Inventory Management System for Retailers

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Introduction:

Inventory management is one of the most challenging problem areas in supply chain management. A system to aid that management is a beneficial tool to a manufacturer or a retailer. These types of systems are in demand today. The term inventory refers to a company's stockpile of material and the components that make up the output. Inventory management refers to managing the quantity, quality, location, and transportation of various materials or products" utilised in manufacturing by various industrial organisations or in sales by various retailers.

Accurately maintaining figures on the finished goods inventory makes it possible to quickly convey information to sales personnel as to what is available and ready for shipment at any given time.

Literature Survey:

- **A Study of Inventory Management System Case Study**

- Tariq Sheakh & Nazar Sohail.

Inventory management is a challenging problem area in supply chain management. Companies need to have inventories in warehouses in order to fulfil customer demand, meanwhile these inventories have holding costs and this is a frozen fund that can be lost. Therefore, the task of inventory management is to find the quantity of inventories that will fulfil the demand, avoiding overstocks.

Inventory costs have a lot of impact on the profitability of the firm and its success. Inventory management and its optimised decisions are depending on the identification of key success factors and right decisions at the right moment.

Future Work:

- Detail study about all the material was not possible because of time limit.
- Some of the information was kept confidential by the steel industries department.
- Study was confined only to the selected components in the stores department of steel company.
- Comparative study may be new research problem for the future work

- **A Study of Inventory Management System of Linamar India Pvt. Ltd**

- Anajali Mishra & Harshal Anil Salunkhe

The basic objective of this paper is to study inventory management techniques used in Linamar India Pvt. Ltd. and find out some measures for improvement on the inventory management process of the concerned company. The present system of inventory management of the company is good. For improvement of the present inventory management system, companies should adopt other inventory management techniques.

The Inventory Management System used here helps the organisation to reduce the cost of managing the inventory. It also ensures the smooth functioning of all business activities. The techniques undertaken by Linamar India Private Limited include EOQ, safety stock analysis, and ABC analysis. The efficient and effective usage of these methodologies has increased the inventory turnover ratio, which ultimately indicates that sales are increasing every year.

- **On Models of Inventory Management Under Uncertainty**

- Serhii Ziukov

Inventories are raw materials, work-in-process goods and completely finished goods that are considered to be the portion of a business's assets that are ready or will be ready for sale. Formulating a suitable inventory model is one of the major concerns for an industry. The earliest scientific inventory management research dates back to the second decade of the past century, but the interest in this scientific area is still great. Again considering the reliability of any process is an important feature in the research activities. Values of some factors are very hard to define or almost unreal.

In the past years, the efficiency of inventory management has become an area of major concern in business. New inventory models for managing the inventory levels are now available. This paper has presented a literature survey of models of inventory control under uncertainty. Most of the analytical models addressed only one type of uncertainty and assumed a simple structure of the production process. The most common dimensions to be considered as fuzzy variables are demand, the cost of acquisition. Each model, based on some assumptions, has its benefits and disadvantages, but still, many authors continue to design inventory control models using such approach as fuzzy logic. The existence of such quantity of models shows that fuzzy set theory is one of the appropriate methods, which can suppose a great advance in inventory management. The emphasis in each review was to identify how the fuzzy set theory was used in the formulation of the inventory model. The classification and review of models are quite general and can be extended.

There is no standard solution – the conditions at each company or firm are unique and include many different features and limitations. An occurring task of mathematical models development and determining the optimal inventory control strategy is related to this problem.

- **Research paper on Inventory management system**

- Punam Khobragade, Roshni Selokar, Rina Maraskolhe, & Prof.Manjusha Talmale.

Inventory Management System is software which is helpful for the businesses that operate hardware stores, where the store owner keeps the records of sales and purchase. Mismanaged inventory means disappointed customers, too much cash tied up in warehouses and slower sales. This project eliminates the paperwork, human faults, manual delay and speed up process. Inventory Management System will have the ability to track sales and available inventory, tells a store owner when it's time to reorder and how much to purchase.Inventory Management System is a windows application developed for Windows operating systems which focused in the area of Inventory control and generates the various required reports.

This paper presents an alarm about the information section in the bill which in view of desktop application. It's a straightforward desktop application in which the network to the immediate distribution centre with the goal that information ought to be refreshed in store for the confirmation. It's a secure application in which there is no information spillage from the stockroom.

