To maintain device quality and minimize the risk of sudden operational disruptions, the IT and logistics departments must strictly execute regular, periodic maintenance schedules for all operational assets. Management must also prioritize the continuous supervision of corporate equipment usage. Active oversight ensures that employees use company assets optimally, which directly extends the operational lifespan of expensive hardware. The company should deploy an advanced information system and robust operational monitoring tools. This digital solution will strengthen asset oversight and prevent employees from using corporate devices in ways that do not align with official business needs. Specifically, a centralized tracking system can monitor device temperatures to prevent overheating and audit installed applications to eliminate system security vulnerabilities.

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Figure 4. The Activity at PT Neuronworks Indonesia, Bandung.

The strategic recommendations for PT Neuronworks Indonesia, Bandung.

Transitioning from Periodic to Predictive Maintenance Lifecycle

To completely suppress the sudden hardware failures affecting network cables, printers, and air conditioners, the logistics and IT departments must upgrade their standard upkeep schedules. While periodic maintenance fixes items on a calendar basis, it fails to account for heavy, unexpected workloads. Therefore, the IT team should introduce condition-based monitoring protocols. By tracking real-time performance indicators—such as printer page counts, network data packet drops, and cooling efficiency—technicians can service assets right before a failure occurs. This proactive approach minimizes unexpected downtime, stabilizes the internal digital infrastructure, and ensures that hardware constantly supports project deadlines.

Enforcing Accountability and Asset Stewardship Culture

Mitigating employee negligence and preventing device overheating requires a shift in internal corporate culture. The human resources department, in coordination with logistics, must introduce an explicit Asset Stewardship Policy. This policy clearly defines the user's responsibility for their assigned laptops and workstations. Management can enforce this by: Implementing mandatory, brief end-of-day shutdown protocols to prevent overnight overheating; Conducting random, bi-monthly physical device spot-checks;

Linking asset care directly to employee performance reviews through a transparent "Care and Maintenance" metric. By holding individuals accountable for their designated equipment, the company actively reduces capital expenditure on premature hardware replacements.

Deploying Endpoint Management for System Security and Performance

To eliminate the severe security vulnerabilities and performance degradation caused by uncontrolled software installations, PT Neuronworks Indonesia must deploy an Automated Endpoint Management (AEM) solution. This software framework empowers the IT department to centralize control over all employee-issued laptops. The system automatically blocks unauthorized applications, updates security patches in the background, and alerts administrators if a laptop's internal temperature crosses safe thresholds. Implementing AEM directly preserves processing speeds, shields the corporate network from malware, and extends the operational lifespan of the company's computer fleet.

Synchronizing Cross-Departmental Logistical Workflows

Finally, the company must bridge the communication gap between the logistics department and frontline project teams. While stock opname (periodic stock counts) provides historical data, it does not offer the agility needed for rapid IT deployment. The company should integrate its inventory databases directly with active project management software. This integration gives the logistics team advance notice regarding upcoming project hires or hardware expansions. Consequently, procurement can secure necessary assets without resorting to rushed, expensive, or incorrect purchasing decisions. When PT Neuronworks Indonesia weaves these advanced inventory practices into its daily operations, it does more than just protect its physical hardware. The company establishes an agile, cost-effective framework where technology, personnel, and logistics operate in perfect alignment. Eliminating administrative friction and technical bottlenecks allows software developers and engineers to focus entirely on client deliverables. Ultimately, this operational optimization strengthens the company's market reputation, maximizes long-term profitability, and secures a highly scalable foundation for sustainable business growth.

In the fast-paced digital ecosystem, information technology firms must optimize their internal workflows to sustain high performance and deliver cutting-edge software solutions. Basic management principles dictate that organizations must systematically coordinate their resources, infrastructure, and human capital to achieve corporate objectives (Foster & Sidharta, 2019). For a technology developer like PT Neuronworks Indonesia, this managerial alignment heavily relies on operations management. As Heizer and Render (2017) emphasize, inventory and asset management represent core operational decisions that directly influence a firm's productivity, protect its capital investments, and determine its long-term competitive edge.

