An Optimal Inventory Control Planning for an Indian Industry: An Analysis

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Abstract

Reducing excess inventory and investing in the right inventories lead to improved customer service, increased inventory turnover, reduced costs and increased profitability. Consider the fact that the typical manufacturing firm spends, on average, 56 percent of revenue to cover the direct cost of purchased goods, with this percentage figure being even higher for the typical wholesaler or retailer. Inventories are indispensable to run the plant efficiently. It helps to maintain both material inputs and the manufactured output at an optimum level of requirement. While inventories are designed to have cushioning to absorb overlapping input and output requirements, there is need to avoid uncalled for investment of capital which will otherwise become available for production purposes. The materials management department is expected to provide operational convenience with a minimum possible investment in inventories. *The solution lies in exercising a selective inventory control and application of inventory control techniques.* In this paper we would discuss the Purchasing Performance and Inventory Control System in a production enterprise owned by Government of India. This study addresses the overall inventory management system followed at one of the units of this organization. The study focuses on understanding and analyzing current inventory system being practiced in the organization. Methodology used in this case study was based on field visits wherein the organization under study was visited on different occasions to know their purchase and inventory management system practically. Personal interviews with professionals as well as those who were involved in the stores and purchase work were carried out. On few occasions, where a personal visit was not possible, telephonic interactions were held with the stores and purchase personnel to enquire about their particular method or system of inventory and purchase. Contents of the research were analyzed. Based on the contents analyzed, summary of observations were drawn and a set of recommendations to improve the system were also made. This study suggests, firstly, that a good data base should be developed to provide the information on existing status of the stock / order information and analysis, the exact location of the item, usage of items, vendor's history, vendor rating report, determination of economic order quantity etc. Secondly, a repeat order policy be introduced with the conditions that if the rates and specifications of the item are same, an order can be repeated within a stipulated period, say, within 6 months or so. As the lead-time is very high at this organization, repeat order may prove fruitful. Purchases through repeat order facilitate immediate purchases for user's satisfaction. A repeat order would ensure timely purchases, which would help avoid production losses. Thirdly, Organization will be benefited by use of an appropriate model to determine Optimal Order Quantity and safety stock. However, as sufficient data was not available, no specific model is being suggested. Once a good data base is created, this exercise can be considered by the organization. Fourthly, a policy of professional management to be evolved in order to place right persons on right jobs to monitor and control purchasing, supply, storage and distribution and transport chain in a better way. Fifthly, all indenters should be advised to certify on the indent itself that indented items will be used within three months from the date of their receipt. This will avoid blocking of capital in unwanted inventories.

Keywords
Optimum level, Inventory Control System, Purchasing Performance

1. Introduction
Effective inventory management is very critical to market success. The most important objective of inventory control is to determine and maintain an optimum level of investment in the inventory. From a financial perspective, inventory control is no small matter. Oftentimes, inventory is the largest asset item on a manufacturer's balance sheet. As a result, there is a lot of management emphasis on keeping inventories

down so they do not consume too much cash. The objectives of inventory reduction and minimization are more easily accomplished with modern inventory management processes that are working effectively. In actual practice the vast majority of manufacturing companies suffer from higher costs and excessive inventories than are necessary. Inventory control problems are usually the result of using poor processes, practices and antiquated support systems. The inventory management process is much more complex than the uninitiated understand. In fact, in many companies the inventory control department is perceived as little more than a clerical function. When this is the case, the fact is the function is probably not very effective. The likely result of this approach to inventory control is lots of material shortages, excessive inventories, high costs and poor customer service. While some inventory investment is necessary and useful, too much of it is harmful. In most companies, resources are limited: money that is used for inventories is also needed for plant improvement, for paying dividends to stock holders, for developing new products and for all other uses a vigorous business has for capital. Excess inventory serves no purpose and simply ties up capital uselessly (Plossl, 1985). Inventory management covers effective management in all its aspects including materials planning, programming and purchasing, inventory control, receiving, warehousing and store keeping, materials handling and disposal of scrape & surplus stores. The importance of materials management can be emphasized in India where the cost of material accounts for nearly 60% of the production / total cost. The facts highlight the importance of the efficient and effective use of materials particularly in the present time of credit squeeze and unstable market conditions.