- **Performance Improvement of Inventory Management System Processes by an Automated Warehouse Management System**

- Anas M. Atieh, Hazem Kaylani, Yousef Al-abdallat, Abeer Qaderi, Luma Ghoul, Lina Jaradat, & Iman Hdairis.

This study investigates the impact of a warehouse management system on supply chain performance that provides less resources effort, more efficient, and reliable inventory management system. The supply chain procedures carried out in the warehouse were reviewed before customizing a software that can handle the necessary transactions. The software was tested for enhancing the work flow and providing a timely and efficient handling. Data was collected from the warehouse of a leading telecommunications service provider in Jordan. Furthermore, the facility layout was studied and we introduced a production station within the warehouse, which resulted in better space optimization/utilization of the warehouse.

The takeaway from this study is that the stored data can be organised according to serial number, activated easily assuring the FIFO concept, and handed to the dealers accurately with the least amount of possible errors. The implementation of a labelling and packaging line inside the warehouse was also an additional function in this study, in which labelling of cards is performed followed by repackaging.

- **A Review on of Inventory Management in Manufacturing Industry**

- Vikas & Mr Sandeep Malik

Effective inventory management is a tool to run the organisation property. Therefore, assessments of inventory management have a vital role. This is the reason why the study is conducted. To conduct this research, applying descriptive research is believed to be appropriate. In this study census was used, because it increase research quality and the population size is less than 100. To get relevant data both primary and secondary data were collected. After the data collection process ends, it was analysed by descriptive statistics like percentage and table. This study was conducted in Arba Minch University. Based on the findings of the study, the researcher forward feasible recommendation so as to help the organisation overcome its inventory management related problems. The major finding of the study indicates that the inventory management practices of the university were poor.

A better inventory management will surely be helpful in solving the problems the company is facing with respect to inventory and will pave way for reducing the huge investment or blocking of money in inventory. Therefore, although implementing advanced inventory management always sounds good in theory, in practice, the balance of cost and benefit should be considered.

- **A Study on Inventory Management and Control**

- Pratap Chandrakumar. R & Gomathi Shankar.

The term stock alludes to the merchandise or materials utilized by a firm with the end goal of generation and deal. It additionally incorporates the things, which are utilized as strong materials to encourage generation. There are three fundamental sorts of stock: crude materials, work-in-advance and completed merchandise. Crude materials are the things bought by firms for use underway of completed items. Work-in-advance comprises all things as of now during the time spent creation. These are quite made items. Completed products comprises those things, which have just been delivered however not yet sold.

This study contains proper observation of inventory management in the company. An efficient inventory management can control and make the company grow more and if in an inefficient way it will ruin the company business. Companies are always concentrated on domestic as well as international in order to increase the business globally based on trends. This study is on a leading brake manufacturing company conducting ABC analysis for items predicting the future demands which should be forecasted by the company. From the study it is shown that buying of materials and shortage occurs due to improper ways of forecasting the demand.

- **Inventory Management Practice in Case of Arba Minch University**

- Yetayew Alemu.

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- **Study and Analysis of Inventory Management Practices in Small Scale Industry.**

- Dr. Nagendra Sohani & Ajay Pagare

Effective inventory flow management in supply chains is one of the key factors for success. The challenge in managing inventory is to balance the supply of inventory with demand. A company would ideally want to have enough inventories to satisfy the demands of its customers no lost sales due to inventory stock-outs. On the other hand, the company does carrying inventory. Enough but not too much is the ultimate objective. The inventory investment for a small business takes up a big percentage of the total budget, yet inventory control is one of the most neglected management areas in small firms. Many small firms have an excessive amount of cash tied up to accumulation of inventory sitting for a long period because of the slack inventory management or inability to control the inventory efficiently. Poor inventory management translates directly into strains on a company's cash flow.

The company has difficulty in matching its supply with the customer demand efficiently, which means both stock-out of inventory and excess inventory occur in the business? The management problem has affected negatively their profitability mainly due to the existence of excess stock. It is considered that the problem results from insufficient control over inventory and volatile demand for each product on a monthly base. To get a reliable forecast of the demand is not easy task in the wholesaling industry because of being unable to estimate the right quantity of demand during a specific period for each product. Another reason is that the lead-time of most products is long, about three months at the longest.

