International Journal of Advanced Research in Commerce, Management & Social Science (IJARCMSS)
ISSN : 2581-7930, Impact Factor : 5.260 , Volume 03, No. 03, July - September, 2020, pp 162-165

INVENTORY MANAGEMENT: THE NEED OF HIGHER PRODUCTIVITY
(WITH SPECIAL REFERENCE TO STEEL AND IRON INDUSTRY)

Surendra Kumar*

ABSTRACT

Inventory management involves the control of assets being produced for the aim of sale within the normal course of the company's operations. Inventories include raw materials inventory, add process inventory and finished goods inventory. The goal of effective inventory management is to reduce the whole costs direct and indirect that is related to holding inventories. However, the importance of inventory management to the corporate depends upon the extent of investment within the inventory. Steel and Iron Industry in India is on an upswing due to the strong global and domestic demand. India's rapid economic process and soaring demand by sectors like infrastructure, realty, and automobiles, at home and abroad, has put the Indian industry on the world map. Inventory management could be a simple concept-don't have an excessive amount of stock and don't have insufficient. Since there are often a considerable costs involved in staying above and below the optimal range, careful inventory management can make a large difference within the right balance is quite complex and time consuming task without the correct technology. As per the newest report by the International Iron and Steel Institute (IISI), India is that the tenth largest steel producer within the world. The aspire of the study is to look at the inventory management procedure and to differentiate the key factors that collision inventory management practices, explore the proficient and viable inventory management approaches. Inventory management could be a significant area of the developed industry. If the corporate fails to manage inventory, it'll face failure. It's a challenge for the corporate to keep up a good inventory. There are different inventory management techniques available for maintaining a good inventory level within the company. The essential purpose of this text is to revise inventory management techniques employed in the industry and be told some methods for the event of the inventory management process of the concerned company.

Keywords: *Inventory Policy, Efficiency, Effectiveness, Optimization, Inventory Levels, Productivity.*

Introduction

Every organization wishes to maximise its profit by maximizing its production and minimizing the value of production. In Integrated iron and steel industries, cost of Inventory contributes around 70% to 80% of cost of production of atomic number pig iron/Steel and therefore the amount of money incurred on raw materials is on top of the cumulative amount for Men, Machine and other expenses. Therefore, raw materials availability mustn't be interrupted at any cost because it not only adversely affects the assembly, but also malfunction the equipments like refractory of furnace, Coke Oven, SMS Convertor. Now on a daily basis all steel manufacturers face challenges in reducing cost on the opposite hand cost of Raw materials raised 4- 5 times in last 5 yrs. Additionally, there's an eternal fluctuation in Steel market

* LLB, Research Scholar, Department of Applied Economics & Commerce, Magadh University, Bodh Gaya, Bihar, India.

Demand, which increases the problem for the steel manufacturer to match the raw materials requirements in terms of right quantity, right time without compromising the standard at the most affordable price. Therefore, staple Inventory management is that the most feasible area that may offer opportunities for reduction of cost and improvement of profits by matching Supply and demand by the feeding of raw materials into the assembly process with minimum chemical and physical variation and with minimum cost of capital. To attain this, a corporation must identify the fluctuation of demand and determine Inventory management system to retort such fluctuation of demand and improve coordination between supply chain activities.

Words about Steel and Iron Industry

Steel is flexible and indispensable item. Iron and steel comprises one among the foremost important inputs in all sources of economy. The economy of any nation depends on a powerful iron and industry therein nation history has shown that countries having a robust potentiality for iron steel products have played a predominant role within the advancement of civilization within the world. The good investment that has gone in to the basic research in iron and industry has helped both directly and indirectly many modern fields of today's science and technology. The ascent and development of steel capacity is indeed a logical corollary of any program of rapid industrialization. It backward and forward linkages, which makes steel indispensible. The vital role, which industry play within the growth and development of nation's economy, is undeniable. The important of steel in economic activities can't be overemphasized. Besides, steel provides large employment directly and it acknowledgement that for each direct steel employee, 15 thousand opportunities are indirectly within the linkage industries. Steel, and Iron a core sector industry, emerged because the backbone for industrialization in most of the countries. The index for steel and Iron production and for capita consumption of steel in a country has becoming measuring scales of economic process and reconstruction of a nation. Steel occupies strategies position in efforts to achieve a solid and self sufficient industry base. In spite of the iron and industry being a capital, labor energy intensive industry, subjected to rapid, up-predations the astonishing fact is that, 85% of the metals produced within the world, is accounted by steel alone. Hence, steel is identified as a world industry, with global concentrate on steel making and steel technologies, emphasizing quality, production, and value reductions.

