

## **A REVIEW OF INVENTORY MANAGEMENT STRATEGIES**

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*Abstract: Inventory management is the most important for every industry to maintain and control stock of components, uninterrupted manufacturing process, and smooth operation of finance. Companies use inventory management to avoid product overstock and outages. Inventory management is also important for timely availability of materials and components for better production management. Excessive stock is not desirable for longer period of time. Hence, maintaining a balance between too much and too little inventory is objective of every industry. There are several benefits for control of inventory viz, increase the profitability, customer satisfaction level with increase annual turnover for every organization.*

*This paper is a review of several inventory management case studies carried out by several researchers. The objective of this study is to identify suitable method for inventory control of various industries.*

**Keywords:** *Inventory, Inventory control, Inventory management, ABC Analysis.*

### **INTRODUCTION**

Inventory management is a management of inventory in any company on different department includes raw material (RM), work in process (WIP) and finished good (FG). Inventory management is a science primarily about specifying the shape and percentage of stocked goods. It is required at different locations within a facility or within many locations of a supply network to precede the regular and planned course of production and stock of materials. For the management and control of inventory different analysis are used like ABC, XYZ, VED, FSN and SDE.

ABC Analysis: ABC analysis is a basic critical management tool which allows top management to place the effort where the results will be greatest. The ABC analysis does not depend upon the unit cost of the items, but only on its items annual consumption value.

Basic principles of ABC analysis are as follows:

A items: High consumption value

B items: Moderate value

C items: Low consumption value

XYZ Analysis: XYZ analysis is aimed to evaluate the fluctuations in demand or consumption of the items in the stores. This classification is based on the value of inventory of materials actually held in stores at given time. This helps to control the average inventory model value.

‘X’ items which are 10% of no of items stored, but accounting for 70% of the total inventory value.

‘Y’ items are 20% of no of items stored and account for 20% of total inventory value.

‘Z’ items are 70% of no of items stored and account for 10% of the total value.

This analysis focuses on efforts to reduce the inventory of these items.

VED Analysis: The VED analysis defines the degree of criticality on functional basis of the materials towards the production of semi-finished goods. VED analysis, V stands for vital, E stands for essential and D stands for desirable items. The degree of criticality can be stated as whether the material is vital to the process of production, or essential to the process of production or desirable for the process of production. The materials may be classified depending upon their criticality that is on functional basis. In ABC analysis, we have seen that annual consumption value; quantity of materials consumed and unit cost plays a vital role.

FSN Analysis: FSN analysis is based on the frequency of use of the items in the stores. In this analysis, F stands for fast moving items, S stands for slow moving items and N stands for non-moving. Here in this analysis, the date of receipt or the last date of issue, whichever is later, to determine the no of months which have lapsed from last transaction. FSN is helpful in identifying active items which need to be reviewed regularly and surplus items and non-moving items are examined.

SDE Analysis: SDE analysis is done based on the lead time required you procure the items. In this classification, S means scarce commodity, D stands for difficult to procure and E stands for easily available. The SDE is based upon the availability of items. This is based on problems faced in procurement, were some strategies are made on purchasing.

These individual methodologies may also be used in combined mode, which is called filed approach. Like ABC analysis is controlling inventory based on annual consumption of various components, and XYZ analysis is suitable when there is high fluctuation in demand of the products. One can use both method as filed approach and segregate the components to be taken care.

### SUMMARY OF LITERATURE REVIEW ON INVENTORY MANAGEMENT

Dr. Ashok Kumar Panigrahi (July 2013) – The objective of this research paper is to examine the relationship between inventory conservation period and firm's profitability. Inverse relationship has been identified between inventory conservation period and profitability. This study includes liner regression model for the analysis. When ICP days increase the profitability of firm decreases. It is also concluded that the profitability increases with an increase in firm size.

Table 1: Relationship between inventory conservation period and profitability

Variable	Type	Expected Coefficient sign	Rationale
Inventory Conservation Period	Independent Variable	Negative	ICP $\uparrow$ $\Rightarrow$ GOP $\downarrow$
Current Ratio (CR)	Control Variable	Positive	CR $\uparrow$ $\Rightarrow$ GOP $\uparrow$
Firm Size (FS)	Control Variable	Positive	FS $\uparrow$ $\Rightarrow$ GOP $\uparrow$
Financial Debt Ratio (FDR)	Control Variable	Positive	FDR $\uparrow$ $\Rightarrow$ GOP $\uparrow$

Abdulrasheed Abdulraheem, KhadijatAdenola YAHAYA, Sulu Babaita ISIAKA, and OlanrewajuAtanda ALIU, (October 2011) – In this research paper used a regression model  $Y = \beta_0 + \beta_1x_1 + \mu_i$  to explain a strong relation between inventory and profitability. A well designed inventory management can be employed to promote economic development. Small business is likely to generate higher profit if an effective inventory management is put in place strong positive relationship between inventory and profitability of small businesses. This study examined the effect of inventory management on the profit of small business stock of small business are not managed effectively, profit level of the business will be reduced. They should also improve on advertisement, marketing strategies and attitude towards customers in order to make higher sales in increase profits.

