

# A Review on Inventory Management System for Improving Efficiency of Project Development Cycle

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## Abstract

*Inventory is a major element of many organizations. Consequently, its proper control is crucial for the profitability of the organization and development of circumventing communities. Inventory Management System (IMS) enables the visualization, specification, and documentation of a software-intensive system. The software was tested for enhancing the workflow and providing a timely and efficient handling. The manual system requires everyday counting of items in the inventory, human errors are very prevalent during counting and recording and all the manual inventory records will be damaged and irretrievable. In light of the discoveries this paper highlights the possible solutions to the above quandaries; a computerized IMS to issue and update the stocks.*

**Keywords:** Inventory Management System, Project Development Life Cycle

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## INTRODUCTION

Inventory Management System (IMS) provides a flexible and easily understood way of analyzing complicated problems.

The method has been used in several areas including performance evaluation, project management, inventory management, resource allocation, budgeting decisions, etc.

Low inventory may lead to stock outs, which result in production halts, inability to meet deadlines, customer dissatisfaction and loss of goodwill. On the other hand, high inventory levels block huge capital, which is a scarce resource for any organization.

For organizations that maintain thousands of inventory items, it is unrealistic to provide equal consideration to each item. Inventory is one of the largest and most important assets of a manufacturing business.

The main purpose of the inventory management practices in all production companies is to have the required items ready to be processed right on the required time with incurring minimum cost. The need of inventory IMS emerges from the way that

manual taking care of may bring about human blunders, which may influence the inventory utilization. With a specific end goal to robotize the procedure, a thorough study on the system should be conducted.

The essential objective of Inventory Administration System is to give a documentation that is effortlessly comprehended by all clients inside the association.

IMS plays an important role for a successful enterprise. With a correct framework, it is easier to provide coordination between units, eliminate waste, and make faster and better decisions.

It is intended to those organizations that need to receive and ship goods, while keeping up an ideal use of space and knowing particularly where all products are put away at any given time.

IMS enhances real-time data capture, and the automation of warehouse. The common warehouse tasks can all be optimized to save time to make for greater profits. Inventory management is the process of productively

regulating the steady stream of units into and out of a current supply of goods. This procedure generally includes controlling the move of units keeping in mind the end goal to keep the stock from turning out to be too high, or diminishing to levels that could put the operation of the organization.

Clients request customized quality items at less cost and quick conveyance. Subsequently there is a requirement for firms in the association to expand their flexibility and speed.

Unfortunately, the numerous enterprises have been currently facing a lot of challenges in fulfilling client request on time. This is mainly because of the operational disturbances.

IMS is a produced plan to enhance the productivity and execution of day-by-day movement of issue and return of stock. At present, a few organizations did not have any modernized framework. All the movement are recorded and reported physically. A considerable measure of time is devoured amid the procedure of issue and return.

In the present day modern environment, wherein the opposition is high and quality

gauges are stringent, the productive administration of material is an unpredictable and tough assignment. One of the fundamental dimensions of stock is that it goes about as a decoupling agent between different subsystems that are available in organization.

Managing the inventory in coordination with other manufacturing functions assumes significance in the context of integrated manufacturing.

As we all know system needs people to feed it with accurate information to be efficient. Consequently, exact stock records and lead times are profoundly critical for stocking required type of component or raw material to produce the finished goods without overstocking wrong quantities or material.

In general, the inventory not just to take care of the demand of typical generation, additionally to control stock (Figure 1), to guarantee the ordinary operation of the association and maintain a strategic distance from to take up association a considerable measure of liquidity, which has turned into the critical variables which limit the advancement of the organization, and high importance should be attached to them.

