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# The Impact of Inventory Management on Manufacuring Industry

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***ABSTRACT:*** *Inventory is generally considered to comprise in three main areas which are raw materials, work in progress and finished goods. Where these are held and in what quantities, and how they are managed will vary significantly from one organization to another. The activities of inventory management involves are identifying inventory requirements, setting targets, providing replenishment techniques and options, monitoring item usages, reconciling the inventory balances, and reporting inventory status. In order to have clear inventory management, a company should not only focus on logistic management but also on sales and purchase management. Inventory management and control is not only the responsibility of the accounting department and the warehouse, but also the responsibility of the entire organization. Actually, there are many departments involved in the inventory management and control process, such as sales, purchasing, production, logistics and accounting. All these departments must work together in order to achieve effective inventory controls. Inventory includes raw material in progress, finished products, general Suppliers and equipment etc. inventory control may defined as systematic location, storage and Recording of goods in such a way that desired degree of service can be made to the operating shops at minimum ultimate cost. The need for inventory control is to maintain stock of goods and ensure Manufacturing according to the production schedule based on sale requirement and the lowest possible ultimate cost to the customer. Every enterprise needs inventory for smooth running of activities, it serves as link between production and distribution process and there is general time lag between the recognition of a need and its fulfillment. The greater time lag, the higher the requirement for inventory. The unforeseen fluctuation in demand and supply of goods also necessitate the need for inventory as it provides cushion for future price fluctuation. This paper includes the concept of inventory management, nature of inventory management, materials management techniques and inventory accounting.*

***Keywords:*** *Concept and Nature of Inventory Management, Materials Management Techniques, Inventory Accounting, Inventory Control and Its Impact on Cost.*

## I. INTRODUCTION

Inventory management is one of the most important business processes during the operation of a manufacturing company as it relates to purchases, sales and logistic activities. It concerned with the control of stocks throughout the whole supply chain. Inventory control sits at the data level where the day-to-day business is organized. Activities here are data driven and are primarily concerned with short-term planning and recording of events. Inventory control is concerned with maintaining the correct level of stock and recording its movement. It deals mainly with historic data. Inventory is an the goods as raw material in progress, finished products, general Suppliers and equipment etc. inventory control may defined as systematic location, storage and Recording of goods in such away that desired degree of service can be made to the operating shops at minimum ultimate cost. The need for inventory control is to maintain stock of goods and ensure Manufacturing according to the production schedule based on sale requirement and the lowest possible ultimate cost to the customer.

Every enterprise needs inventory for smooth running of activities it serves as link between Production and distribution process there is general time lag between the recognition of a need and Its fulfillment .the greater the time lag, the higher the requirement for inventory. The unforeseen Fluctuation in demand and supply of goods also necessitate the need for inventory as it provides cushion for future price fluctuation. Inventory is generally considered to comprise in three main areas which are raw materials, work in progress and finished goods. Where these are held and in what quantities, and how they are managed will vary significantly from one organization to another. The activities of inventory management involves are identifying inventory requirements, setting targets, providing replenishment techniques and options, monitoring item usages, reconciling the inventory balances, and reporting inventory status. In order to have clear inventory management, a company should not only focus on logistic management but also on sales and purchase management. Inventory management and control is not only the responsibility of the accounting department and the warehouse, but also the responsibility of the entire organization. Actually, there are many departments involved in the inventory management and control process, such as sales, purchasing, production, logistics and accounting. All these departments must work together in order to achieve effective inventory controls.

In this context it is proposed to conduct a study in a repute public sector undertaking covering inventory management's aspect and giving suggestions for implementing any. Encored Engineering is chosen, as it is a central public sector unit of long standing having diversified product portfolio with variety of material inventory having control implications. The study aims to analyze, discuss, conclude and suggest measures for further inventory controls.

