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Developing a New Asset Management Module in MyERP Plus System: Business Process Analysis and Modeling Study

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A R T I C L E I N F O

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A B S T R A C T

Digital transformation in asset management is an important need to improve the efficiency and transparency of company operations. MyERP Plus, as one of the most widely used cloud-based ERP systems in Indonesia, still has limitations in the fixed asset module - especially in terms of recording the full asset life cycle. This research aims to design an asset management module, which covers the entire asset process from acquisition, maintenance, to disposition. The methodology used is the Research and Development (R&D) approach with the ADDIE model. The analysis stage is carried out through observation and interviews, while the business process design is described using BPMN (Business Process Model and Notation) notation. The result of this research is an asset management module design in the form of BPMN that describes the flow of recording, maintenance, deletion, and revaluation of assets. This design is expected to increase effectiveness, recording accuracy, and support data-based decision making in managing company assets.

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INTRODUCTION

Asset management is the process of overseeing a company's assets with the aim of monitoring, managing and maximizing their use. In addition, asset management provides comprehensive information about the asset lifecycle, including the number of assets owned by the enterprise, their value and condition, and their use and maintenance (Nabella et al., 2022). The stages of this process include planning, procurement, value assessment, operation, maintenance, renewal and disposal of the asset (Franky et al., 2024). At the planning stage, companies identify asset needs in accordance with short-term and long-term strategies, and ensure that resource allocation is done appropriately. Therefore, the procurement process considers aspects of quality, cost, and availability of assets in order to optimally support productivity (Pamirah, 2021). Valuation is carried out by periodically evaluating the value of assets to determine the extent of the asset's contribution to the company. The operation and maintenance, meanwhile, focuses on efforts to keep fixed assets in optimal condition and extend their useful life. At the renewal stage, adjustments or modernization of assets are carried out in accordance with business needs and technological developments (Cahyaningrum et al., 2024). As the final stage, efficient disposal of assets that are no longer suitable for the needs is carried out, either through sales, recycling processes, or other alternative methods (Togatorop, 2022).

In the current digital era, asset management increasingly relies on data-driven decision-making and analytics to monitor, assess, and optimize overall asset performance. Encompassing technical, financial, and operational dimensions, asset management is a key cornerstone in supporting the successful management of enterprise resources (Aswat & Hijriah, 2023). Manual asset management often presents various obstacles, such as difficulty tracking assets, errors in recording, and ineffective decision-making processes. In today's digital era, asset management increasingly relies on data-driven decision-making and analytics to monitor, assess, and optimize overall asset performance. Encompassing technical, financial, and operational dimensions, asset management is a key cornerstone in supporting the successful management of enterprise resources (Kurniawan et al., 2017). Technology-based asset management provides the ability for companies to organize, monitor, and track assets more systematically and in real time, so that it can replace manual methods that are prone to errors and delays in delivering information (Indrayani, 2022).

Through a centralized and integrated data system, companies can have a more comprehensive view of all operational activities, identify areas that need improvement, and make the right decisions to support the achievement of strategic goals. The Enterprise Resource Planning (ERP) system functions as an information center that manages all important business-related data in an integrated manner (Ikhsan et al., 2021). Enterprise Resource Planning (ERP) is a unified solution designed to combine all aspects of business operations in one integrated system. By bringing together various functions such as finance, production, and human resource management, ERP helps companies improve efficiency, reduce operational costs, and support more informed decision making

through accurate and real-time data. ERP systems also ensure the smooth flow of information between departments, thus encouraging harmonious collaboration in achieving company goals (Franky et al., 2024).

ERP implementation in trading companies such as Apotek Kharisma Farma Denpasar, has shown that implementing an ERP system can help improve management and inventory with features that are already designed and easy to use (Kurniawan et al., 2017). In the manufacturing sector, ERP adoption has facilitated the transformation from traditional methods to more sophisticated processes, PT Holynest Natural Asia uses an ERP system for distribution companies, implementing ERP to increase efficiency, establish better relationships with partners, and record assets accurately, reduce errors and improve overall performance (Franky et al., 2024). In construction service companies, ERP systems help manage project resources, including costs, time, assets, enabling automated operational activities and real-time reporting (Indrayani, 2022).