Vipulesh Shardeo (April 2015) –The purpose of this research paper is getting the right inventory at the right place in the right time with right quantity because it is directly connected with the production. Here EOQ Model and ABC analysis are used. The importance of this tool is that it directs give attention on the high valued items. Inventory management is to improve customer satisfaction level and increase the production efficiency. Inventory management plays an important role to make a control over the financial statement of the organization. Better management of the inventories would release capital productively. This implies that the profitability of the firm is directly or indirectly affected by the inventory management. Inventory management is the techniques to improve their financial condition and technique of managing, controlling and developing the inventory levels at different stages i.e. raw material, semi-finished goods and finished goods so that there is regular supply of resources at minimum costs. Inventory and stock are considered as the same thing but slight different between them stock is the storage of material kept in specified place only. Inventory management involves all activities which are done for the continuous supply of materials with optimal costs. EOQ Model-The economic quantity is the level for inventory which minimize the total inventory costs. It is the optimal level of inventories which satisfied the demand constrains and cost constrains ABC Analysis- the importance of this tool is that it directs give attention on the high valued items

Total inventory cost= Total ordering cost +Total carrying cost

Timothy Lwiki, Patrick Boniface Ojera, Nebat Galo Mugenda, Virginia Kirigo Wachira (May 2013) – In this paper used Wilson EOQ Model, Information Technology, EPOS Technology, and Lean Inventory System. Applying EOQ Model ordering cost decline with inventory holding, while holding cost rise and that the total inventory associated cost curve has a minimum point this is the point where total inventory costs are minimized, benefits through Information Technology reduce paper work, greater accuracy of information, reduced staff costs and shortage lead times arising from instantaneous communication ,Benefits through EPOS Technology reduced labor costs through time saving and productivity also enable greater responsiveness to customers and supplies and last Lean inventory system argue that excess inventory will adversely affect the net cash flows of a firm and it's reduced the warehousing costs and material handling costs. Too much inventory consumes physical space, creates financial burden and increases possibility of damage, spoilage and loss. Too little inventory often disrupts manufacturing operations and increase the likelihood of poor customer service. Applng this model ordering cost decline with inventory holding, while holding cost rise and that the total inventory associated cost curve has a minimum point this is the point where total inventory costs are minimized. Inventory management is to minimize

inventory investment good inventory control is improved managerial efficiency in all functional areas of management. The EDI is a system which enable direct communication between organizations without there being any human this technology has revolutionized inventory management. EDI link enables the computers of suppliers and customers to interrogate each other about stock levels, production plans and similar information so that activities are appropriately synchronized this bring potential benefits in form of reduced paper work, greater accuracy of information, reduced staff costs and shortage lead times arising from instantaneous communication The EPOS technology allows substantial cost saving and gives real time information on sale of goods patterns of stores traffic and popularity and profitability of every line carried. its benefits include reduced labour costs through time saving and productivity it also enables greater responsiveness to customers and supplies. Lean inventory system argue that excess inventory will adversely affect the net cash flows of a firm and it's reduced the warehousing costs and material handling costs

Thogori M. & Dr. Jane Gathenya (January 2014) – In this paper used EOQ Model and the study conclude that manufacturing firms have poor inventory management systems and this has greatly impacted on their ability to satisfy the customer. Companies can improve and increase customer satisfaction by reducing lead-time of the higher tier customer who contributes significantly to the company's profits. The competitiveness of company of future will largely depend on how they respond to the need of customers at the end of a supply chain better than their competitors. Inventory management is help to reduce costs, improve the quality of service, enhance product availability and ultimately ensure customer satisfaction. Companies can improve and increase customer satisfaction by reducing lead-time of the higher tier customer who contributes significantly to the company's profits.

Hemant Thakkar (March 2014) – This paper indicates that small and medium scale industries are not able to use any standard model of inventory management due to several issues like limited amount of finance, limited man power force, limited infrastructure, lack of sound order conditions and fluctuation of demand etc. Economic Order Quantity (EOQ) model is best suitable to control inventory cost, but many industries does not follow it rigorously. Finally Author has suggested to develop customized model which is suitable to industry for better inventory control and management.

## CONCLUSION

This review of research papers indicates that timely flow of inventory is imperative for the success and growth of any company. The success and failure of a business depends upon its inventory management performance. More specific conclusions from various case studies are as follows.

- ABC inventory analysis is beneficial to classify materials based on demand of the items. It also holds good control over finance, since costly items are under close observation under 'A' category. Items in group 'B' have moderate demand and moderate control. Items in group 'C' are very economic and needs not to be taken care accurately.
- XYZ Analysis is preferable when fluctuation of demand is more and consumption of items is very high. It takes care about variation of demand of items. Field approach of ABC and XYZ analysis is also shows good results in inventory management.

- Profitability is directly or indirectly affected by inventory management. Higher inventory level increases carrying cost. As inventory is increases the profitability is decreases. This inversely proportional relationship has been accepted by my researchers.
- Additional benefits through inventory management of any company increase annual turnover, customer satisfaction level and profitability with reduced transportation cost.
- Majority researchers have suggested use of Economic Order Quantity (EOQ) model for inventory control. Normally, industries ignore this relationship and purchases bulk materials to get economy in price factor.
- ABC Analysis is simplest inventory management model, and it is recommended by many researchers.
- Better management of inventory lies with the customized model which includes multiple strategies for inventory control and management for small and medium scale industries.
- Computer base inventory management is very easy and simple compare to manual or traditional methodology. Huge stock level information can be retrieved at faster rate.
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