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ENHANCING INDIVIDUAL PRODUCTIVITY VIA THE DEPLOYMENT OF THE OFFICE INVENTORY MANAGEMENT SYSTEM

Nik Amalin Binti Nik Othman[1]
Mohamad Rahimi Mohamad Rosman[2]
Noor Azreen Alimin[3*]
Lee Yee San[4]

[1] Faculty of Information Science, Universiti Teknologi MARA Kelantan Branch, 18500 Machang, Kelantan, Malaysia (2023141417@student.uitm.edu.my)
[2] Faculty of Information Science, Universiti Teknologi MARA Kelantan Branch, 18500 Machang, Kelantan, Malaysia (rahimimr@uitm .edu.my)
[3] Faculty of Information Science, Universiti Teknologi MARA Kelantan Branch, 18500 Machang, Kelantan, Malaysia (azreen07@uitm.edu.my)
[4] Pejabat Tanah Dan Jajahan Kuala Krai, Kelantan, Malaysia (lee@kelantan.gov.my)
*Corresponding author: azreen07@uitm.edu.my

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Abstract:.
Inventory management is one of the important activities in human resource management (HRM) practices. Inventory management enables accurate decision-making, quick organizational planning, and preparing organization for potential low stock management. However, many organizationsowadays still relies on manual based inventory system due to several reasons, such as lack of expertise, high implementation cost, and lack of urgency. Therefore, this project is devoted to the development of a web-based Office Inventory Management System (OIMS) intended to enhance the efficiency and effectiveness of office inventory management of an organization. The OIMS is developed to allow a centralized system of managing inventory items, updating inventory levels, tracking booking requests, accepting or refusing booking requests and creating well-structured reports. The system development was based on the Waterfall methodology that involves implementation, testing, requirements analysis, system design, and implementation. The system architecture is based on the three layers: presentation layer (HTML, CSS, JavaScript), application layer (PHP), and database layer (MySQL). The outcomes of the functional testing show that the system is functional, and it achieves the set goals.

Keywords:*Office Inventory Management, Web-Based System, Inventory Tracking, Booking System, Stock Management, System Development, Digital Transformation.*

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Introduction

System Background and Context

In today's digital era, organizations increasingly rely on information systems to manage daily operations efficiently. One important operational area is office inventory management, which involves tracking and controlling office supplies and equipment such as stationery, printers, laptops, projectors, and furniture.

However, many organizations still depend on manual methods such as paper records and Excel spreadsheets to manage inventory. These traditional approaches are time-consuming and prone to human errors. Inaccurate stock levels, duplicate records, missing documentation, and delays in approval processes are common issues.

To address these problems, this project proposes the development of a web-based Office Inventory Management System (OIMS). The system centralizes inventory data, allows online booking of items, and provides a structured approval mechanism. It supports digital transformation and enhances transparency, efficiency, and data accuracy in office inventory management.

Problem Statement

Despite the fact that inventory management is a crucial part of the organization running that goes unnoticed, the current approach adopted by most offices has a number of critical flaws. To manage office supplies and equipment, most organizations are still using the manual method of managing records on paper, physical logbooks, and Excel spreadsheets. These are the traditional approaches that are no longer appropriate in organizations that need quick, precise, and real-time data control.

Among the key issues that have been established is the inaccuracy of stock recording because of manual entry of the stock records. When the inventory transactions, such as the use of items and addition of stock, are entered manually, the possibility of human error is high. Employees can fail to update the stock system, enter the wrong numbers, or make multiple records. Due to this, the data on the actual stock in storage may not be the same as the recorded data. This may cause shortages of stocks, surplus stock, and ineffective resource distribution.

Moreover, there is also no form of organized booking and approval system, which adds to the process of inefficiency in inventory management. In most instances, employees make many informal requests like verbal requests, messages, or email requests, without proper records of order placement of the office supplies. This is because of the absence of systematic record-keeping, and as such, the administrators can hardly go through what items have been requested, approved, or mailed. As a result, the transparency of the approval process becomes lower, and misunderstandings might arise between staff and management.

Moreover, the inventory usage patterns and the creation of reports by the administrators through the manual system are hard to monitor. As the information is saved in different files or hard copy documents, it is time-consuming and effort-consuming to compile and analyze the information. This is because the procedure of generating the inventory reports is usually carried out manually, and thus it tends to expose the business to errors in calculations and delays in decision-making. Lack of systematic reporting also makes the management have difficulties assessing stock movements, items that are used regularly, and how to get future inventory in an effective manner.