2. Literature Review

Cynthia Wallin,etal, 2006 in their paper, What is the "right" inventory management approach for a purchased item have asked an important question – i.e. how best to manage inventory of a purchased item that is critical to the firm? In answering this question, they have offered, as a starting point, the decision framework, one that is conceptually derived from anecdotal data – with the hope that it could not only provide some pragmatic guidance as to how to tackle this question but also augmented existing scientific research on this question. Razi and Tarn, 2003 in an applied model for improving inventory management in ERP system, have provided a simple approach to improving inventory management for spare parts in an ERP environment. The model they have employed uses pooled distribution according to similarities in their demand histories and lead times, which is certainly a feasible and practical alternative to complex theoretical distributions. Marcello Braglia,etal 2004, have designed a Multi-attribute classification method for spare parts inventory management. The spare parts inventories management in industrial plants represents a very complex problem due to the difficulties concerning data collection, the number of factors to be considered, and the large amount of the items involved. A new multi-attribute technique to define the "best" strategies of spare inventories management is presented in their method.

Gary P. Mohynihan, etal 1996, had studied the inventory control situation in the Central Storeroom of The University of Alabama and had developed a Decision Support System for Inventory Control wherein the demand for special projects was communicated by all customer groups to the storeroom. The data was then compiled into an aggregate planned demand schedule for each item. Depending upon the schedule, an appropriate ordering scheme was generated by INFORMM (Integrated System For Materials Management). In the case of a material demand based on the item re-order point listing, INFORMM will utilize the item data (e.g., unit cost, item class, annual demand to provide the decision maker with an inventory analysis. The system is divided into five distinct modules. Module 1 contains the INFORMM database. Module 2 provides system utilities, such as the modification of system variables for what-if analysis. Module 3 deals with planned demand i.e. demand due to special projects. Module 4 addresses the unpredictable demand arising from preventive and corrective maintenance activities on campus. This module also deals with single item and grouped item decisions. Module 5 addresses the disposal of excess stock. The system was developed as a stand-alone entity. Later integration with the main frame-based inventory tracking system was planned. Nasiri, et al, 2010 in their study have formulated an integrated model for the location of warehouse, the allocation of retailers to the opened warehouses, and finding the perfect policy for inventory control to managing order quantity and safety stock level. The goal was to select the optimum numbers, locations, capacities of the opening warehouses and inventory policy so that all stochastic customer demands can be satisfied. The model was developed as a non-linear mixed integer programming and solved using Lagrange relaxation and sub-gradient search for the location/allocation module and a procedure for the capacity planning module.

(Saeed, 2008), has used the trend forecasting to determine ordering policy in supply chains by viewing it as a part of the control process for making the supply responsive to demand. Trend forecasting is often used to assess demand — a tracked variable in the control context, which drives supply — a tracking variable. Used in this way, it is often observed to increase instability creating the so-called bullwhip effect. Trend is used on the other hand with reliability to increase stability in controller control, but with the difference that a trend of a tracking variable is used to drive correction. While both processes involve use of trend to determine policies for achieving reliable performance, the outcomes of the former are variable while those of the later can create improvement in control with certainty. Saeed has discussed the similarities and differences between the two processes and has developed guidelines for applying trend forecasting to enhance stability in supply chains.

3. Objective of the Study

The purpose of the present research is to investigate the efficacy and understand the existing practices, problems, and expectations in the application of Materials Management functions in an Indian Industrial Organization. Through this case study I have found out the functioning of this Indian Industrial organization and also highlighted the various problems being faced within the organization. This study addresses the overall inventory management system followed at one of the units of this organization. The study brings out the detailed analysis of inventory management system followed in the above organization, the observations, issues and valuable suggestions.

- This organization is vertically engaged in metal production in India

Design/methodology/approach

A case study method was used in this research. Data were gathered through questionnaire, field visits, direct interviews and telephonic interactions. The analysis was carried out in order to identify the practices and problems in the application of Materials Management functions in this Indian Industrial Organization.

