Inventory Management in Supply Chain

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Abstract:-The paper introduces the use of inventory management in supply chain and how it can be useful for business and proper supply chain management. Inventory management refers to the process of ordering, storing and using a company's inventory: raw materials, components and finished products.The aim of inventory management is to maintain and keep an optimum size of inventory for efficient and smooth production and sales operations. There are several ways to improve the inventory management such as effective sales forecasting, managing customer service, close working relation with suppliers, good information systems etc.

Keywords:— Inventory Management, Supply Chain, RFID, Inventory Turnover.

I. INTRODUCTION

Inventory management is a standout amongst the most imperative parts in operation management.It is likewise a significant part of management since stock is one of the critical money related resources of a business that can indirectly affect the profitability of a company.

The goal of effective inventory management is to “meet or exceed customers’ expectations of product availability with the amount of each item that will increase an organization’s total profits or decrease total inventory investment” (KalpanaRawat,2015) .The span of inventory management concerns the fine lines between replenishment lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods, and demand forecasting.For appropriate inventory management, it is essential that stock choices must be taken soundly based on quantitative assessment of the pertinent variables included.

II. LITERATURE REVIEW

Melson, Lisa M;Schultz, Mary Kay(1989) tells about how to overcome the barriers in the Inventory management in an Operating Room of a hospital.According to the themstraightforward controls can diminish a hospital's operating room(OR) stock by 10 percent to 30 percent.Controlling OR stock includes a four-advance plan: count the materials, estimate their value, reduce the value, and implement controls. This procedure gives significant data to consulting with vendors.Armed with stock information, financial managers might have the capacity to spare their healthcare organization’s $200,000.

Koehler, Kenneth G (1990) tells about seven ways in which the inventory management can be done more efficiently. According to the author the difficulties for inventory management can be met legitimately and adequately by handling these seven key areas.

The beginning stage for enhanced stock management must be an effective sales forecasting process.Sales figures are a key determinant of stock turnover and administration execution including fill rates(or stock-outs) and order delivery process duration. Managing Customer service is the second essential to enhance stock administration. Client benefit gauges must be set up in meeting with clients so their necessities are reflected in fill rates and lead times. Most clients expect predictable, reliable service. Building up and checking administration principles and alerting clients ahead of time to an inability to meet these guidelines can go far toward great client relations and powerful stock administration.The third key for a better inventory management is close working relation with suppliers. Relationship with suppliers is as important as it is with the customers. An open communication through personal contacts will help the distributers to gain benefit in the inventory management process. The fourth key is to set realistic inventory turnover objectives.Stock spending plan should be set from the base up, in light of anticipated turnover of individual stock things or product offerings.Understanding and appreciation of inventory carrying cost is the fifth key for better inventory management. The sixth key is the good information systems. Timely and accurate information on demand, status of the stock, service performance both from vendors to the customers, and suggested renewal quantities can provide the managers with a competitive edge.The last key for better management of inventory according to the author is discipline. A discipline to take after moderately straightforward approaches and methods precisely and reliably.

Denton, D Keith (1994) describes how the top management's commitment and dedication helped in the inventory control of Nutrition and Chemical division of Syntax Agribusiness Inc. And this they achieved without any computer controlled system or any sophisticated software. Their technique was simple. The upper management were very much committed to the inventory control of the company. They made their employees aware about the benefits of the inventory control and their responsibility towards it. Top management were open to the employees about the outcome of the poor and inefficient inventory control. The Human Resource, Finance, Marketing department works together to achieve this. That is every department have something to contribute towards the inventory control. The honesty and the way the people are treated in the organization makes a difference.

Verwijmeren, Martin van der Vlist, Piet, van Donselaar, Karel (1996) discusses the driving forces for networked inventory management and outlines information systems for this particular type of supply chain management. Their contribution to the supply chain management research aims at the development of so-called networked inventory management information systems (NIMISs). Those are information systems for integral inventory management across networked organizations. For this networked inventory management, information systems are vital resources, because huge amounts of complex information have to be transformed, stored and communicated inside and across the co-operating organizations.

