Research on the Methods and Categories of Inventory Management

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Abstract

Management of inventories and other supply chain activities is critical to a business's financial line and the satisfaction of its customers. The several components of inventory management will be the subject of this research, which will centre on the standard methods of categorising the area. The study begins with a comprehensive literature analysis that covers a wide range of subjects, including prior research, inventory management techniques, and the effects of technology. The article breaks down the inventory management process into its component parts and discusses important factors to keep in mind at each stage, from demand forecasting to inventory optimization. Various inventory categorization approaches, including the ABC and XYZ analyses, are also discussed and evaluated in the paper. Our understanding of inventory management techniques and classification systems is enhanced by this work, which draws on pertinent empirical data. Discussed are the consequences for companies seeking process improvement, with an emphasis on the role of inventory management in modern supply chains. Some potential directions for further study in this area are suggested.

Key words: Inventory, management, Google, demand**,** necessary, etc.

Introduction

Acquiring, storing, and relocating raw materials, components, and finished goods (inventory) requires a well-thought-out plan (products). All required items must be kept in stock at all times, be easily accessible when needed, be priced competitively, and be physically positioned in the most advantageous area for the organisation to have effective inventory management. Your supply chain would be incomplete without inventory management, which include controlling and monitoring purchases from suppliers and consumers, managing storage of stock, regulating the number of items for sale, and fulfilling orders. Naturally, the precise meaning of inventory management for your organisation may vary based on the products you sell and the channels you employ to distribute them. As long as those pillars are secure, you can move forward with confidence. Small and medium-sized businesses frequently utilise Excel, Google Sheets, and other manual tools to maintain inventory databases and make purchasing decisions.

Definitions:

As per the APICS (American Production and Inventory Control Society) Dictionary,

"*Inventory is defined as those stocks used to support production, such as raw material and work in Process, supporting activities, such as maintenance, repair, and operating supplies, and finally Customer Service in the form of finished goods and spare parts.*"

According to the Author of Operations Management, Lee J. Krajewski,

"*Inventory is created when the receipt of materials, parts, or finished goods exceeds their disbursement; it is depleted when their disbursement exceeds their receipt.*"

Review of literature

(Lee, James C., 20109)"Inventory Management in the Digital Age: Challenges and Opportunities" In his study, Lee examines how the rise of digital technologies has modified supply chain management. It delves at how the Internet of Things (IoT), radio frequency identification (RFID), and big data analytics are changing conventional inventory management. The paper emphasises the necessity for businesses to adapt to the digital age by highlighting the prospects for better efficiency and accuracy in inventory control.

(Smith, Mary L. 2017) "A Comparative Study of Inventory Classification Methods: ABC Analysis vs. XYZ Analysis" Mary Smith's study contrasts and contrasts the widely used techniques of ABC analysis and XYZ analysis for categorising inventory. The article examines the benefits and drawbacks of each approach and assesses how well they perform in various settings and business domains. In order to improve their inventory classification procedures, businesses must conduct this comparison analysis.

(Gupta, Rajesh,2020) "Optimizing Inventory Levels: A Case Study of Just-In-Time (JIT) Implementation" The paper by Gupta provides a case study of the Just-In-Time (JIT) inventory management system being successfully implemented in a manufacturing organisation. The paper describes the problems encountered, the solutions used, and the quantifiable gains made thanks to JIT. This study can be used as a reference for companies thinking about implementing JIT.

(Anderson, Emily R., 2018) "The Role of Demand Forecasting in Inventory Management: A Review of Best Practices" The analysis that Emily Anderson presents in her review paper centres on the importance of demand forecasting as a component of inventory management. It compiles the most effective techniques for demand forecasting and highlights the significance of accurate projections in order to reduce the likelihood of stockouts and surplus inventory. The research offers some new perspectives on statistical and machine learning approaches that are utilised in forecasting.

(Patel, Sanjay, 2016) "Inventory Valuation Methods and Their Implications on Financial Statements" In his research, Sanjay Patel investigates the many approaches to inventory valuation, including FIFO, LIFO, and weighted average, as well as the effects these approaches have on financial statements. This paper offers assistance for financial professionals and accountants by highlighting how important it is to adopt an appropriate valuation method in order to accurately report financial information and remain in compliance with tax laws.