4.0 The Existing Inventory Control Policy at Indian Industry organization:

The following is the current inventory management policy at this organization –

4.1. Stores and Inventory Management

Inventory Storing Policy:

The organization stores around 3 months inventory at its central stores. Issues are made to the sub stores of the consuming departments against their demand.

Storing of Spares Parts Inventory:

The organization maintains spare parts inventory of about 30%. to maintain and run the machine / equipment. The spare parts inventory is divided in three groups as follows:

(i) Running maintenance inventory
(ii) Preventive maintenance inventory
(iii) Over hauling inventory

End User's Requirement:

Site stores / Sub stores besides central stores, are created to meet the day today requirement of shop floor. Central stores make supplies to site stores as per their requirement and site stores issue the material to shop floor people.

Warehouse Policy:

Items have been distributed in different groups centrally (In Central Stores) keeping in mind the requirement of the indenting departments. The six digits and ten digits codification system is followed. All items are codified. Items are stocked nature wise and tagging is done for easy identification. Apart from central store there exist site stores also. The items are issued from central stores to the site stores of the indenting department.

4. 2. Inventory Costing Policy: (Investopedia Staff, (Investopedia.com). June 5, 2002)
For costing the materials Weighted Average method is adopted. This method is quite straight forward, it takes the weighted average of all units available for sale during the accounting period and then uses that average cost to determine the value of cost of goods sold and ending inventory. For example, let's say that a bakery produces 200 loaves of bread on Monday at Rs.1 each, and 200 more on Tuesday at Rs.1.25 each. The Weighted average cost for inventory would be Rs1.125 per unit, calculated as (200 x Rs1 + 200 x Rs1.25) ÷ 400 = Rs.1.125.

4.3. Rate Contract Policy-
Since this organization is engaged in underground and open cast mining, the items that are related to the safety of the workers like leather shoes, helmet cells, Explosives, like drill rods, drilling spares and Automobile spares are covered under rate contract.