- **Literature Review on Inventory and Material Management in Construction Industries**

- Prajwal G. Pagare & Aditi R. Sonawane

The term 'inventory' refers to a company's stockpile of material and the components that make up the output. Inventory and material management refers to "managing the quality, amount, location, transportation, and timing of various products" utilized in manufacturing by various industrial organizations. Materials on a construction project can contribute up to 60 percent of the total cost of the project, therefore Materials management and decreasing procurement prices is critical task in the construction project, but if done systematically, it can enhances prospects to reduce overall project expenses. This review paper discusses effective inventory management and material management techniques and attempts to provide a clearer picture of the same.

- **Nann Lwin Phu et.al. (2014)**

In this study, construction inventory management is divided into three categories: methods for effective material management on construction sites, reasons that increase waste on construction sites, and inventory control challenges. The primary data gathering method is quantitative survey (numerical values); questions for field surveys. Data for the study are gathered via a standardised questionnaire distributed to 53 respondents. There were 18 project contractors among the responders. Inferential statistics, such as the Relative Importance Index (RII), are used to analyse the data, and the perspectives of project engineers, site engineers, and contractors are checked to see if there is a substantial degree of agreement among respondents using the Kruskal Wallis test or the H test.

The overall findings of this study show that present inventory management techniques in local construction projects require systematic and effective oversight. According to the results of the agreement study, the perceptions of three respondents (project engineers, site engineers, and contractors) are same in all three cases which were methods for effective material management on construction sites, reasons that increase waste on construction sites, and inventory control. As a result, all project engineers, site engineers, and contractors are considered to be primarily concerned with material management, and their responsibilities and decisions are critical to improving successful material management.

- **A Review of Inventory Management System**

- Varalakshmi G S & Asst Prof. Shivaleela S

Inventory Management System is extremely beneficial to business owners, as they allow shops to properly store sales and purchase records. When inventory is mismanaged, it leads to dissatisfied consumers, slower sales, too much cash on hand, and warehouses. This inventory system reduces

manual work, human mistake, and manual delays while simultaneously speeding up the process. This inventory management system will be able to track sales information as well as inventories.

This Inventory Management System is a web application for Windows that focuses on inventory and sales clearance. It was created for Windows operating systems. The inventory management system has a number of features. This web application has logical tools for evaluating ideal inventory levels and selecting the appropriate replenishment strategies automatically. It also has capabilities like the ability to identify stock levels, compute reorder points automatically, and highlight potential stock-outs. This technique eliminates the risk of stock-outs of fast-moving goods by minimising delays.

- **An Informative Literature Review On Inventory Control System**

- Rashmi Mishra & Puneet Shukla

In supply chain management inventory control is a challenging problem. To fulfil customer demand , companies require to have sufficient inventories in stock meanwhile these inventories have holding costs and this is frozen fund that can be lost and burdens the company's account. Therefore, the task of inventory management is to find the quantity of inventories that will fulfil the demand, avoiding overstocks. In the present paper , an attempt is made to provide an up-to-date and complete review of existing literature, concentrating on descriptions of the characteristics and types of inventory control models that have been developed by Indian as well as Foreign authors.

Development / Future Focus:

The project focuses on building an Inventory Management System for Retailers. It ensures that the retailers carry the right amount of merchandise that the customers want, with neither too little nor too much on hand. By managing inventory, retailers meet customer demand without running out of stock or causing wastage by carrying excess amounts of merchandise.

The primary motive behind retail inventory management is to understand the sales pattern and to lower the cost of maintaining an inventory/warehouse.

Once retailers successfully log in to the application, they can update their inventory details. The users will be able to add new stock by submitting essential information. They can view details of the current inventory. The System will automatically send an email alert to the retailers if there is no stock found in their accounts. So that they can order new stock.

Technology Stack : Python, Flask, Docker

Conclusion:

In conclusion, an inventory management system is an essential replacement for a manual pen-and-paper system. Its intended purpose is to control the movement and storage of the products with the added benefit of enhanced security and quicker handling.

Inventory management is a set of techniques, methods, and technologies used for managing and controlling inventories. The *Inventory management system* software is a necessary tool to keep track of the stocks of a particular retailer. It is also capable of providing valuable information to sales data and analytics. Ultimately, it is the lifeline of a company as it drives profitability by generating sales. The advantages of a sophisticated and effective inventory management system can be enormous. The way a company maintains its inventory can have a significant impact on its overall success.

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