

Role Of Inventory Management In Supply Chain On Small Scale Industries

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Abstract: Inventory management plays a crucial role in the working of any manufacturing unit. And it is important to make sure that the raw materials are available for the production at the right time in right quantity and are bought at the price. The study is conducted to understand the inventory management system in small scale production units.

I. INTRODUCTION

The inventory management is the backbone of any firm and it plays a crucial role in the operations and decision making of the firm. Thus it becomes increasingly important to manage inventory otherwise it may lead to major costs for the firm. With the ever dynamic and improving technology the tracking, requirement and the utilization of the raw materials are monitored using computers. The difficulty is with the small scale industries which may not be in a position to invest huge sums of money in these technologies and will rather use the traditional methods for inventory management for their operations.

II. LITERATURE REVIEW

(Thomas C. Jones, 1985) Competitive pressures will bring in major changes in inventory management in the next few years. The changes will result from businesses identifying and capitalizing on the opportunities to manage their entire supply chains as single entities. (Minner, 2003) Inventory models with multiple supply options and discusses their contribution to supply chain management. Researchers have outlined various inventory models, which use several suppliers in order to avoid or reduce the effect of shortage situations. This article also studies about inventory problems from the fields of reverse logistics and multi-echelon systems. (Baker, 2007)

Inventory and warehousing within international supply chains have developed an exploratory framework that assists understanding in the area. Researchers have found out that for these case studies supply chains, the supplier lead times were far in excess of the customer lead times and that, with the exception of new product lines, demand therefore needed to be supplied from inventory. (Yan Dong, 2002) Vendor management inventory affects a supply channel. It has been stated that vendor management inventory always leads to a higher buyer's profit, but supplier's profit varies. It has been found out that in the short term, vendor management inventory is found to reduce total costs of the channel system but under certain cost conditions between buyer and supplier, it could decrease the purchasing price and supplier's profit and in the long-run, it could more likely increase supplier's profit than in the short-run. It has been observed that VMI is an effective supply chain strategy that can realize many of the benefits obtainable only in a fully integrated supply chain. (RamGaneshana, 2001) The main objective of this paper is to study the impact of selected inventory parameters and management technique on the performance of an expanded and comprehensive retail supply chain. This article studies the sensitivity of supply chain performance to three inventory planning parameters, which are the forecast error, the mode of communication between echelons and the planning frequency. It has been concluded by stating that all three parameters have a significant effect on performance. (Jing-Sheng Song, 1996) This paper presents an inventory-control model, which

includes a Markovian model of the supply system. As that system evolves over time, so do the replenishment lead times. The optimal policy has the same structure as in standard models, but its parameters change dynamically to reflect current supply conditions. It has been found out that a longer lead-time does not necessarily imply more inventories. The lead-time is important, but so is a concept of order coverage. (H.T.Lee, 2006) It has been observed that inventory control plays an important role in supply chain management. Researchers have identified that properly controlled inventory can satisfy customer demands, smooth the production plans and reduce the operation costs. Researchers state that the bullwhip effect, observed in many supply chain management cases causes excessive inventory due to information distortion. In this paper, one of the main causes of bullwhip effect, order batching, is considered. A simplified two-echelon supply chain system, with one supplier and one retailer that can choose different replenishment policies, is used as a demonstration.

III. DATA

Questionnaire was used to collect data from the inventory manager or the general manager.

IV. METHODOLOGY

Correlation testing was done on the variables to understand the inter-relationship between the various variables.

V. FINDINGS AND INTERPRETATIONS

When the managers were asked if they know about Inventory Management in the supply chain all the respondents were well aware of this fact. And we found a 100% response of yes.

Respondents were asked the major factors leading to inventory management effectiveness and the basis were based upon Financial Factors, Lead Time, Suppliers, Product Type, Management and External Factors.

It was found that 35% of the respondents felt that the financial factors played a major role, 15% felt lead time was a major effectiveness factor, while 17% felt that suppliers played a major role, 20% felt that the product type and its feature played a major role and out of the remaining 13%, 5% felt that management and the 8% felt that there were other external factors that played a major role in the inventory management effectiveness.

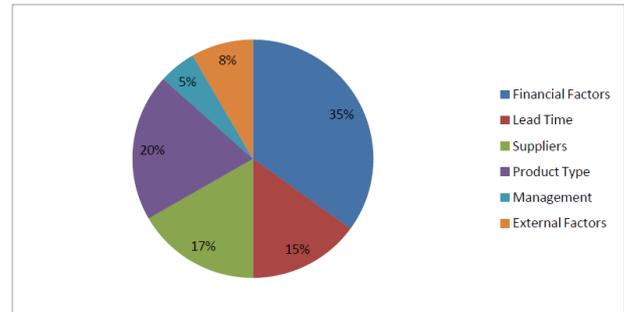


Figure 1

The respondents were asked about the importance of inventory management in the working of the small scale industries and their distributors. Though 66% of the managers gave the importance rate of 4 and 5. Where 5 meant that it's the most important. The others did feel that there were various other factors to a successful working of a SSI.