4.4. Procurement Cycle:
Figure 1 describes the procurement cycle.

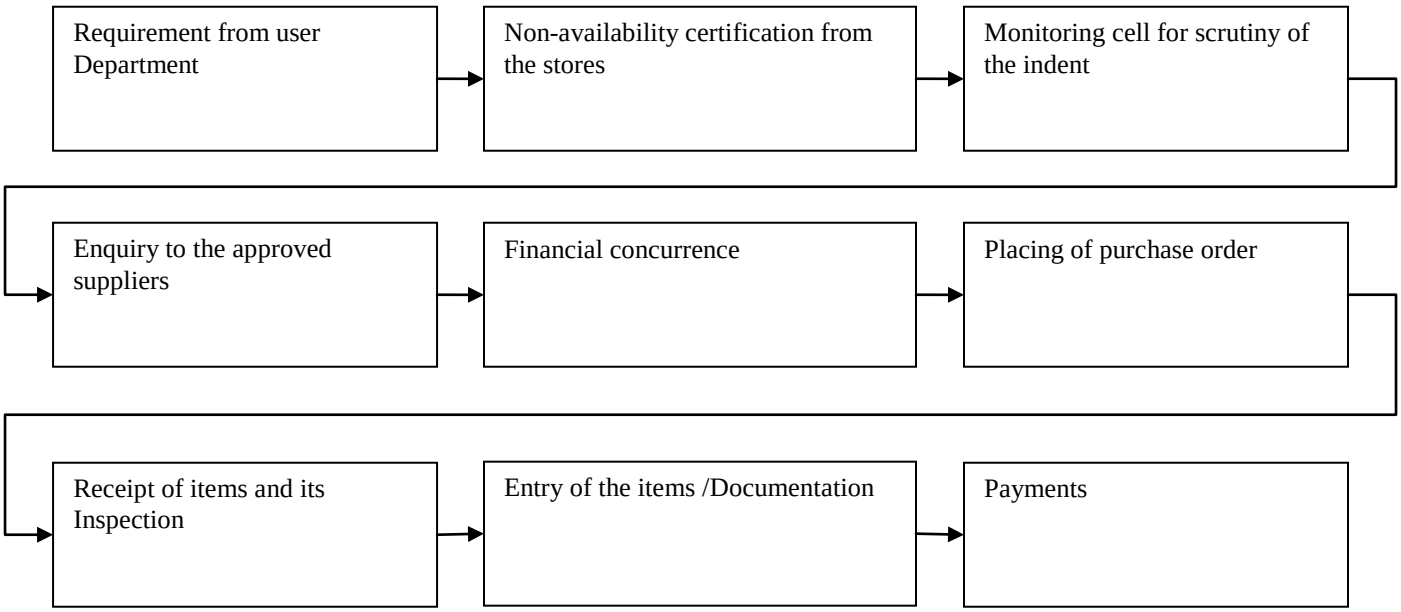

Figure 1: Procurement cycle

From the above schematic diagram, it can be seen that the user raises the indent and takes non availability certification from the stores. The indent is than submitted to the monitoring control cell where the indent is scrutinized. The indent is than passed on to the purchase department for procurement of the item. Purchase department makes an entry in the register and than the enquiry is floated to the approved suppliers. Four types of enquiries are floated depending upon the nature and value of the item. (1) Limited tender enquiry (2) Single tender enquiry (3) Open tender enquiry and (4) Global tender enquiry. Sealed quotations are called from the vendors. Offers are opened on a given date and time by a committee consisting of a purchase officer, a finance officer and one more representative from the purchase department. The vendors are allowed to be present while opening the quotations. A comparative chart is prepared and sent to the indenting department for technical recommendations. Normally, lowest offer is preferred unless it is technically not suitable. After recommendation, the draft supply order is prepared by the purchase department and submitted to the finance department for financial concurrence and subsequent Executive Director's approval. On receipt of the approval of the Executive Director, the purchase order is placed to the firm. On receipt of the material, it is inspected and after the clearance for acceptance of the material is given, entries are made in the receipt book and also in the computers. Receipt voucher is then sent to the finance for making payment

4.5. Inventory Control System

Application of Inventory Control Techniques:-

Automatic indenting is done for 'C' class (general consumable) items. However, for 'A' and 'B' class items, manual reviewing is done on regular basis.

FSN classification is adopted in this organization to control the obsolete items whether spare parts, or raw materials or components. Items are classified as Fast moving, Slow moving and Non-moving – FSN - according to their consumption pattern. Items issued and consumed in the last one year are placed in the Fast moving category, items consumed after a year but within three years are placed in the Slow moving category, and items consumed after three years or not consumed at all are placed in the Non moving category. FSN classification is done at the time of accounts closing. It excludes the insurance items/ equipments.

ABC Analysis:

Every year computer section carries out an ABC analysis for all stock items furnishing the items in descending order of their annual consumption value and classifying them under the following heads:

A Items: Initial 70% of consumption value.

B Items: Following 20% of consumption value.

C Items: Following 10% of consumption value.

To ensure that the inventory level of the stock item is kept at reasonable level, the safety stock of one month is kept in the case of 'A' items, 2 months for 'B' items and 6 months for C items. Normally, annual ordering is done in the case of 'A' items with phased delivery schedule to ensure that minimum level as prescribed above of the safety stock is maintained. In the case of certain 'B' items also the annual ordering is resorted to. The ordering in the case of 'C' items is done on the basis of the indents raised by the computer section. However, there is built in provision for increase or decrease in quantity of consumption especially in the case of 'A' items by regular checks.

4.6. Administrative System

Man power Management:

The Materials department is headed by Assistant General Manager (AGM). Besides AGM, the department has many other officers. Each officer is assigned to procure a particular kind of material. Say for example, one is responsible to procure electrical items; the other is responsible for plant machinery and so on. Besides materials background, few persons from non Materials background too are placed in Stores and Purchase department.

4.7. Cost Reduction and Cost Control:

The measures taken for cost reduction and controlling the purchase costs are as follows:

1. Cost reduction through entering into rate contracts.
2. Cost reduction by cutting consumption after scrutinizing the indenter's requirement by a well-established Inventory Control Cell.
3. Cost reduction by negotiating the rates.