MyERP Plus is a cloud-based ERP (Enterprise Resource Planning) software developed by PT Universal Big Data and has been successfully used by various companies in Indonesia from various sectors, including services, trade, distribution, and manufacturing. The system is designed to suit the business needs of each company and provides standard modules that can be customized. Available modules include master data, finance and accounting, inventory and warehouse, sales and distribution, production, and fixed assets for recording asset depreciation. MyERP Plus uses the latest technology, so it can be implemented either through Cloud Computing or internal company servers. The system is designed to help companies run operations more efficiently, provide greater insight into business activities, and support business process automation.

However, the fixed asset module in MyERP Plus still has limitations in terms of overall asset management. This module only focuses on recording assets and their calculations, without covering the complete treatment of assets that are no longer in use. This can cause several obstacles in the accounting and financial reporting aspects, such as the lack of transaction details, the absence of recording for assets that are no longer used, and less comprehensive reports when there is a disposal of assets that are no longer in accordance with the needs of the company.

By considering various problems and limitations in the MyERP Plus system, the researcher believes that it is necessary to design an asset management module. This research resulted in a module design that aims to complement the ERP system with more comprehensive asset management features.

THEORETICAL REVIEW

Asset Management

Asset management is a strategic approach to managing the full lifecycle of a company's assets-from planning, procurement, operation, maintenance, to disposal-so that assets provide maximum benefits over their lifetime. According to ISO 55000 (2014), asset management includes the coordination of processes to efficiently manage performance, risk, and cost to support the company's strategic

objectives. This approach integrates financial, operational, and strategic aspects, and emphasizes the importance of life-cycle-based management for more informed, efficient, and data-driven decision making (John D. Campbell, Andrew K.S. Jardine, 2016).

The asset management cycle starts from planning and procurement, followed by implementation and use of assets in operations. Routine maintenance is carried out to maintain performance and extend asset life (Lee et al., 2014). The final stage of disposal of assets that are no longer used, through sale, recycling, or disposal, is carried out by considering sustainability aspects and potential added value for the company (Zhanbayev et al., 2023).

Enterprise resource planning system

Enterprise Resource Planning (ERP) is an integrated software system that manages key business processes such as finance, HR, production, and supply chain on a single platform. ERP enables real-time data access, operational efficiency, and accurate information-based decision-making. The system also helps standardize processes across departments and supports the consistency of corporate strategies, both small and large scale (Alwan & Fahmi, 2023).

One ERP implementation is MyERP Plus, a cloud-based system from PT Universal Big Data that is used by various businesses in Indonesia. MyERP Plus provides standard modules, including fixed assets. However, the fixed asset module is still limited to recording and depreciation, without supporting comprehensive management of the asset lifecycle. This limitation has an impact on the lack of information related to unused assets and the disposition process, so module development is needed to optimize asset management.

Asset Management Module in ERP System

The asset management module in the ERP system helps companies manage the full lifecycle of fixed assets, from acquisition, maintenance, depreciation, to disposal (Taryono et al., 2024). With an integrated centralized system, asset information can be accessed in real-time, reducing manual recording errors, and improving efficiency and data accuracy (Ikhsan et al., 2021). This module also allows direct monitoring of asset conditions, supports preventive maintenance, and strengthens data-based decision making (Alwan & Fahmi, 2023)

The implementation of this module requires detailed asset data collection and training for system users (Indrayani, 2022). Integration with finance and accounting functions in ERP strengthens the consistency of financial reports (Pamirah, 2021). Companies that implement the asset management module reported an increase in efficiency of up to 30% and a reduction in losses due to poorly managed assets (Togatorop, 2022). In addition, this system also improves the accuracy of depreciation calculations and transparency of financial statements (Pambudi et al., 2017).