**Objectives Of Inventory Management**

1. The most important objective of inventory control is to determine and maintain an optimum level of investment in the inventory.
2. To ensure continuous supply of materials spares and finished goods so that production should not suffer at any time and the customer needs should also be met
3. To avoid both over stocking and under stocking of inventory.
4. To keep material cost under control so that they contribute in reducing cost of production and overall cost.
5. To minimize losses through deterioration, pilferage, wastage, obsolescence and damages.
6. To ensure right quality goods at reasonable prices. Suitable quality standards will ensure proper quality of stocks. The price analysis, the cost analysis and value analysis will ensure optimum cost of acquisition.

## II. NEED FOR STUDY

The investment in inventory is very high in most undertakings engaged in manufacturing, wholesale and retail trade. The amount of investment is sometimes more in inventory than in other assets. In India a study of 29 major industries has revealed that the average cost of material is 64 paisa and the cost of labor and overheads is 36 paisa out of a rupee. About 90% of working capital is invested in inventories. The main reason attributed for loss making is financial indiscipline in managing the resources particularly in inventory management. For an organization, the product profitability is of paramount importance considering standards and budgets. Needless to say, that in this context, inventory management assumes lot of significances. Hence, the inventory management determines and specifies the following factors like what to purchase, where to purchase, how to purchase, from where to purchase, where to store etc. will be critical factor hence forth it becomes a crucial factors to undergo a detailed analysis to find an efficient system of inventory. Hence an attempt has been made to study the inventory management with reference to Encored Engineering.

## III. CONCEPT OF INVENTORY MANAGEMET

There are conflicting of different department heads over the issue of inventory. The finance manager will try to invest less in inventory because for him it is an idle investment, where as production manager will emphasize on acquiring more and more inventory as he does not management is to keep the stocks in a such neither way that neither there is over-stocking or under-stocking. The problem can also be resolved by adoption of JUST IN TIME inventory management's techniques

The overstocking will mean a reduction of liquidity and starving of other production processes, under-stocking on the other hand, will result in stoppage of work. The investments in inventory should be kept within reasonable limits. Every enterprises needs inventory for smooth running of its activities. It serves as a link between production and distribution processes.

There is, generally, a time lag between the recognition of a need and its fulfillment. The greater the time - lag the higher the reconcilement for inventory, the unforeseen fluctuations in demand and supply of goods also necessitate the need for inventory .it also provide a cushion for future price fluctuations.

The investment in inventories constitutes the most significant part of current assets/working capital in most of undertakings. Thus it is very essential to have proper control and management of inventories. The purpose of inventory management is to ensure a variability of materials is confident quality as and when required and also to minimize investment in inventories.

It is necessary for every management to give proper attention to inventory management. A proper planning of purchasing handling, storing and accounting should form a part of inventory management. It will determine.

1. What to purchase?
2. How to purchase?
3. From where to purchase?

**Corporate Finance**

Inventory constitutes value of film's raw materials, work- in progress, used in operation, and finished good. Since inventory value change with price fluctuation it is important to know the method of valuation. There are number of inventory valuation method, the most widely used are first in first out (FIFO) and last in first out (LIFO). Financial statement normally indicate the basis of inventory valuation, generally the lower figure or either cost price or current market price.

**Personal finance:**
List of all assets owned by an individual and values of each, based on the cost, market value, are both. Such inventories are usually for property insurance proposes and are sometimes required with applications for credit

**Securities:**
Net long or short position of a dealer or specialist. Also, securities a bought held by a dealer for later resale

## IV. NATURE OF INVENTORY MANAGEMENT

Inventory includes the following things:

**Raw materials:**

Unfinished goods in the manufacturing of a product. For example a steel maker uses iron or and other metals in the producing steel. Publishing company uses paper and ink creates books, newspapers, and magazines. Raw material is carried on a company's balance sheet as inventory in the current accounts section.

**Work in progress (WIP):**

There letter abbreviation with several meaning as described below, work in progress generally signifies a project that will not be billed in one attempt or even several. Sometimes as WIP list, synonymous with to do list .WIP as asset means the portion of work i.e., complete but no yet billed. WIP is good or goods in various stages of completion. Throughout the plan, including all material that has been reeled for initial processing up to completely processed material pending final inspection and occupation as finished goods.