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The other significant concern is the possibility of losing data and the security dilemma. Physical documents can be lost or destroyed, and spreadsheet files can be lost or damaged by mistake. This means that it has no centralized data storage, which increases the risk of data loss and unauthorized access. This may have an impact on the organization's persistence in having accurate historical records on the movement of inventory and the bookings.
On the whole, the mentioned issues distinctly show that the current manual system of managing inventory is both inefficient and subject to errors and a lack of transparency. Lack of a centralized and automated system restricts the organisation from having stock control and making sound decisions based on data. As such, a web-based Office Inventory Management System (OIMS) needs to be developed so as to offer an organized, safe, and effective system to manage office inventory and booking procedures**.**

System Objective

Despite the fact that inventory management is a crucial part of the organization running that goes unnoticed, the current approach adopted by most offices has a number of critical flaws. To manage office supplies and equipment, most organizations are still using the manual method of managing records on paper, physical log books, and Excel spreadsheets. These are the traditional approaches that are no longer appropriate in organizations that need quick, precise, and real-time data control. Thusm the objectives of the study are:

1. **To design a centralized Web- Based Office Inventory Management System**

Among the key issues that have been established is the inaccuracy of stock recording because of manual entry of the stock records. When the inventory transactions, such as the use of items and addition of stock, are entered manually, the possibility of human error is high. Employees can fail to update the stock system, enter the wrong numbers, or make multiple records. Due to this, the data on the actual stock in storage may not be the same as the recorded data. This may cause shortages of stocks, surplus stock, and ineffective resource distribution.

2. **To have an online reservation system among the employees**

In most instances, employees make many informal requests, such as verbal requests, messages, or email requests, without proper records of order placement of the office supplies. This is because of the absence of systematic record-keeping, and as such, the administrators can hardly go through what items have been requested, approved, or mailed. As a result, the transparency of the approval process becomes lower, and misunderstandings might arise between staff and management.

3. **To introduce an organized approval process**

Moreover, the inventory usage patterns and the creation of reports by the administrators through the manual system are hard to monitor. As the information is saved in different files or hard copy documents, it is time-consuming and effort-consuming to compile and analyze the information. This is because the procedure of generating the inventory reports is usually carried out manually, and thus it tends to expose the business to errors in calculations and delays in decision-making. Lack of systematic reporting also makes the management have difficulties

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assessing stock movements, items that are used regularly, and how to retrieve future inventory effectively.

4. **To ensure Real-Time and accurate Stock updates.**

The other significant concern is the possibility of losing data and the security dilemma. Physical documents can be lost or destroyed, and spreadsheet files can be lost or damaged by mistake. This means that it has no centralized data storage, which increases the risk of data loss and unauthorized access. This may have an impact on the organization's persistence in having accurate historical records on the movement of inventory and the bookings.

On the whole, the mentioned issues distinctly show that the current manual system of managing inventory is both inefficient and subject to errors and a lack of transparency. Lack of a centralized and automated system restricts the organisation to stock control and making sound decisions based on data. As such, a web-based Office Inventory Management System (OIMS) needs to be developed so as to offer an organized, safe, and effective system to manage office inventory and booking procedures.

Scope

The boundaries and limitations of the project are determined by the scope of the Office Inventory Management System to keep the system development within the set time frame and to make sure that the project is within reach.

System Scope

The system scope includes the creation of a web-based application, which deals with the office inventory and booking procedures in an organization. The system has item management features, category management features, stock management features, booking requests features, approval features, and report generation features. All inventory information will be contained in a central database in order to assure accuracy, consistency, and security. This system enables administrators to add, update, and delete inventory items, control quantities of stock, classify the inventory, and track the movement of stock. It also allows personnel to log in, see what they can get, place booking requests, and monitor their requests. The system, however, lacks external supplier management, financial accounting integration and advanced predictive analytics. The management is based on the basis of internal office inventory and booking.

User Scope

The system has two major user groups, which are Staff and Administrator. The staff users have the role of viewing the inventory items, making booking requests, and tracking the status of their requests. They lack the capability to make changes in stock information and accept reservations. Administrators enjoy more access rights. Their work is to maintain the inventory information, analyze the booking requests, confirm or deny the requests, update the stock, and create reports. This role-based access control will provide the security of data and avoid the unauthorized activity. The project has defined the scope of the system and users so that every user can be provided with the right access according to their duties.