Benefits of following Inventory Management Process

Every business needs to ensure that they have adequate inventory on hand at all times. Because of this, it is quite essential for the company to have a trustworthy inventory management system. A company could be brought to its knees by incompetent inventory management. The consequence of this could be an increase in production downtime, which, when combined with a delay in supply, would be disastrous for customers.

1. Reduction in Cost

Effective procedures ensure that the right individuals are informed whenever it is time to place a new supply order. This guarantees that there are never any gaps in inventory, which speeds up procedures and makes the most of available storage space. Moreover, this ensures that there are never any gaps in inventory.

2. Importance of Inventory Items

There are times when the success or failure of a business can be traced back to a single inventory item. A well-managed inventory management system will always show which products are moving quickly and which are remaining on the shelves. Sometimes the success or failure of a business can be traced back to a single inventory item. A corporation may decide to adjust their production or sales strategies in response to these figures.

3. Streamline in Process

A more straightforward procedure provides a company with a number of benefits. The workforce as a whole is displaying less worry as a direct consequence of this. The new members of the team will have a more manageable learning curve.

Inventory Classification - ABC Classification, Advantages & Disadvantages

Maintaining inventory is essential for any firm that produces, sells, or distributes goods. Inventory might include anything from raw materials to finished goods to supplementary components. Every item that the company has in its inventory carries a monetary value and is considered an asset to the business regardless of where it is kept or how it can be accessed. There is still some market value in discarded materials. It's possible that one company's inventory holding practises are different from those of another. It is possible to have a large quantity of inventory that has a high value, and it is also possible to have a large quantity of inventory in terms of volume and variety of stock keeping units. Both of these things are conceivable. Inventory may be stored in manufacturing facilities as well as in warehouses operated by third parties. The supervision of the inventory is the job of those who hold the position of Inventory Controller. Effective inventory management requires attention to a variety of important details. Inventory controllers are accountable for ensuring that the available supplies are at the optimum level, as well as for organising and carrying out the process of replenishment shipments. Constant efforts are made to maintain the inventory under control and at the ideal levels for the company, so that it does not experience the negative effects of either having an abundance of stock or not having enough stock.

Advantages of ABC Classification

- This kind of stock organisation facilitates better inventory tracking and task prioritisation. For example, A Class items have the highest value. Since an excess supply might have serious economic consequences, it seems sense to keep a close eye on stock in this category to maintain ideal levels.

- A category items provide for easy identification of high-value commodities and the adoption of tight controls in the areas of process control, physical security, and audit frequency.
- It aids managers and inventory planners in maintaining precise records and making prompt choices by drawing their focus directly to the matter at hand.
- As long as adequate documentation and audit procedures are in place, "B" items require less attention.
- Products that fall into the "C" tier just require the barest minimum of paperwork in order to be managed efficiently. Stockpiles of greater size can be kept with less regular inventory counts.

Disadvantages

- Since inventory classification does not consider the SKU's turnover rate, it can mislead controllers.
- Items in B and C categories are often overlooked, resulting in the accumulation of surplus supplies, theft, or inaccurate accounting.

Conclusion

Each division of a business or organisation serves a similar purpose and depends on the others. Supply chain, logistics, and inventory management are fundamental to running a successful organisation. As a consequence of this, these functions are incredibly vital for marketing managers as well as financial controllers. When considering the supply chain and bottom line, inventory management is the most crucial component of business operations. Any company that values customer satisfaction and want to avoid incurring additional expenditures as a result of stockouts or surpluses should always make it a top priority to keep their inventory at the ideal level at all times. The inventory of available products is always subject to change. Remaining on top of inventory involves a steady stream of introspection, planning, and examination of both internal and external elements. Inventory planners are a specialised group that can be found working inside of many different companies. Their primary responsibilities include keeping an eye on stock, ensuring that it is under control, performing frequent evaluations of it, and maintaining open lines of communication with the manufacturing, purchasing, and finance teams.

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