**Finished goods:**

These are the goods, which are for the consumers. The stock of finished goods provides as buffer between production and marker. The purpose of maintaining inventory is to ensure proper supply of goods to customers. In some concerns the production is under taken on order basis, in these concerns there will be a need for finished good. The need for finished goods inventory will be more when production is undertaken in general without waiting for specific orders.

**Spares:**

Spares also form a part of inventory. The consumption pattern of raw materials, the Stocking policies of spares are different from industry to industry. Some industries like transport will require more spares that the other concerns. The costly spares like engine, maintenances spare etc. are not discovered after use; rather they are read position for further use. All decisions about spare are based on the financial cost of Inventory on such spares and costs that may arise due to their non-availability.

**Consumables:**

These are materials, which are needed to smoothen the process of production. These materials do not enter directly into production but they act as catalysts. Consumables may be classified according to their consumption and critical. Generally, consumable stores do not create any supply problem and from small part of production cost. There can be instance where these materials may account for more value than the raw material. The fuel oil may from a substantial part of the cost.

**Safety stock inventory:**

To avoid customer service problems and the hidden cost of unavailable components, Companies, companies hold safety stock. Safety stock inventory protects uncertainties in demand, lead-time and supply safety stock are desirable when suppliers fail to deliver the desired quality on the specified date with acceptable quality or when manufactured Items have significant amounts of scrap or rework. Safety stock inventory ensure that operations are disrupted when such problems occur, allowing subsequently to continue.

To create safety stock, a firm places an order for delivery is typically needed. The replenishment order therefore arrives ahead of time, giving cushion against uncertainty.

**Cycle inventory:**

The portion of inventory that varies directly with lot size is called inventory. Determining how frequently to order, and in what quantity, is called lot sizing. Two principals apply the lot size, Q, varies directly with the elapsed time (or) cycle time between order every five weeks, the average lot size must be equal to five weeks demand

The longer the time between order for a given item, the grater the cycle inventory must be at the beginning of the interval, the cycle inventory is at its maximum are Q at the end of the interval, just before a new lot arrives, cycle inventory drops to its minimum or zero the average cycle inventory is the average of these two extremes

$$\text{Average cycle inventory} = \frac{Q+0}{2} = \frac{Q}{2}$$

This formula is exact only when the demand rate is constant and uniform. However, it does provide a reasonably good estimate even when demand rates are not constant. Factor other than the demand rates (e.g., scrap losses) also may cause estimating errors when this simple formula is used.

## V. MATERIALS MANAGEMENT TECHNIQUES

**Economic order quantity:**

There are two basics questions relating to materials management:

- What should be the size of the order?
- At what level should the order be placed

To answer the first question the basics economic order quantity model is helpful. If the firm is being raw materials, it has to be purchased for each replenishment. This problem is called order quantity problem and the task of the firm is to; determine the optimum of EOQ.

The determination of the appropriate quantity to be purchased in each lot to replenish stock as a solution to the order quantity problem necessitate resolution goals buying in large quantities implies a higher inventory level which will assure

- Smooth production/sales operations
- Lower ordering or set-up costs

But it will involve higher carrying costs. On the other hand small orders will reduce the carrying costs of inventory by reducing the average material level but the ordering costs would increases as there is a likelihood of interruption the operations due to stock-outs.

A firm should place neither too lame nor too small orders on the basis of trade off between the benefits from the availability of inventory and the cost of carrying.

- To take enough to avail the concessions in purchasing materials.
- Ensuring that the materials of requisite specifications and quality have been received in good conditions.

Determining an optimum material level involves two types of costs:

- Ordering costs and
- Carrying costs

**Orering costs:**

The terms ordering cost is used in case of raw materials and includes the entire costs of acquiring ram materials. They include the costs incurred in following activities: purchase ordering transporting, receiving, inspecting. Ordering costs increase the number if orders; thus more frequently the material is acquired the firm' ordering cost. On the other hand, if the firm maintains large inventory levels, there will be few orders placed and ordering costs will be relatively small. Thus, the ordering costs decrease with increasing size of inventory.

