

A STUDY ON INVENTORY MANAGEMENT AND CONTROL

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ABSTRACT

This research propose to get exposure in inventory and it is very important to the company. It is to ensure quality in business that control the transaction between the consumer goods. It is important to do proper inventory management and control in the production company. This project is to analyse the inventory control in the leading brake manufacturing company (WABCO INDIA). This study shows the analysis of ABC items in the inventory, SAP, stock policy followed. It deals with entire process carried in inventory department. Also it was found that there no proper demand forecasting by the company it is done only by suppliers and supply materials to the company along with the demand forecasted in SAP. This affecting the production process in the company. It is suggested that to develop communication between the suppliers and properly forecast the demand. This will result in managing inventory and use man-power according to the demand in order to produce more and control the inventory space.

It leads to reduce the inventory of finished products. ABC analysis has shown that the management must have more control on C items than A & B because C class as a highest in number that occupies more space in inventory. This is done through maintaining routine check in orders in SAP, by maintaining proper forecasting it will result reducing the dead stock in inventory.

Key words: - SAP, ABC analysis, Total quality management.

INTRODUCTION

The term stock alludes to the merchandise or materials utilized by a firm with the end goal of generation and deal. It additionally incorporates the things, which are utilized as strong materials to encourage generation.

There are three fundamental sorts of stock: crude materials, work-in-advance and completed merchandise. Crude materials are the things bought by firms for use underway of completed item. Work-in-advance comprises of all things as of now during the time spent creation. These are quite made items. Completed products comprises of those things, which have just been delivered however not yet sold.

Stock constitutes one of the vital things of current resources, which licenses smooth operation of creation and deal procedure of a firm. Stock administration is that part of current resources administration, which is worried about keeping up ideal interest in stock and applying successful control framework in order to limit the aggregate stock cost.

Stock enhancement in production network, ABC investigation is a stock order technique which comprises in partitioning things into three classes, A, B and C: A being the most profitable things, C being the minimum significant ones. This strategy plans to draw directors' consideration on the basic few (A-things) and not on the paltry numerous (C-things).

NEED FOR THE STUDY

Stock is basic for everything to get their assets proficiently and adequately.

Requirement for consider is to execute appropriate determining by the organization and enhance correspondence process between the staffs with offices. To direct ABC examination on the organization stock to decrease the Dead stock and utilization of materials keeping in mind the end goal to deliver an item by appropriate determining of interest.

OBJECTIVES OF THE STUDY

- To analyze the inventory management of this company.
- To analyze the control measures taken by Brake Manufacturing Company on their own terms using on inventory management.
- To analyze the techniques used by the company in inventory management.
- To suggest the suitable technique to the company to have improved control over the inventory.

SCOPE OF THE STUDY

- This study is to find the facts and opinions of inventory management and control at the brake manufacturing plant.
- In accordance with the present trends it aims mainly at finding out the inventory control procedures.
- This study gives the brief information about the inventory management of the leading brake manufacturing company.

LITERATURE REVIEW

Success of any industrial undertaking depends upon the 6 m's

1) Money 2) Manpower 3) Machine 4) Market 5) Material 6) Management

Materials are pivotal importance not less than any other M's. Problems have their root in material affects the efficiency of all men, machine, money & marketing decisions of the firms and thus become the grave concern of management at all levels. If there were too much of material problems like ideal funds lied up in excessive inventory storage and obsolesces difficulties market pressure would

Arise. Thus the importance of inventory management is realized.

A number of studies have been done in the field of inventory management by various researchers. Some of them are given below;

1. Bern at de William year 2008

This study tells that the main focus of inventory management is on transportation and warehousing. The decision taken by management depend s on the traditional method of inventory control models. The traditional method of inventory management is how much useful in these days the author tell about it. He is also saying that the traditional method is not a cost reducing, it is so much expensive. But the managing the inventory is most important work for any manufacturing unit.

2. Jon Schreibfeder 1992

He said that it is easy to turn cash into inventory, the challenge is to turn inventory back into cash. In early 1990's many distributor recognize that they needed help controlling and managing their largest asset inventory. In response to this need several companies developed comprehensive inventory management modules and systems. These new package include many new features designed to help distributors effectively managed

warehouse stock. But after implementing this many distributors do not feel that they have gained control of their inventory.

3. Wolf Bagby, Managing inventory

In this study Mr. W.Bagby explains that by managing the inventory it becomes easier for the organization to meet the profit goals, shorter the cash cycle, avoid inventory shortage, avoid excessive carrying costs for unused inventory, and improve profitability by decreasing cash conversion and adopt JIT system. According to this study companies need to get smart about inventory.