5. Observations

5.1. Ordering and Inventory Management System

Building up of Huge Inventories:

One of the units of this Organization is holding an inventory to the tune of Rs.20 crores (USD 45 Lakhs) approximately. A lot of obsolete inventory, say around Rs.10 crores (USD 22 Lakhs) is lying at central stores of this unit. Non moving inventory to the tune of Rs.8 crores (USD 20 Lakhs) approximately is also lying. This is indeed a serious concern. Blocked inventory results in higher debt and poor working capital resulting in higher financial cost.

End User's dissatisfaction:

Due to financial crunch, the materials department is not able to meet the requirement of the shop floor to their satisfaction. There exists a gap between demand and supply. This obviously leads to production losses. Shop floor and maintenance people seem to feel dissatisfied.

No System for Determination of Order Quantity Based on Inventory Cost:
The objectives of inventory management are to provide the required level of customer service and to reduce the sum of all costs involved. To achieve these objectives, two basic questions must be answered; one, how much should be ordered at one time? And two, when should an order be placed? Management must establish decision rules to answer, how much should be ordered at one time and when should an order be placed? Economic Order Quantity (EOQ) basically answers these questions. The advantages of EOQ are many. However, EOQ is not being followed at this organization. Inventory carrying and inventory ordering costs do not form part of the ordering policy which is likely to result in higher working capital requirement and inventory cost (Arnold and Chapman, 2001).

Ordering System:
More beaurocracy is involved in ordering which results in time delays. The lead-time is very high (for consumable items, 150 days and for spares, 200 days approximately). Material is not made available in time to the consumers. Shop floor and maintenance people seem to feel dissatisfied.

Lack of Control on Lead time:
When a product arrives at the warehouse it inevitably takes several days for it to reach the customer. The approximate lead time to get consumable items at consumer's end is 150 days. For spares, it is 200 days approximately. High lead time results in production hold ups. It is important to recognize that consistency of lead time is more important than its actual length. Even with Material Requirements Planning (MRP) and Just In Time (JIT) technique, event such as stoppage of delivery dates or receipt of defective materials require constant scrutiny to ensure that suppliers maintain consistency. In uncertain conditions it may be necessary to maintain safety stocks (Lysons, 1996) & Tursine (1988).

Segregation of Scrap / Waste materials and their disposal:
In scrap material, many serviceable and valuable parts / components were observed to be overlooked while declaring the material as scrap / waste. The possibility of getting the equipment repaired at the unit workshop or through original manufacturer is also not seriously explored.

5.2. Control System
Inadequate Control on procurement costs:
Controlling purchase cost will lead to profitability. However, methods adopted to control the purchase cost are not found adequate. Cost reduction by purchasing in lot size is not followed. Consolidation of purchases as well as good vendor relationship can assist in cost reduction and better cost management.
Cost price analysis is not done which is very important especially for items which are procured on single quotation basis. Only few items are covered under rate contract.

5.3. Impact of Organizational policy
Performance Implications of Buyer–Seller relationships:
Inordinate delays in payments have affected the Buyer–Seller relationships to a large extent. In many cases, it was found that the suppliers were not paid for the past 6 months to a year. This has resulted in losing many reputed suppliers. The enquiry was floated to many registered suppliers but the response was very poor. As a result, the company was finding it difficult to have competitive rates and the material was being procured on high prices. After getting the order, the vendors do not supply the material in time due to their apprehensions of not getting payments after supply. The purchase department does a lot of correspondence to get the supply in time resulting in waste of man-hours and follow up cost.

5.4. Purchasing Methods and Purchase Cost Management
Repeat Order not in place:
There is no system followed to repeat the earlier order in spite of the rates and specifications of the item being same. As the lead-time is very high (for consumable items, 150 days and for spares, 200 days approximately) at this organization, repeat order may prove fruitful.

Manufacturing cost and Disruption of Production Schedule:
There is mismatch of demand and supply. This may result in higher production cost and loss of production capacity. Inventory carrying and inventory ordering costs do not form part of the ordering policy which is likely to result in higher working capital requirement and inventory cost.

Poor Rate Contract policy:-
Only a limited number of items like Safety items for workers, Explosives and Automobile spares are purchased under rate contract policy. Consumables like tube light, bulbs, computer cartridges and computer consumables, stationary items are not covered under rate contract.