**Carrying costs:**

Costs incurred for maintaining a given level of inventory are carrying costs. They include storage, taxes, insurance, deterioration; obsolescence incurred in recording and providing special facilities such as fencing, lines etc.

Carrying cost vary with inventory size. This behavior is contrary to that of ordering costs, which decline with increase in inventory size. The economic size if the inventory would thus depend in trade-off between costs and ordering costs.

**Ordering and carrying costs trade off:**

The optimum inventory size is commonly referred to as economic order quantity. It is that order size at which annual total costs of ordering and holding are minimum.

To find this formula is:

$$EOQ = (2AO/C)$$

Where,
A = Annual Total Requirement.
O = Ordering Costs.
C = Carrying costs.

**Assumptions of EOQ:**

- The forecast usage/demand for a given period, usually one year, is known
- The usage/demand is even throughout the period.
- Inventory orders can be replenished immediately (there is no delay in placing and receiving orders).
- There are two distinguishable costs associated with inventories: costs of ordering and costs of carrying.

- The cost per order is constant regardless of the size of order.
- The cost of carrying is a fixed percentage of the average value of inventory.

## VI. ANALYSIS OF INVESTMENT IN MATERIAL

It is a major responsibility of the financial manager to over- sees the management of management of material since materials represent investment of the firm, large funds in practice. A decision to determine or change the level of material is an investment decision. The analysis should therefore involve an evaluation of profitability of investment of investment in material. The goal of material policy will maximize the firm, s value. The material policy will maximize the firm, value at a point at which marginal (incremental) return from the investment in material equal the marginal (incremental) cost funds used to finance the investment in material. The cost of funds in the required rate of return to suppliers of funds and it funds and it depends on the risk of the investment opportunity.

**Incremental analysis:**

The investment in material should be analyzed involving the following four steps:

- Estimation of operating profit
- Estimation of investment in material.
- Estimation of rate of return on investment in material.
- Comparison of the rate of return on investment with the cost funds

The incremental analysis should be used to compute the values of the operating profit, investment in inventory, rate and cost of funds. A change in the material policy is desirable if the incremental rate of return exceeds the require rate of return.

**Selective Inventory Control / ABC Analysis**

Usually a firm has to maintain several types of materials. It is not desirable to keep the same degree of control on items. The firm should pay maximum attention to those items where value is the highest. The firm should, therefore classify the materials to identify which items should receive the most effort in controlling. The firm should be selective in its approach to control investment in various types of materials. This analytical approach is called ABC analysis and tends to measure the significance of each item of material in terms of its value. The high value items are classified as 'A items' and would be under the biggest control. 'C items' present relatively least value and would be under simple control. 'B items' fall in between these two categories and reasonable attention of management. The ABC analysis concentrates on important items and is also known as control by importance and exception. As items are classified in the importance of their relative value, this approach is also known as proportional value analysis.

The following are involved in implementing the ABC analysis:

- Classify the items of materials, determining the expected use in units and price per unit for each item.
- Determine the total value of each item by multiplying by expected by its units price.
- Rank the items in accordance with the total value, giving first rank to with highest total value and so on.
- Complete the ratios (percentage) of numbers of units of each item to total units of all items. And the ratio of the total value of each item to total of all items.
- Combine items on the basis of their relative value to form three categories A, B and C.

## VII. INVENTORY ACCOUNTING:

The way in which a company accounts for its inventory can have a dramatic effect on its financial statements. Inventory is a current asset on the balance sheet. Therefore the valuation of inventory directly affects the inventory, total current asset, and total asset balances. Companies intend to sell their inventory, and when they do, it increases cost of goods sold, which is often a significant expense on the income statement. Therefore how a company values its inventory will determine the cost of goods sold amount, which in turn affects gross profit (margin), net income before taxes owed, and ultimately net income.

Its clear, than that a company's inventory valuation approach can cause aripple effect throughout its financial picture. One my think inventory value is relatively simple. For a retailer, inventory item is sold, the inventory should be reduced (credited) accost of goods should be increased (debited) for the amount paid for each inventory them.