When the respondents were asked what are uses of Inventory Management in the supply chain for small scale industries and distributors the warehouse organisation received the highest importance followed by to maintain order level, Accurate Planning, Time Saving and Cost Cutting.

When asked about the various aspects which can affect the inventory management of a small scale industry and distributors it was found that 24% felt raw Materials, 30% felt work In Progress, 12% felt finished Goods, 30% felt inventory determination and the remaining 4% felt Inventory shortage were the major aspects.

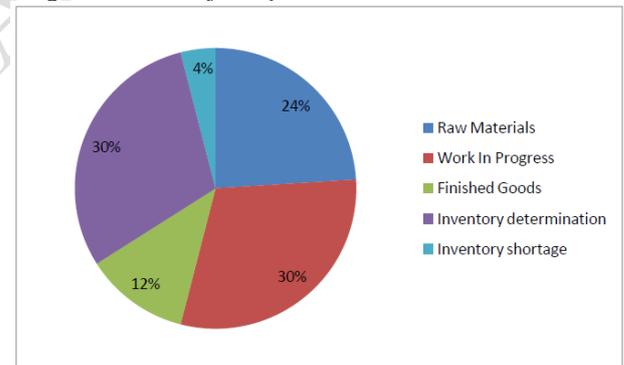


Figure 2

When asked about the precautions that should be taken to have an efficient inventory management system the half the respondents felt that the requirement of a responsible purchase team is required, 16% felt the need for a set standard, 26% felt the need for selection of a good distributors and the remaining 8% felt that investment planning and forecast was required.

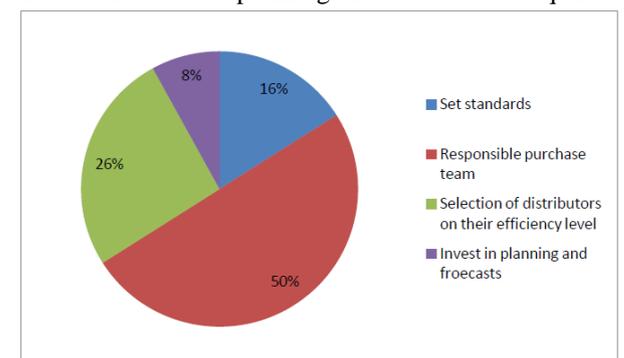


Figure 3

When the respondents were asked if they think norms and policies should be laid down to ensure quality of inventory management. Around 72% of the respondents felt the need to have effective norms and policies and the rest felt that there were others factors which were more important.

The next question asked if the efficient inventory management leads to the clients overall satisfaction. And 66% of the respondents were in the opinion that it leads to the overall satisfaction of the customers and the others felt that there were various other factors were responsible for the overall customer satisfaction.

Finally when asked about the various ways through which we know Inventory Management has lead to overall customer satisfaction.

Around 90% believed that On-time delivery was a major indication that that the customers were satisfied and the 6% respondents felt customer loyalty and the remaining 3% felt its repeat purchases.

VI. CONCLUSION

The need for inventory management and it's importance is very evident in the small scale industries. The managers felt that the financial factors and the product type were major aspects in inventory effectiveness. And the 66% of the managers actually attribute the success of their firm to inventory management. Warehouse management was given the highest importance. And WIP, raw materials and finished goods were seen as major aspects that affect the inventory management. And the major precaution was that of to select the responsible purchase team to have effective inventory. 72% of the respondents felt the need to have effective norms

and policies for the better management of inventory. And the managers feel that inventory management plays a major role in customer satisfaction and this is through on time delivery. The importance and the investment in the inventory management of Small Scale Industry shows its importance in the organisation.

REFERENCES

- [1] Baker, P. (2007). An Exploratory Framework of the Role of Inventory and Warehousing in International Supply Chain. *International Journal of Logistics Management*.
- [2] H.T.Lee, J. (2006). A study on inventory replenishment policies in a two-echelon supply chain system. *Computers & Industrial Engineering*.
- [3] Jing-Sheng Song, P. H. (1996). Inventory Control with Information About Supply Conditions.
- [4] Minner, S. (2003). Multiple-supplier inventory models in supply chain management: A review. *International Journal of Production Economics*.
- [5] RamGaneshana, T. A. (2001). The impact of inventory and flow planning parameters on supply chain performance: An exploratory study. *International Journal of Production Economics*.
- [6] Thomas C. Jones, D. W. (1985). Using Inventory for Competitive Advantage through Supply Chain Management. *International Journal of Physical Distribution & Materials Management*.
- [7] Yan Dong, K. X. (2002). A supply chain model of vendor managed inventory Author. *Transportation Research Part E: Logistics and Transportation Review*.