Boosting financial performance is another benefit that comes from better inventory management. Infected large number of manufacturers enjoy savings and better performance by choosing the approach of inventory reduction. For this company needs to maximize the cash flow and profitability and this includes keeping a watchful discerning eye on change in supply and demand? **4. Asfaque Ahmed October 12, 2004**

(Article from master requirement planning and master production scheduling)

He said that most of the manufacturing company vendors have planning and scheduling product which assume either infinite production capacity for calculating quantities of raw material and work in progress (WIP) requirements or infinite quantities of raw material and WIP materials for calculating production capacity. There are many problems with this approach and how to avoid these by making sure that the product you are buying indeed takes into account finite quantities of required materials as well as finite capacities of work centers in your manufacturing facilities.

4. D.Hoopman April 7, 2003

(Article from inventory planning and optimization)

In this article he said that inventory optimization recognize that different industry have different inventory profiles and requirements. Research has indicated that solutions are priced in a large range from tens of thousands of dollars to millions of dollars. In this niche market sector price is definitely not an indicator of the quality of solution, ROI and usability are paramount.

5. Silver, Edward A Dec22, 2002

(Article from production and inventory management journal)

This article considers the context of a population of items for which the assumption underlying the EOQ derivation holds reasonably well. However as is frequently the case in practices there is an aggregate constraint that applies to the population as a whole. Two common forms of constraints are:

The existence of budget to be allocated among the stocks of the items and a purchasing production facility having the capability to process at most a certain number of replenishment per year. Because of the constraint the individual replenishment quantities cannot be selected independently.

6. Charles Atkinson

(A study on inventory management)

In the study by Mr. Charles Atkinson, he explained the inventory management and assessment of inventory levels. As per this study inventory management need to address two issues

Part I. How to optimize average inventory levels.

Part II. How to assess (evaluate) inventory levels.

This study tells about what the manager should do and not to do, and how much amount should be order in one placed orders. Average inventory can be calculated by simplistic method.

Average inventory = beginning inventory + end inv./2

7. Delaunay C, Sahin E, 2007.

A lots of work has been done but now if we want to go ahead we must have good visibility upon this field of research. That is why we are focused on frame work for an exhaustive review on the problem of supply chain management with inventory inaccuracies. The author said that their aim in this work is also to

present the most important criterion that allow a distinction between the different types of managing the inventory.

RESEARCH METHODOLOGY

METHODOLOGY OF THE STUDY

Research is an organized, systematic, data based, critical, objective scientific inquiry into a specific problem, undertaken with the purpose of finding solutions to it. The research provides the needed information that guides managers to make informed decisions to successfully deal with the problem.

Here I am adapting different kinds of methods depending on the natures of the study and information they require.

OBJECTIVES OF THE RESEARCH

- To analyze the inventory management of this company.
- To analyze the entire activities of purchase and stores department.
- To suggest the suitable technique to the company to have improved control over the inventory

TYPE OF DATA

- Primary data- The primary data is collected by personal interviews with officials.
- Secondary data- Articles, annual reports, PDF. Which have already been passed through the analyzing process are the secondary data used.
- Field work- This was under taken individually to collect information regarding the study by visiting following sections.

RESEARCH VARIABLES

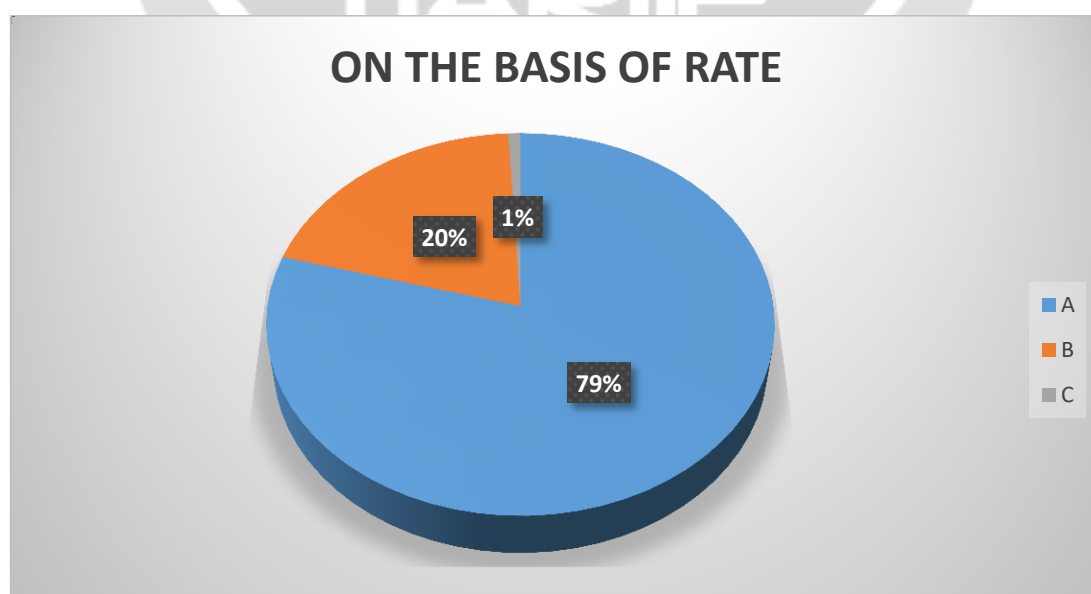
- To find out the cost involved in the entire inventory management process.
- To ensure that the supply of raw material & finished goods will remain continuous so that production process is not halted and demands of customers are duly met.
- To minimize carrying cost of inventory.
- To keep investment in inventory at optimum level.
- To reduce the losses of theft, obsolescence & wastage etc.
- To make arrangement for sale of slow moving items.
- To minimize inventory ordering costs.