This works if a company is operating under the specific identification method. That is, a company knows the cost of every individual item that is sold. This method works well when the amount of inventory a company has is limited and each inventory item is unique. Examples would include car dealership, jewelers, and art galleries.

The specific identification method, however, is cumbersome in situation where accompany owns a great deal of inventory and each inventory item is relatively indistinguishable from each other.

As a result, other inventory valuation methods have been developed. The best known of these are the FIFO (first in first out) and LIFO (last in first out) methods.

**First in first out (FIFO):**

Method accounting inventory whereby, quite literally, the inventory is assumed to be sold in the chronological order in which it was purchased. For example, the following formula is used in computing the cost of goods sold:

Under the FIFO method, inventory costs flow the oldest purchase forward, with beginning inventory as the starting point and ending inventory representing the most recent purchases. The FIFO method contracts with the LIFO or last in, first out method, which is FIFO in reverse. The significance of the difference becomes apparent when inflation or deflation affects inventory priced. In an cost of goods sold figure, and a higher cost of goods sold figure, and a higher gross profit. LIFO, on the other hand, produces a lower ending inventory, a higher cost of goods sold figure, and a lower reported.

**Last in first out (LIFO):**

Method of inventory valuation that assumes merchandise is sold in the order of its receipt, the first price out. Hence cost of sales is based on older dollars ending inventory is reflected at the most recent prices. Assume the following data regarding inventory during the year: LIFO (last – in first out) on the other hand, is an accounting approach that assumes recently acquired items are the first ones sold. Therefore, the inventory that remains is always the oldest inventory; during economic period in which prices are rising this inventory accounting method yields a lower ending inventory, a higher cost of goods sold, a lower gross profit, and a lower taxable income. The LIFO method is preferred by many companies because it has the effect of reducing a company's taxes, thus increasing cash flow. However this attributes of LIFO are only presenting an inflationary environment.

**Average cost method:**

In an average cost method of pricing all materials in stock or so mixed that a Prices are formed. Average cost may be of two types

**Simple average cost:**

In an average cost method of pricing all materials in stock or so mixed that a price based on that average price. Though this is simple method pricing material but particularly this method does not give good result. The total cost of materials is not observed in this method.

**Weighted average method:**

In this method that the total cost of all materials is divided by the total number of items in the stock. The price calculated in this way has not been for issue of materials up to the time a fresh purchase has not been made. After a fresh purchase, the quantity will be added to the earlier balance quantity and material cost will be changed total cost a fresh price is calculated by dividing the changed total cost by the number of units in stock after the purchase. A new price list calculated where even afresh purchase is made.]

**Base stock method:**

In this method some quantity of materials is assumed to be necessary for keeping the concern going. The quantity is not issued unless otherwise there is an emergency. This material which as not issued as is kept in stock is known as base stock...

**Standert price met:**

The issue price of the material is pre determine or estimate in this method. The standard price is based on market condition, uses rate, handling felicities etc., the material are priced at the standard price irrespective of price for various purchases.

## VIII. INVENTORY CONTROL AND ITS IMPACT ON COST

Value wise inventory and consumption analysis are brought out on quarterly basis indication RM: SS, CT, PM are valued at cost. A class items which are 70%, b class item which are valuing 20%, c class items which are valuing 10%of total inventory are brought out for verification of internal audit. C class items are verified by the stores and to ht extent certificate is issued at the year and regarding the correctness. Physical balances are verified with the carded and the differences are intimated to stores and financial analysis wing of the group by the internal audit. FAW of the group verifies the rectification entries the rectification entries i.e., shortage items value are changed off to physical inventory variation and the excess quantities are adjusted in the inventory ledger after obtaining the competent authority's approval.