Zheng Sui, Abhijit Gosavi(2010) tells that in a Vendor-Managed Inventory (VMI) framework, the provider settles on choices of stock administration for the retailer; the retailer isn't in charge of putting orders. There is a lack of streamlining models for recharging techniques for VMI frameworks, and the business depends on well-understood, however straightforward models, e.g., the newsvendor rules. In this article, proposes a strategy in view of fortification realizing, which is established in the Bellman equation, to decide a renewal arrangement in a VMI framework with dispatch or consignment inventory.It additionally propose rules in light of the newsvendor rules.

Sizakele Mathaba, Nomusa Dlodlo, Andrew Smith and Mathew Adigun (2011)proposes that the value of carrying inventory not only lies in the cost of direct storage or its insurance etc. but also all those activities that are associated with it such as excel files and other software used for this purpose. Therefore taking help of RFID (Radio Frequency Identification) and Web 2.0 technology can help in inventory management. RFID technology in a retail industry provides real-time replenishment of products, and it does not require human intervention or line of sight to function. RFID innovation can monitor, and follow the area of items more decisively than different strategies in current utilize, in this way possibly decreasing misfortunes.

Bulent Basaran (2013) in describes about how operational and structural conditions affect inventory management. The author has collected survey data from 305 large manufacturing enterprises (LMEs) located in turkey. And the survey concluded that demand and capacity related issues are among the most significant for inventory management and some internal conditions such as 'work flow breaks' and 'uncertainties in daily material usage' are among the least significant for better inventory management. In this article first, qualitative managerial performance indicators of inventories have been specified in this study. Second, some basic and operational conditions, causing stock be moved and contrarily influenced, have been indicated.Third, how those execution pointers contrast as far as three distinctive influencing degrees of stock levels have been examined.

Kalpana Rawat (2015) talks about the inventory management and how it helps in the business especially about the Indian business. It describes that inventory records relating to quantity andvalue can be maintained through two major Inventory Systems in India- Periodic and Perpetual Inventory Systems.Stock Management System is an endeavor wide discipline concerned about the distinguishing proof and following of Information Services (IS) equipment and programming resources. Its three main areas of concern are: Acquisition, Redeployment, and Termination.

Kamilah Ahmadand Shafie Mohamed Zabri(2016) in their study examines the current state of inventory management practices and factors that influence their use in micro retailing enterprises. The survey results demonstrate that most responding enterprises have adopted both unsystematic and systematic inventory management approaches in their business. A fully systematic approach of inventory management was only utilized by 33 per cent of the total respondents. In terms of inventory management techniques used, 'the rule of thumb' is the most popular among respondents. Meanwhile, EOQ, Bar Code Tagging and VMI are only applied by a small number of respondents.

Botha, A., Grobler, J. & Yadavalli, V.S.S. (2017)in their paper addresses four key issues. The theory behind the MIP method and how it is implemented was analyzed. The difference between the theoretical and actual implementation was identified. An alternative STS method, focusing on stock targeting, was derived theoretically. An SDSM was developed to analyze the performance of the ordering algorithms on the supply chain.The results showed that the STS method provides a new approach to inventory management in the automotive supply chain. It provides improved performance for lower stock holding than the implemented MIP method.

III. FINDINGS

- Simple controls which enabled proper inventory management in an Operating Room described four plans:- Count the Inventory, estimate their value, reduce their value and implement controls.
- Seven ways in which the inventory management can be done more efficientlyare:-
  - (a) Sales forecasting
  - (b) Managing customer service
  - (c) Close working relation with suppliers
  - (d) Set realistic inventory turnover objectives
  - (e) Understanding and appreciation of inventory carrying cost
  - (f) Good information systems
  - (g) Discipline.
- The commitment and dedication of top management improves inventory management of a company.
- RFID and Web 2.0 technologies can help reducing the cost associated with inventory management

  In order to achieve proper management of the inventory the companies and enterprises can adopt various techniques mentioned. Hence proper inventory management will promote more productivity.

IV. CONCLUSION

Inventory management is an imperative function that aides and guarantees the achievement of manufacturing companies. Effective execution of stock will enhance the whole business altogether. Present day Inventory management forms use new furthermore, more refined procedures that accommodate dynamic streamlining of inventories to amplify client benefit with diminished stock and lower cost. The objective of the great Inventory management isn't flawlessness, however, the change. These changes ought not to be seen as a transient exertion but rather should proceed on a permanent basis. A genuinely powerful Inventory management framework will limit the complexities engaged with arranging, executing and controlling a store network organize which is critical to business achievement.

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