Literature Review

Digitization of the inventory management systems as opposed to manual management has been a widely debated issue in past researches (Holmström et al., 2019; Madamidola et al., 2024;

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Niaz, 2022; Skoumpopoulou et al., 2025). Nasution and Susafa'ati (2022) report that web-based inventory systems are effective to ensure data accuracy, minimise processing time, and foster reporting efficiency as opposed to the traditional paper-based processes. This is because centralized data storage enables the organization to have current data and reduce duplication.

Additionally, Singh and Adhikari (2023), Archana (2025), and Dhiman and Madan (2025) also note the significance of such digital technologies as Artificial Intelligence (AI), Internet of Things (IoT), and real-time monitoring applications in the improvement of inventory visibility and decision-making. Through these technologies, organizations can dynamically monitor the level of stock and more precisely predict the demand in the future.

Nevertheless, even though there are complex systems at hand, most organizations continue to struggle with using digital inventory systems (Grover et al., 2024; Mandal et al., 2026; Raj, Kumar, et al., 2024; Raj, Singh, et al., 2024; Yusnilzahri et al., 2024). The high implementation costs, integration challenges with the existing systems, cybersecurity issues, and the absence of technical expertise are major obstacles. Furthermore, research shows that an interface design that is easy to use is very significant in the adoption of a system (Alzubi et al., 2025; Farooq et al., 2025; S Baharuddin & Mohamad Rosman, 2020). Complex or hard-to-use systems can demotivate the use of those systems by the staff. Thus, the simplicity, usability, and the design of the workflow are the crucial elements of creating a useful inventory management system.

Despite numerous commercial inventory systems, these systems are either too complicated or too expensive to be used by small and medium-sized organizations (Maheshwari et al., 2025; Semenov, 2025). This leaves a loophole to a simplified, cost efficient and focused solution that is directly made to handle internal office inventory. The proposed OIMS will fill this gap by having a structured, user-friendly, and centralized system responsive to the organizational requirements.

Benchmarking

Table 1: Software Benchmarking

FEATURE	Quantic Solutions (EZOFIS)	MIDTEAM DMS	FileForceMalaysia (PaperVision
Type	Cloud / On-Prem Document Management System.	Cloud based DMS	Enterprise Content Managemen
Target users	SMEs, Corporates, Government Agencies	SMEs, Corporates, Government Agencies	Large enterprises, public sector
Features	Document capture workflow automation	Scanning, indexing, storing documents, sharing	Workflow automation, archiving, and records management.
Automatic Document Generation	Yes	Yes	Limited

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Customizability	High, custom workflows, APIs	Moderate, custom metadata, workflow	High enterprise-level customization
Offline Access	Limited, mainly cloud based	Not specified	Not specified
User Interface	Web and mobile apps, modern design.	Web-based, easy- to-use interface	Web interface, enterprise style.
Reporting and Export	Dashboard reporting, export options.	Versioning, search, export.	Audit reports, export logs.
Ease of setup	Medium, require s vendor setup.	Easy, fast installation.	Medium, enterpris e configuration.
Security	High, audit trail, access control	Good, ACL, encryption	High, multi layer governance
Performance	Optimized for multiple users	scalable for small and medium-sized enterprises, and	effective for large document volumes.
Usability	User-friendly after training.	Simple interface	Requires some training.

Table 1 shows the benchmarking analysis to compare OIMS with commercial inventory software, manual inventory systems and commercial inventory software. Manual systems are subject to errors in real-time, and do not offer structured workflows and commercial systems are not only usually expensive but are also too complex to be used by small organizations. Conversely, OIMS provides real-time stock status, orderly booking and approval mechanisms, automated reporting, and role accessibility in a less complicated and low-cost fashion. Thus, it can be concluded that OIMS is a convenient and effective tool to manage inventory in an office.

Discussion and Conclusion

The development of OIMS helps organizations to improve productivity among employees via computerized and automatic processing. The lack of manual, tedious, and repetitive tasks helps the organization to improve employee productivity via motivation improvement and enables them to focus on the crucial organizational processes. At the same time, the development of new information systems enables the organization to encourage collaboration and faster decision making compared to the previous traditional method.

Contrary to the traditional method, the new information systems developed help the organization to properly plan its resource allocation and acquisition. The proposed systems help to notify low stock in inventory and are capable of predicting potential future resource acquisition - a feature that certainly will help to improve the operation, productivity, and good reputation of the organization.

For future enhancement, utilizing artificial intelligence (AI) approaches is mandatory. The use of AI technologies will certainly improve the automation workflow and speed up the data entry, data management, data modification, and data appraisal. Minimizing regular, tedious, and repetitive inventory management activities will certainly increase employees' productivity and motivation, and subsequently enhance organizational performance.

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