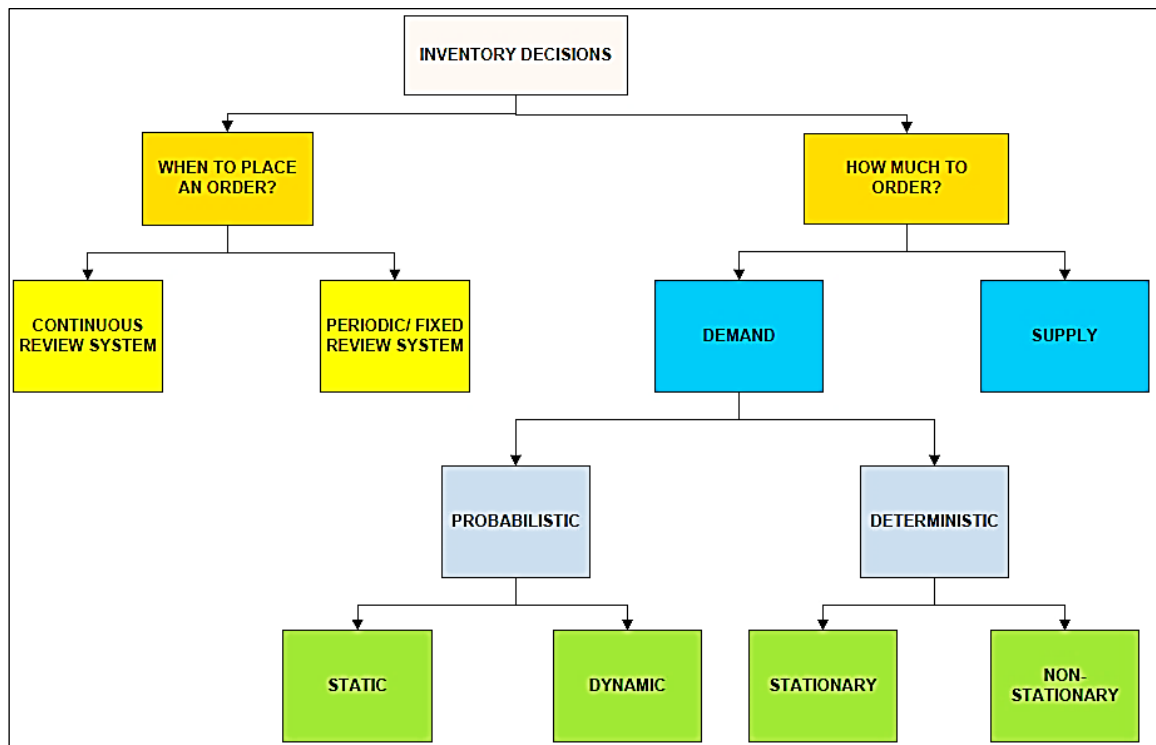


Fig. 1: Inventory Decisions and Factors.

With a specific goal to understand the typical operation of the organization, not only to achieve the management of inventory, but also need to make inventory management convenient and practical.

IMS programming applications improve the performance, productivity, efficiency, facility, data safeguard; eliminate human error, reduction data entry and speedy accurate reporting of material transaction of organization.

Currently organizations are facing many challenging problems such as ineffective purchasing planning, high production cost, and ineffective inventory management, which decrease organization's competitiveness.

One part of the competitive advantage is reducing the cost through effective inventory management, which enhances organization's capabilities.

Inventory management, or inventory control, is an endeavor to adjust stock needs and necessities with the need to minimize costs coming about because of acquiring and holding stock. Inventory management is an attempt to keep up a satisfactory supply of products while minimizing stock expenses.

Utilizing different SCM (Supply Chain Management) systems numerous vast organizations have spared a large number of dollars in expenses and decreased inventories while improving efficiency and customer satisfaction.

## LITERATURE REVIEW

An automated warehousing system provides less resources effort, more effective, and reliable results compared to manual handle system.

Warehousing management system (WMS) is a necessary approach for every warehouse. WMS is designed to help reduce costs through effective warehouse processes. The objective of this work is to automate the warehouse management system, along with implementing a mini-size production line for product labeling within warehouse.

Ultimately, a software program must be chosen depending on the needs of the warehouse. For this situation, a standout amongst the most imperative prerequisites was that the product program must have the capacity to withstand extensive limit of information and it likewise must have the capacity to deal with the serial numbers as per expiry, accepting, and initiation date then discharging it to the merchant.

ERP (Enterprise resource planning) is work management software that a company can use to collect, store, manage and interpret data from many business activities [1].

Unified Modelling Language (UML) enables the visualization, specification, construction, and documentation of the artifacts of a software-intensive system. Wholesale management system is developed aim to improve the efficiency and performance of daily business activity of the wholesaler.

UML is utilized at beginning periods of programming improvement due to having a sensible support of outlines and documentations; however, has not demonstrated adequate for the entire displaying of functional and nonfunctional requirements of a system [2].

Raw material inventory is a major element of the working capital of many organizations. Hence, its appropriate control is vital for the productivity of the organization and improvement of encompassing groups. The sudden unavailability of raw material inventory for production can be a great operational disturbance, which results in delivery delays, customer dissatisfaction and loss of market share. The paper presents a Holonic Inventory Management System for managing raw materials utilized by tool and die workshops forming an industrial cluster in the Western Cape Province of South Africa. The proposed design comprises of five self-ruling holons which are used to investigate the stock levels, select the ideal stock model for recharging stocks and examine providers' quotes for those raw materials subsequently building up the best arrangement for renewing

stocks from the best providers in a conveyed fabricating environment. The holons speak with each other by means of Extensible Markup Language (XML).