To maximize output, PT Neuronworks Indonesia enforces a structured Standard Operating Procedure (SOP) that actively governs the procurement, registration, distribution, and maintenance of its tech infrastructure. Sound inventory management principles, concepts, and techniques solve prolonged operational bottlenecks and streamline asset allocation (Gupta & Singh, 2019). By systematically logging physical equipment—such as laptops, servers, and network devices—into centralized ledgers, the logistics department eliminates administrative tracking waste. This strict internal control directly drives overall business efficiency, optimizes working capital, and ensures that hardware assets remain readily available to support software developers and project engineers (Lijuan et al., 2023).

However, maintaining a smooth workflow requires continuous mitigation of operational risks. While PT Neuronworks Indonesia relies heavily on periodic stock opname and routine maintenance, sudden hardware malfunctions, device overheating, and uncontrolled software configurations still threaten corporate timelines. Implementing robust inventory management practices directly protects the operational performance of growing enterprises by bridging the gap between unpredictable internal asset wear and daily production demands (Panigrahi et al., 2024). Furthermore, by tracking critical warehouse and storage productivity performance indicators, IT firms can identify hidden infrastructure bottlenecks and systematically enhance logistics operational

efficiency (Abdul Rahman et al., 2023). Maximizing the usability and lifespan of each laptop and server allows the logistics team to protect the internal supply chain from costly project delays.

While regional studies highlight how total quality management frameworks directly elevate final product quality in physical manufacturing environments (Manik et al., 2023), technology services demand a digital equivalent centered around asset reliability. To future-proof its workflow, PT Neuronworks Indonesia can utilize advanced optimization techniques for logistics and inventory management to enhance its long-term agility and operational sustainability (Pasupuleti et al., 2024). Transitioning toward data-driven tracking tools empowers the firm to monitor real-time hardware health, prevent catastrophic asset degradation, and eliminate security vulnerabilities before they bottleneck active projects. Ultimately, by refining its inventory management framework, PT Neuronworks Indonesia transforms routine logistics into a powerful, active driver of continuous operational efficiency and sustainable corporate growth.

Conclusion

This applied research demonstrates that implementing an advanced inventory management framework directly drives operational efficiency at PT Neuronworks Indonesia, Bandung. The investigation confirms that while the logistics department successfully enforces a structured Standard Operating Procedure (SOP) to govern asset procurement and registration, critical operational risks still threaten daily workflows. Real-world field data exposes a sharp contrast between formal guidelines and practical vulnerabilities: careless handling and continuous usage cause sudden laptop breakdowns and device overheating, while a lack of strict endpoint software controls creates severe system security risks. Because these technical bottlenecks directly disrupt project timelines, the study proves that systematic asset tracking and proactive hardware maintenance remain vital to sustaining the company's digital development pipeline. To mitigate these operational vulnerabilities, PT Neuronworks Indonesia must execute three immediate strategic interventions. First, the IT and logistics departments must transition from rigid calendar-based maintenance to condition-based

monitoring, prioritizing real-time hardware health and system tracking. Second, management should introduce an explicit Asset Stewardship Policy paired with routine compliance audits to hold employees accountable for their assigned laptops and workstations. Third, the company must deploy an Automated Endpoint Management (AEM) solution to restrict unauthorized software installations, automate security patches, and eliminate performance degradation across the entire device fleet.

From a theoretical perspective, this study validates established operations management frameworks by proving how systematic inventory control directly preserves asset capability within a live technology service provider. Practically, these findings provide IT managers with a replicable roadmap to balance hardware lifecycles with daily operational demands. For PT Neuronworks Indonesia, transforming routine logistics into a data-driven monitoring system optimizes machine availability, eliminates administrative tracking waste, and secures a highly agile operational environment that supports sustainable corporate growth. This study acknowledges certain limitations, as the qualitative approach relies primarily on field observations and interviews over a specific operational window, which limits the generalizability of the findings to larger global tech conglomerates. Additionally, the research variables focus strictly on general inventory management without isolating the precise financial costs of asset downtime. Future research should expand this scope by deploying quantitative simulation models to measure the exact financial trade-offs of hardware degradation over multiple fiscal years. Researchers should also investigate the integration of machine learning algorithms and Internet of Things (IoT) sensors within IT infrastructure to transition the technology services sector from preventive to fully predictive asset management frameworks.

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