Business Process Model and Notation (BPMN) in the Asset Management

Process Business Process Model and Notation (BPMN) is a graphical modeling standard that facilitates the visualization of workflows in an organization. In asset management, BPMN is used to describe the process from asset acquisition to asset disposal in a structured manner. The As-Is diagram shows the current state of the process which is often inefficient, while To-Be depicts the ideal process flow after the implementation of the ERP system, helping companies design process improvements in a more targeted manner (Rogowski & Swoboda, 2023).

BPMN facilitates communication across departments with a uniform and easy-to-understand notation. In addition to providing a clear picture, BPMN also allows simulation of business processes before implementation, so that companies can minimize the risk of errors and increase the effectiveness of changes made (Mulyana & Sidiq, 2023).

METHODOLOGY

This research uses a qualitative descriptive method with a focus on business process analysis and modeling to support the development of a new asset management module in the MyERP Plus system. This research emphasizes on understanding the current asset management process, identifying inefficiencies or gaps, and proposing workflow improvements using standardized business process modeling tools.

The approach adopted is based on Business Process Model and Notation (BPMN), which is used to describe, visualize, and analyze existing ("as-is") and proposed ("to-be") processes in a clear and structured way. This modeling helps stakeholders understand system requirements and align the design of new modules with actual business needs.

Data was collected through: Literature review, to analyze the basic concepts of asset management and business process modeling. In-depth interviews, conducted with relevant employees at PT Universal Big Data, Malang, to explore real-world challenges and user needs related to asset management in the MyERP Plus system. Direct observation, rewrite not-clear the current operational workflow and validate the findings from the interviews. This methodology ensures that the process model created reflects the actual conditions of the organization and serves as a reliable foundation.

RESULTS

Problem Analysis

Based on the interview with PT Universal Big Data regarding the operation of the MyERP Plus system, it was found that although the system includes various important modules such as finance and accounting, inventory and warehouse, purchasing, sales and distribution, production, and fixed assets, there are still limitations in managing more complex assets. Information from interviews showed that the main challenge lies in the process of recording, maintaining, and managing the entire asset lifecycle. Therefore, the development

of an Asset Management module is needed to increase the effectiveness of the system in managing the company's assets optimally.

The table of root causes and potential solutions below is organized as a form of recommendation. In Table 1, the potential solution that is the focus of this research is the design of an asset management module as a complement to the existing modules in the MyERP Plus system.

Table. 1 Root Causes and Potential Solution

No	Root Causes	Potential Solution
1	Lack of metrics to measure asset process performance	Develop specific KPIs for fixed assets
2	Lack of specific reports on assets	Designing an Asset Management Module for the asset management process in accordance with the concept and asset life cycle
3	Limited modules	
4	No systemized records for asset lifecycle	
5	Lack of asset data integration with other departments	
6	Absence of an asset lifecycle system	
7	Procedure manual	
8	Recording, calculation, and decision-making errors	
9	Lack of integrated information system	
10	Lack of accurate information or data about assets	

Source: Data processed by the author (2025)