**Finished Goods**

These are the goods, which are ready for the consumers. The stock of finished goods privies a buffer between production and market.

$$\text{Finished Goods held in Inventory} = \frac{\text{Finished Goods}}{\text{Monthly Consumption}}$$

**Table 1.1:** Monthly Finished Goods held in Inventory

| Particulars | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 |
|---|---|---|---|---|---|---|---|
| Finished Goods | 1059 | 1446 | 651 | 1183 | 946 | 649 | 635 |
| Net Sales | 47002 | 5711 | 89218 | 84177 | 72231 | 65188 | 91790.61 |
| Monthly Consumption | 3917 | 4760 | 7435 | 7015 | 6019 | 5432 | 7649.21 |
| No of monthly Finished goods held in inventory | 0.27 | 0.303 | 0.087 | 0.168 | 0.157 | 0.119 | 0.082 |

From the above Table 1.1 it can be observed that the average finished goods stock held during the period of study is 0.20 months. There is a trend of holding comparable net sales and monthly consumption only in the year 2006-07, in all the other years the monthly consumption inventory of finished goods in fairly constant irrespective of rising {2010-11 to 2011-12} or falling trend {2007- 08 to 2010-11} in net sales of the company.

**Work In Progress**

The work in progress is that stage of stocks, which are in between raw material and finished goods.

$$\text{Work in Progress held in Inventory} = \frac{\text{Work in Progress}}{\text{Monthly Consumption}}$$

**Table 1.2:** Monthly Work-in-Progress held in Inventory

| Particulars | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 |
|---|---|---|---|---|---|---|---|
| Work in Progress | 6193 | 8350 | 3877 | 4260 | 3372 | 3799 | 3233.87 |
| Cost of Production | 55762 | 62381 | 81160 | 73880 | 67710 | 62078 | 73480 |
| Monthly Consumption | 4647 | 5198 | 6763 | 6157 | 5643 | 5173.18 | 6123.33 |
| | 1.33 | 1.61 | 0.57 | 0.69 | 0.6 | 0.73 | 0.52 |

From the above Table 1.2 it can be stated that the corporation held peak WIP during the year 2005 – 2006 and around 0.60 months on an average every year during next 3 years. The work in progress rose asymmetrically in the year 2006-07 raising with the cost of production and falling while the cost of production rose in the year 2007-08. It remained fairly constant during all the rest of the period even while the cost or production rose steeply during the period 2007-08 to 2007-08 and 2010-11 to 2011-12 and when the cost of production fell steeply during the period 2007-08 to 2010-11.

**Sundry Debtors**

Sundry debtors are those people who purchase on credit terms from the company and hence owe money to the company.

$$\text{Debtors held in Inventory} = \frac{\text{Sundry Debtors}}{\text{Monthly Consumption}}$$

**Table 1.3:** Monthly Sundry Debtors held in Inventory

| Particulars | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 |
|---|---|---|---|---|---|---|---|
| Sunday Debtors | 19865 | 16681 | 31344 | 42946 | 36774 | 79468 | 98870.9 |
| Gross Sales | 56875 | 67412 | 100056 | 93455 | 77067 | 70029 | 100590.2 |
| Monthly Consumption | 4740 | 5618 | 8338 | 7788 | 6422 | 5836 | 8383 |
| No of months Debtors held | 4.19 | 2.97 | 3.76 | 5.73 | 5.73 | 13.6 | 16.9 |

From the above Table 1.3 it can be found that the credit Policy of the corporation is one-month credit; however organization has never maintained one-month credit during the study of the project. There is slackness in the debtor collection machinery as it is evidenced by the graph above, which shows the abnormal rise in sundry during the period 2009-10 to 2011-12. The sundry debtors have in fact overshadowed the gross sales during the above period. It calls for urgent corrective measures.

**Working Capital**

The term working capital may be defined as the excess of total current assets over current liabilities

$$\text{Working Capital} = \frac{\text{Gross Working Capital Held}}{\text{Cost of Production}}$$

**Table 1.4:** Working Capital

| Particulars | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 |
|---|---|---|---|---|---|---|---|
| **No. of Months Gross Working Capital held up (a)** | **12559** | **14531** | **10158** | **10710** | **6622** | **7681** | **7314** |
| **Cost of Production (b)** | **4647** | **5198** | **6763** | **6157** | **5643** | **5173.18** | **6123.33** |
| **Working Capital (a/b)** | **2.7** | **2.8** | **1.5** | **1.74** | **1.17** | **1.48** | **1.19** |

From the above Table 1.4 it can be observed that during the period of study the peak working is 2.70 during 2005-06 and reduce year and reached lowest during 2009-10 for 1.17months. Gross working capital has shown a tendency of over stocking in the period 2005-06 to 2007-08. It may be one of the reasons for the cyclically of the cost of production as is evidenced in the above graph of a rise up to 2007-08 and a fall till 2010-11 followed again by arise till 2011-12.