5.5. Administrative Approach
Poor Man Power Management:
Baring few persons like Assistant General Manager (AGM), Chief Manager, and Manager, none of the persons working in the Stores and Purchase department have the materials management degree. Many persons from technical departments are placed in Stores and Purchase department who do not have sound knowledge of materials management.

Man power planning:
Right persons are not placed on right jobs. Many persons from technical departments are placed in Stores and Purchase department who neither have the materials management degree nor have the sound knowledge of materials management and at times are unaware of the right kind of procedures / practices. The function of the Materials management is a specialized one and therefore, it should be carried out by the persons who have the expertise in materials management field. Hence, the materials department must have the persons with specialized back ground.

6. Suggestions
Following suggestions are being made to improve the current system for an optimal inventory control planning.

6.1. Ordering and Inventory Management System
6.1.1. Optimizing Economic Order Quantity:
The quantity to order at a given time must be determined by balancing two factors: (1) the cost of possessing or carrying materials and (2) the cost of acquiring or ordering materials. Purchasing larger quantities may decrease the unit cost of acquisition, but this saving may not be more than offset by the cost of carrying materials in stock for a longer period of time. For achieving this objective, an appropriate Economic Order Quantity system should be followed so that Inventory carrying and Inventory ordering costs are at minimum to avoid higher working capital requirement (Gopalakrishnan and Sandilya (1978).

Traditional literature in inventory management has considered the determination of optimal order quantity taking into consideration various costs.

The well known model for the optimal order quantity (EOQ) is as follows: (Chary, 1988)

$$\text{Q optimal} = \sqrt{\frac{2C_p A}{C_c}}$$

Whereas, 'Cp' is the cost of procurement ordering per order,
'*A*' is annual consumption in units
'Cc' is the cost of carrying an inventory of *one unit* per year

Various other models are also described in the inventory literature. Organization will be benefited by use of an appropriate model to determine Optimal Order Quantity and safety stock. However, as sufficient data was not available, no specific model is being suggested. Once a good data base is created, this exercise can be considered by the organization.

6.1.2. Ordering System:

To avoid more beaureocracy in ordering which results in time delays leading to idleness of man and machines, ordering system should be simplified. This may include computerization of all purchase functions, which would reduce routine clerical activity by the automatic preparation of documents, e.g. purchase requisition, draft purchase orders (DSOs), Purchase orders, acknowledgement forms and progress letters. Strong and productive relationship with the vendors should be developed. Cash purchases for small value items may be introduced. This will result in shorter delivery time as well as purchases can be made at very short notice (Lysons, 1996).

6.2. Control System:

6.2.1. Add Value through Cost Reduction:

Reducing operating expenses and supply costs are essential elements of successful cost reduction plans. The amount of money the business spends on raw production materials directly affects their profit margin. Buying select materials in bulk reduces supply costs and increases productivity by lowering human interaction. Consolidation of purchases as well as good vendor relationship and Vendor development can assist in cost reduction and better cost management. More items should be covered under rate contract. Cost reduction can also be achieved by extensive negotiation with the vendors. (Gopalakrishnan and Sundaresan,1994)

6.3. Organization

6.3.1. Collaborate with Suppliers:

Your vendors are your best allies when implementing cost reduction strategies within your organization. Consider a variety of programs, such as vendor managed inventory systems (VIM), vendor stocking programs (VSP), and common supplier joint procurement policies. Choosing a VSP reduces inventory costs for less popular items and increases supplier reliability and dependency. The organization should develop good relations with mutual interest with its vendors as good vendor relationship can assist in cost reduction and better quality management. When it is difficult to get a scarce item, a supplier for the sake of his good relations, will undertake to supply it and might put himself to inconvenience if need be. The company should ensure that the payments should be made to the suppliers in time. The practice of making payments for so many supplies of a vendor in one go at a later date (say after 6 months or one year) should be avoided. This will not only remove the burden of large amount payments in one time by the company but also enhance the good buyer–seller relations.

6.4. Purchasing and Stores Management Policy

6.4.1. Repeat Order Policy:

A repeat order policy be introduced with the conditions that if the rates and specifications of the item are same, an order can be repeated within a stipulated period, say, within 6 months or so. As the lead-time is very high at this organization, repeat order may prove fruitful. Purchases through repeat order facilitate immediate purchases for user's satisfaction. A repeat order would ensure timely purchases, which would help avoid production losses.