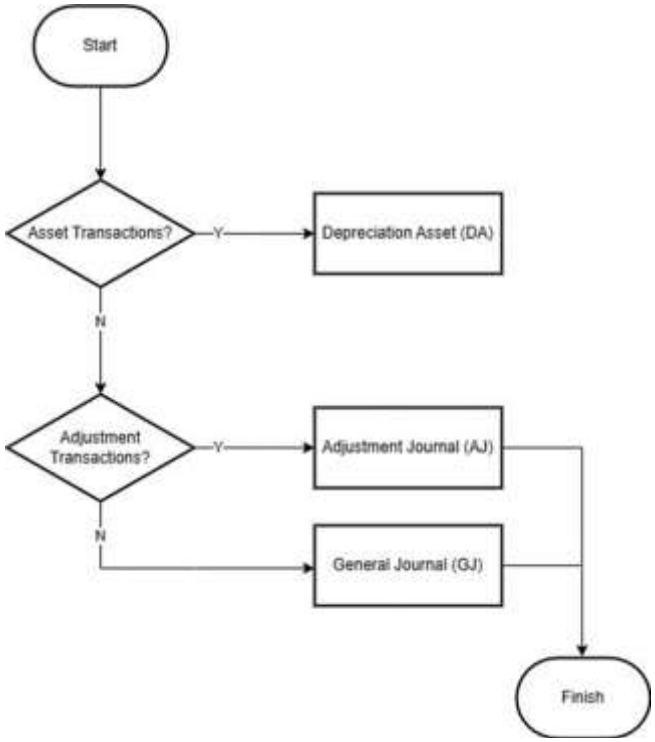
Value Chain Analysis

In the development of the asset management module, value chain analysis plays a role in identifying the added value of each stage of the asset cycle-from procurement to disposal. The ultimate goal is to optimize asset management, reduce costs, and ensure maximum asset utilization. Key activities in asset management include: Inbound Logistics (asset procurement and receipt), Operations (asset usage), Outbound Logistics (asset maintenance), Marketing and Sales (asset utilization and optimization), and Service (asset resale and write-off). Meanwhile, supporting activities include: system development and digitization, human resource management and training, asset management structure and regulation, and administrative and financial management.

Current Fixed Asset Business Process Diagram (As-Is)

The following is a picture of the current business processes contained in the MyERP Plus system related to fixed assets. Figure 4 below, shows that the

processes contained in the MyERP Plus system currently only include recording and depreciation of fixed assets.



Source: E-book MyERP Plus

Figure. 1 Current Fixed Asset Business Process

Figure 1 further illustrates the flow of asset transaction recording. The process starts by identifying whether the transaction is asset-related. If it is, then a Depreciation Asset (DA) entry will be created. If not, the system checks whether it falls under the adjustment category, in which case it is posted to the Adjustment Journal (AJ). Otherwise, it is recorded in the General Journal (GJ). However, based on interviews and evaluation of system usage, it has been identified that the current fixed asset management is limited to initial recognition and depreciation. It does not support the full asset lifecycle. These limitations may lead to incomplete asset data, manual tracking outside the system, and reduced efficiency and accountability in asset management. Therefore, it is necessary to develop a more comprehensive Asset Management module to support the entire asset lifecycle, ensure better integration with related business processes, and enhance the accuracy of financial reporting.

Business Process Diagram Recommendation

Business process improvement is proposed by the researcher for a better flow of asset recording and includes the flow of recording from the accounting side.