**Inventory Turn Over Ratio**

Inventory turnover ratio measures the number of items a company sells its inventory during the year. A high inventory turnover ratio indicates that the product is selling well. The inventory turnover ratio should be done by inventory categories or by individual products.

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

**Table 1.5:** Inventory Turnover Ratio

| Particulars | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 |
|---|---|---|---|---|---|---|---|
| Sales(a) | **56874.7** | **67411.5** | **100005.6** | **93455.4** | **11066.6** | **70029.3** | **10059.2** |
| Gross profit (b) | **4564.18** | **9937.16** | **17372.6** | **144890.4** | **6927.01** | **6222.8** | **20701.7** |
| Cost of goods sold(a-b=c) | **52310.49** | **57474.49** | **82683.22** | **78965.66** | **70139.75** | **63806.23** | **79888.38** |
| Inventory opening stock(d) | **13035.73** | **12559.82** | **14531.93** | **10158.9** | **10710.86** | **6622.64** | **7681.96** |
| Closing stock (e) | **12559.85** | **14531.93** | **10158.94** | **10710.86** | **6622.64** | **7681.96** | **6855.84** |
| Average inventory (f) (d-e=f) | **12797.7** | **13545.88** | **12345.44** | **10434.9** | **8666.75** | **7152.3** | **7268.9** |
| Inventory Turnover Ratio (c/f) | **4.09** | **4.24** | **6.7** | **7.57** | **8.09** | **8.92** | **10.99** |

From the above Table 1.5 it can be stated that the inventory turnover has increased from 4.09 to 10.09 from the year 2005-06 to 2011-12 which is the indicative of good inventory management despite an obvious cyclicality in sales and cost and of goods sold. The good news has to be tempered with the fact that sundry debtor's management has been poor.

**Findings**

- It is found that the inventory turnover ratio has been increased during the 2011– 2012 which shows a good inventory.
- It is observed that the work in progress turnover ratio has been decreased during the year 2011 – 2012, which shows a bad work in progress.
- It is stated that the percentage of raw materials on cost of production has been increased during the year 2011 – 2012 which is an effective utilization of raw material.
- It is found that the raw materials inventory turnover ratio has decreased during the year 2011 – 2012 which shows that there is no proper utilization of raw material.

**Suggestions**

- Aim of Inventory management should be clearly spelt as 'to keep such a way that neither there is over stocking or under stocking'.
- Organization needs to upgrade of the technology, which in turn increases effective utilization of raw material.
- Debtors which remained un-collected for a long period and who are no longer dealing in the company need to be written off.
- Organization should explore the possibility of switchover to just in Time, kanban [Card Signal] philosophy of inventory management as propagated by TOYOTA Company.

## IX. CONCLUSION

Inventory management is an import function which affects the reliability of stabilized production & profitability of the organization. ENNORE ENGINEERING is a multi product organization catering to different customers based on divergent technologies the inventory procurement for various range of product is quite high. It is observed that there are frequent changes in specification by the customers rendering the already procured inventory either obsolete or non-moving. The percentage of raw material on cost of production is found to high

in year 2007-2008 which indicates organization has an effective utilization of the material inventory, which is showing signs of inconsistency, which trend needs to be reversed. In spite of the above constraints there is reasonably a good control noticed as reflected in the period of holding of inventories and inventory turnover ratio. The sundry debtor collection machinery is slack which needs to be revved up. Work in progress in 2011-12 is contrary to the trend which needs to be investigated. Raw material inventory turnover ratio is not in-sync with total material consumed trends.

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