6.4.2. Disposing of Obsolete / Non Moving Inventory:

When inventory goes obsolete, manufacturers face a deadly dilemma: write it off or delay new products until the old products can be sold off, usually at huge discounts. To avoid the huge carrying cost at this unit, the organization must dispose off obsolete and non moving inventory by way of Scheduling a systematic write-off of the inventory. Perhaps spread it out over 3 quarters if possible. Make reserves or provisions each quarter to mitigate the effect. Look at the root cause of the problem. Inventory didn't just become obsolete overnight. Experience shows that large obsolete inventory problems are caused by poor planning. The organization should implement Sales and Operations Planning (S&OP) if not done so. It should consider doing this immediately. They can even use the large write-offs as a justification for implementation. Clearly, they should look for buyers that may be interested in the inventory. They may check with their customers to see if they need any of the inventories at a very steep discount? There may be overseas buyers also for such inventory.

6.4.3. Indenter's Commitment:
All indenters should be advised to certify on the indent itself that indented items will be used within three months from the date of their receipt. This will avoid blocking of capital in unwanted inventories.

6.4.4. Joint Replenishment:
A single vendor might supply multiple items. If multiple items are procured from such vendors, this will save ordering cost and will minimize man-hours and paper work to a great extent. The draw back to this joint replenishment is that some items may be ordered earlier then they are required. Hence, a balanced methodology has to be adopted to make joint replenishment more cost effective.

6.5. Human Resource Approach
6.5.1. **HR Strategic planning:**
There is need to evolve a policy of professional management in order to place right persons on right jobs. Persons without specialized back ground at times are unaware of the right kind of procedures / practices and as a result may add up to procurement cost and litigation in some cases. Hence, the materials department must have the persons with specialized background. They should have the degree / diploma in materials management. From the current policy of the generalized pool of manpower, a specialized function based well trained manpower management is needed. Also, a policy of continuous up gradation of skill to keep pace with the changing technology need to be evolved.

6.6. Information System
6.6.1. Development of Good Data Base:
A good data base should be developed which should provide the information on existing status of the stock / order information and analysis, the exact location of the item, usage of items, Vendor's history, Vendor rating report, determination of Economic Order Quantity, status of re-order point, safety stock position, movement of items, out standing and over due orders, value of orders placed in period, value of orders to any one supplier, variations in prices from standards and budgets with price increases related to material and labor indices, ABC classification, stock reports and minimization of inventory. Also, a good database of the usage of items will help in identifying items which can be brought under rate contract.

6.6.2. Computerization of Purchase Functions:
Purchasing is, of course, only a special application of the general benefits that computerization may bring to any function. These include the ability to store and retrieve a great quantity of data, process such data rapidly with high degree of accuracy, eliminate such routine effort and use exception techniques which save time by notifying these variations from plans or standards which require management action. At this unit of organization most of the purchasing work is done manually by the personnel, computerization of all purchasing activities would reduce routine clerical activity by the automatic preparation of documents, e.g. purchase requisition, draft purchase orders (DSOs), orders, acknowledgement forms, progress letters, formalization of procedures, and achieving a streamlining that might not otherwise be contemplated. Therefore, each individual should be provided a Personal Computer to achieve the above objectives. (Lysons, 1996)

7. Conclusion
Due to poor cash flow, the materials department is not getting sufficient budget to procure the required materials. Supply chain is very important for this organization to avoid disturbance in the manufacturing process. However, there exists a gap between demand and supply. As the requirement of the shop floor and maintenance people is not met in time, the production losses are witnessed. Production targets are not achieved. To overcome this problem, it is very important to have a better inventory management system in place. From the above observations and suggestion, we may conclude that if the organization adopts the measure suggested may certainly benefit and improve its current system of inventory management which will ultimately result in the growth of the organization. The study has however been limited to a single organization. To understand the differences as well as cause- effects, a more detailed study for several such organizations will be needed. Such a study can be developed based on the observations made in the current study.

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