Inventory Management and Productivity

Due to over stock or under stock of inventory, assets of the corporate was blocked and as a result the corporate couldn't procure staple in time. It affected the productivity of the corporate ultimately. The enterprise received 50% amount from the client as advance against each commercial instrument. So, the corporate couldn't pull its normal activities; even they may not give the salary and wages in time. Over stocking for one or two particular inventories like Transformer oil and Silicon steel sheet capital was blocked for purchasing of other inventories like super enameled copper wire, insulated paper etc. So, capital was required at that point and also the authorities couldn't procure goods in time. As a result production was hampered for an extended time. After getting advance they took procurement action and at the identical time gave salary and wages to the workers and labour as that they had no money in fund. Hence a correct inventory management is must for gaining the optimum level of productivity specially just in case of Steel and Iron industry as they are available within the ambit of the Heavy industries and involves huge amount of inventory just even in stuff. Only Proper Inventory management can help such heavy industries in achieving the targeted levels of Productivity. Inventory management includes the subsequent Inventory planning, Financing inventory, and internal control.

- **Inventory Planning:** Inventory planning is the method and procedures the corporate uses to see the quantity of products they ought to wear hand for meeting consumer demand. This planning may involve several steps, reckoning on the company's inventory management system and business operations. The primary step of inventory planning is to estimate future sales. This estimation may be conducted by reviewing historical sales records to determine various sales trends for company products. The subsequent step in inventory planning is to buy the mandatory products for business locations. This process includes selecting the products, style of the displays, receiving or verification methods and reorder system. The key goal of inventory planning is to seek out and maintain the optimum level of inventory. The capital investment in inventories is of major importance all manufacturing enterprises. In summary we are able to say that the target of inventory planning is to take care of inventories keep inventory costs within the lowest range of investment, sufficient to fulfill the assembly, sales, and financial requirements of an enterprise.

- **Financing Inventory:** Finance is the administrative function in a company which has (have) to be done by the management together with the flow of money so the organization will have the means to hold out its objectives satisfactorily and at the identical time meet its obligations as they become due.
- **Inventory Control:** Inventory control is worried with minimizing total cost of inventory. This needs that every step in inventory process is required to be checked with established standards and where deviations occur, actions should be taken immediately. Internal control includes control of physical goods and of the number of fund invested in inventories. A number of the more common areas within which internal control may be applied are Raw materials availability, Finished goods availability, add process, Reorder point, Bottleneck enhancement, Outsourcing.

Inventory Management Methods to Achieve Higher Productivity in Steel and Iron Industry

Various methods although are available to manage the inventory which supports and helps in achieving the very best levels of productivity. However the foremost efficient and effective methods considering the necessity of Steel and Iron Industry being collectively of the Heavy industry are as follows:

- **Lead Time:** Lead time may be a key consideration in inventory planning. So it's important to the plant management that to cut back lead time it's necessary to complete procurement formalities as quickly as possible.
- **Economic Order Quantity (EOQ)**: Determination of the EOQ for ordering is additionally most significant to the management of the plant. EOQ is that level of inventory which minimizes the entire cost related to the inventory management. The plant which doesn't follow the economic order quantity for choosing the scale for order placement pays high total cost or in a word we will say the corporate pays high inventory carrying charge and high ordering cost ultimately.
- **Inventory Purchase Policy:** The extent of inventory is closely associated with inventory purchase policy. The raw materials and production components should be so planned that they're available at the correct time, because delays, in procurement caused by lack of proper planning can delayed production temporarily. The fundamental objective of the purchasing function is to confirm continuity of supply and of maintaining all-time low cost of finished goods.
- **Inventory Control**: Internal control may be a set of policies and operating procedures that are designed to maximise company's use of inventory so on generate the utmost profit. Thus it's designed to maximise company's use of inventory investment without affecting customer satisfaction levels. It's also essential for effective production and financial control. Proper internal control will reduce costs arising from the faults in planning execution or in other inventory functions. There are three methods of controlling the Inventory like physical control, stock verification, and budgetary control.
  - **Physical Control:** It's one amongst the foremost important functions within the inventory management. For physical control of stores, it's essential that material of correct quantity is accessible as and when required with due attention to costs and difficulties for storage. One amongst the fundamental methods of controlling stock by quantity is level control. There are various varieties of stock levels but fundamental among them are maximum, minimum and ordering levels.
  - **Stock verification:** Stock verification could be a process of physical counting, measuring or weighing the whole range of things within the stores and recording the leads to a scientific manner. The physical inventory is typically taken periodically or continuously.
  - **Budgetary Control:** Budget is an estimate. Budgetary control involves setting of standards, comparison between the actual and standards and taking corrective actions if needed. The corporate prepares production, sales and inventory budget on the premise of production target. It appears that sometimes budgets don't seem to be properly followed so budgetary control is required to be done.
- **ABC Analysis:** it's done by counting values and numbers of things to classify inventory. In such classification, inventories are classified into A, B and C groups in step with value. A contains the upper value items, B is medium cost and C is low value items. Controlling is applied such relatively more control for A and comparatively least control for C items. This system of stock control is additionally referred to as stock control in line with value and importance.

- **Perpetual Inventory System:** this method maintains a close daily inventory record throughout the amount for every item stocked. Under this technique, inventory recording includes opening inventory, purchases, issues for production, and endless balance of inventory. The management of the corporate under case study used to control its inventory through perpetual inventory system and through annual physical inventory stock verification system. Actually the management use to take the stock and prepare inventory sheet at the top of each year for accounting purpose.
- **Inventory Turnover Ratio:** The inventory turnover ratio relies on the connection between sales and closing inventory. The turnover ratio is computed by dividing the price of products sold by the average inventory the company holds. It's known that the upper the inventory turnover ratio the greater is that the volume of the business. The lower the turnover the upper is that the risk of loss through price decline and also the changes in demand.

Conclusion

In general it may be inferred that the commercial scenario, in India, is characterized by high cost and low productivity. We predict for that reason the products of Government enterprises (even in case of Steel and Iron) fail to compete within the market and hence industrial development, within the public sectors, isn't gaining momentum. It's clear that in these modern days, the enterprises of public sector aren't following methodology of inventory management. They're still maintaining procurement order on the premise of commercial document, production target and available sources of Material. Thus margin of profit becomes lower, assets wipes out and also the industry gradually become sick. This may be because of lack of proper education and training so, proper training is critical in applying inventory management. Here, we didn't consider the uncertainties in supply and demand because of various causes like social, health and safety, economic and political reasons. Although, during this competitive business arena JIT, Lean Manufacturing, maintaining zero inventory, etc., are the need of the day, and also the authors believe these tools should be tried to follow, but we didn't consider those during this article because the companies has not been following them now.

We would like to mention some recommendations below from the findings:

- Every industry should maintain standardized and tested Inventory planning and control methods to scale back cost and increase gross margin,
- Every Industry should use proper tools of internal control like maintaining the amount of inventory, economic order quantity, etc. and also should keep records of inventory properly on the premise of production target and present stock position, etc.
- Also we are of the opinion that each manufacturing entity should keep close eye on Shortage of fund, Uncertainty of market, State of interchange, Bank loan, etc. Policy of clearing of finished goods should be pursued at any cost, Payment of loan should be made regularly a minimum of by installment.

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