Results of a valid simulation model established the efficacy of the system [3]. Inventory Management is the procedure of efficiency supervising the steady stream of units into and out of a current supply of goods. The framework is shielded from unapproved client. This examination has outlined a Computerized Inventory Management System to discover stock level of a supermarket [4].

ABC-Cross analysis recommends distinctive materials administration strategies, depending on the specific criteria considered. In many case, it is a shortcomings. To beat this confinement, proposed another coordinated investigation, which permits to consider at the same time all the evaluation criteria for the ideal selection of materials administration [5].

This paper designs, develops and implements a materials inventory management system in view of computerized pipeline. The advancement and use of materials inventory management system can enhance the effectiveness and lessen the workload of materials inventory management personnel [6].

This paper plans to define, describe, and propose a solution for the issue of inventory management system for perishable and substitutable items with multi-period lifetime.

The paper extends the inventory theory to consider inventory management with multiperiod lifetime, positive lead time, client benefit level, and everything is dealt with independently.

The proposed model support to break down the connections between info variables, for example, lifetime, lead time, and substitution proportion to give better understanding of inventory management [7]. As request of an item is not steady, manufacturer should produce the product with the help of forecast data and raw material of a product should reorder by reviewing the current amount of existing stock on hand, price, lead time, and

demand of raw material. Here depending on the situation, manufacturer can take decision about the raw material reorder quantity [8].

IMS gives the simple, quick, precise and proficient framework for the client. In this system, the record of the each request details are preserved along with their transaction related to them. The framework is additionally made secured, as all the upgrading and exchange should be possible by the approved individual. The fundamental motivation behind this framework is to give all insights about the items transaction in the inventory, for example, Item issuing, Items return, and Report of all about the stock explanation, Issue Register, and get enroll were effectively created [9].

Particular programming will help them effectively manage their inventories. It needs more learning and abilities for effective inventory management. Many system such as just-in-time or lean system must be implemented to soar up competitive advantage.

Inventory management system needs or connections with other supply chain management such as effective purchasing planning, raw materials deliveries, warehouse design, transportation system and distribution center locations then the integration of all knowledge significantly increase or improve inventory management capacities [10].

In this paper attempted to build up a cost effective inventory management system for a furniture fabricating organization. The proposed forecasting method can produce optimum solutions for inventory in terms of reduced ordering cost and holding cost. For further reviews, sufficient streamlining strategies can be valuable with probabilistic determining techniques for execution of IMS in a small business unit as a part of SCM.

It is reasoned that EOQ (Economic Order Quantity) model is most appropriate strategy which can be utilized as a part of any little generation firm to control the stock administration. This strategy gives as far as possible to define the general generation procedure to a precise creation. It gives

imperative answers to questions like when to arrange, the amount to arrange, how frequently to arrange? etc. [11].

In light of the execution of supply chain inventory management system for the generation of the auto parts to give timely and accurate decision-making, shorten the production cycle, promote the improvement of production efficiency, to ensure on-time delivery, improve the level service and satisfaction of user, reducing materials in the production process due to mismanagement, waste of manpower and the backlog of work in progress, reduced the amount of funds used, reduced costs, to improve the economic efficiency of enterprises, at the same time improve the management level of the enterprise [12].

An automated IMS is a basic swap for a manual IMS. The primary reason of IMS is to control the development and capacity of the items, together with the benefit of enhanced security and quicker handling. The recently made programming updated the capacities of IMS. Right now, the put away information can be composed by number. The implementation of a labeling and packaging line inside the warehouse was also an additional function. IMS has become more reliable and efficient after the automation [13].

## CONCLUSIONS

Inventory control is not just an advantage but withal a necessity. Inventory management system (IMS) is an essential approach for every warehouse. IMS provides less effort, more efficient, more productive and reliable results compared to manual handled system.

IMS is developed to enhance the efficiency and performance of daily activity of project development cycle. To keep enough stock in order to take care of expected client's demand. To ensure against stock outs: postponed conveyances and sudden request increment. To smooth shop floor necessities IMS is intended to decrease costs through efficacious warehouse processes one of the most necessities was that the product program must have the capacity to withstand vast limit of information and likewise must have the

capacity to deal with the serial numbers according to receiving, return and activation date then releasing it to the dealer.

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