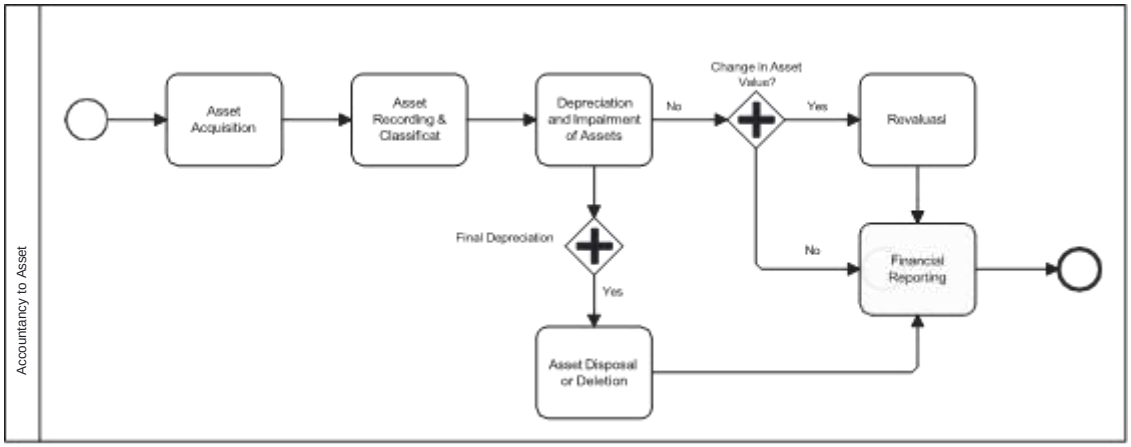


Figure. 2 Business Process Recommendations

This diagram illustrates the flow of asset accounting, starting from the acquisition and recording of assets by type. During their useful life, assets are subject to depreciation or impairment. If there are indications of a change in value, a revaluation is performed to adjust the value in the financial statements. Otherwise, the recording continues as usual. Before an asset is disposed of or written off, final depreciation is carried out to determine its book value. If the asset no longer provides economic benefit, it is disposed of or written off, and this entire process is recorded in the financial statements. This process ensures that the recording of assets reflects their actual condition, whether they are used, revalued or written off.

Design of Business Process Model and Notation (BPMN)

Business Process Model and Notation (BPMN) is a graphical modeling notation used to describe business processes in detail, with information flow in the form of messages between the parties involved. BPMN provides symbols and diagrams that help visualize process steps systematically, and supports collaboration between stakeholders.

In the context of asset management, asset recording in accounting plays an important role to ensure that every company asset is well documented, from acquisition, classification, depreciation, to disposal. From the accounting side, this record presents an accurate asset value in the financial statements, while from the asset management side, this information is useful for optimizing utilization, maintenance planning, and strategic decision making. The integration between accounting records and asset management allows companies to improve operational efficiency, meet regulations, and minimize risks related to poorly managed assets.

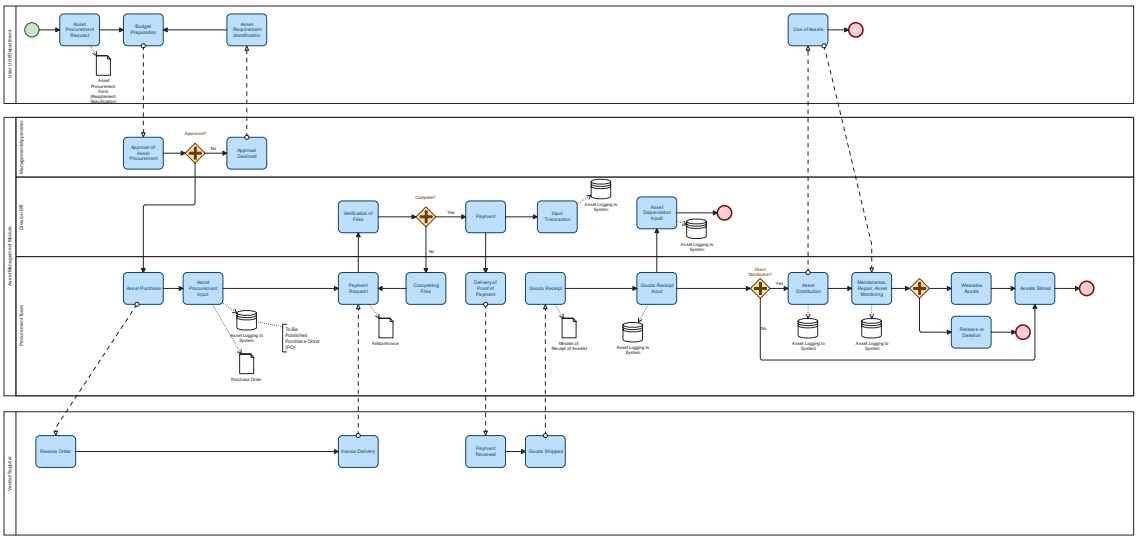


Figure. 3 Design of BPMN

DISCUSSION

The asset procurement process begins with a request from a user unit or department, followed by budgeting and identification of asset needs. Once the request is approved, the asset management department manages the purchasing process, from inputting data into the system to creating purchase orders (POs). The vendor then receives the PO and sends the goods along with the invoice. Once the goods are received, document verification, payment requests, and transaction completion are performed. Received assets will be recorded in the system, distributed to end users, or stored if not yet used. Furthermore, assets that have been used will go through a maintenance, repair, or monitoring process. If still fit for use, the asset will be used or stored. Otherwise, the asset will be released or removed from the system. This process reflects the asset lifecycle from procurement to disposal.

Based on the explanation of BPMN in the asset management cycle above, the next BPMN design will be made for asset management modules such as New Asset Recording or Asset Acquisition, Asset Maintenance and Repair, Asset Removal or Disposal, Asset Revaluation.

1. Recording New Assets or Asset Acquisition
   The process begins with Add New Asset, where asset information is entered through the form. Next, Upload Supporting Documents, which include purchase invoices, purchase orders, and warranty documents if available. Once the documents have been uploaded, the next step is to Assign User or Department, which establishes who will be responsible for the asset. After that, the process continues to the Save stage, where the asset information is stored in the system, as well as recording the asset into the asset management database.
2. Asset Maintenance and Repair
   The process starts with the Asset/Active Register, where assets that require maintenance or repair are identified and recorded in the system. Then, a Maintenance History is recorded to find out when the asset was last repaired

or maintained. Based on this data, a Maintenance Schedule is created to ensure maintenance is performed at regular intervals. If the asset requires repair, a Repair Request is made, which may be accompanied by supporting documents such as damage reports. This request then goes to the Approval stage, where a decision is made whether or not the repair will be carried out. If it is not approved, the process ends here. If approved, the process continues to the Execution stage, where the repair of the asset is carried out. Once the repairs are completed, the Repair Costs are recorded for financial and budgetary recording purposes. The process ends with a Maintenance Report, which summarizes the results of the maintenance or repairs that have been carried out.

3. Deletion or Disposal of Assets
   The process begins with the recording of the asset in the Asset/Activities Register, then an Asset Viability Classification is performed to evaluate whether the asset is still usable or has passed its useful life. If the asset is still viable, it remains registered in the system, while if it is not viable, the asset goes to the List of Assets that Can Be Deleted. Next, a Minutes of Deletion and Management Approval is conducted as a verification stage before a final decision is made. If not approved, the asset will remain in the system, but if approved, the deletion process will be carried out. The next stage is the Deletion Process, where the asset is officially removed from the active list and recorded in the system. After that, Upload of Deletion Documents and Evidence, such as minutes or other supporting documents. The process ends with Data Update in the system as well as the creation of an Asset Deletion Report for administrative and audit purposes.
4. Asset Revaluation
   The process starts with the Asset Register, where all assets registered in the system are recorded. Next, Selection of Assets to be Revalued is made based on the company's needs or applicable accounting policies. Once the assets are selected, the next stage is Asset Revaluation, which involves recalculating the value of the assets based on their current condition. The results of this revaluation are then recorded in the system through Revaluation Data Input, where information such as revaluation date, revaluation value, and depreciation method are entered. Once all the data has been updated, the process concludes with the Save stage, which ensures that the change in asset value has been documented and saved in the system.

CONCLUSIONS AND RECOMMENDATIONS

This research highlights the importance of integrated asset management in ERP systems, especially in the fixed asset module contained in MyERP Plus. Evaluation of the current system shows that the existing module is still limited to recording and depreciation, without covering the entire asset life cycle, such as maintenance, revaluation, and write-off. Through the Business Process Model and Notation (BPMN) approach, this research successfully mapped the existing business process ("As-Is") and designed the ideal business process ("To-Be"). The process includes the stages of procurement, recording, use, maintenance,

revaluation, and asset write-off. This comprehensive BPMN design can be a reference for system development that is more structured and in accordance with user needs. In addition, the implementation of an integrated asset management module can improve operational efficiency, asset data accuracy, financial report transparency, and support data-based strategic decision making.

User training and mentoring are essential to ensure the asset management module is used optimally. Regular training helps users understand new functions, while mentoring facilitates adaptation and resolution of technical issues. After implementation, periodic monitoring and evaluation is required to assess the effectiveness of the module, as well as to make continuous improvements based on user feedback.

FURTHER STUDY

Further exploration of integration with advanced technologies such as IoT or AI for real-time tracking and predictive maintenance is also recommended to enhance asset management capabilities.

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