LIMITATIONS OF THE RESEARCH

- Time restriction was only 2 months for research in the company.
- The study is related to the only one leading Brake manufacturing company only.
- The finding and suggestion cannot be generalized.
- The study covered a wide concept hence wide collection and coverage of information was not easily possible.

DATA INTERPRETATION AND ANALYSIS**Data Analysis****ABC analysis for the year of 2017**

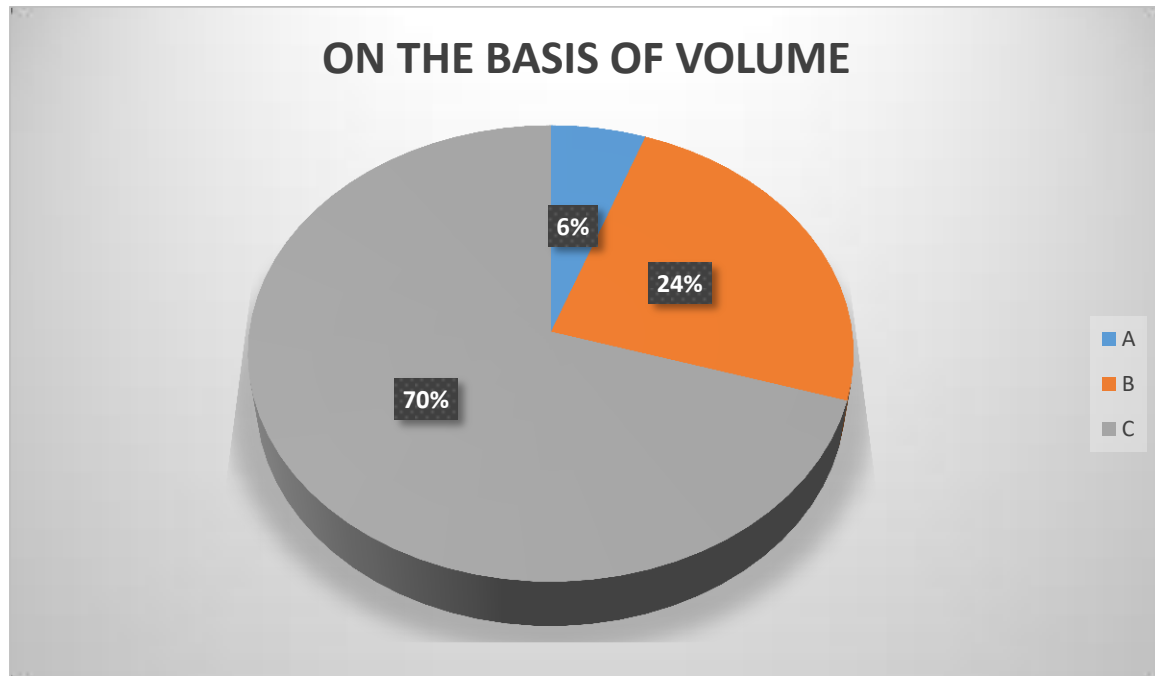
Material code	Description	Val stock	Stock volume	Rate	classification
100138310	crankcase	977,008.52	1061	92.08	A
100312250	Valve (Ref part no:8995000462)	109,524.19	4907	22.31	B
100335540	Spring	28,734.72	3250	8.841	C
100338250	Vent Filter	21,549.85	27628	0.78	C
100340490	Piston	6,425.46	657	9.78	C
100344411	Stem (Ref Part No:4613327704)	107,312.16	11144	9.62	B
100939370	Closure plug	111,910.02	94839	1.18	B
4127046926	Crankshaft-Forging-Volvo 704	570,969.00	1431	39.9	A

Chart no: 4.6

INFERENCE

From the above observation, it is evident that 80% of profits come from 20% of the materials. I.e. crank case and crank shaft provides a value of 50%, which is the highest compared to other parts.

Chart no: 4.7



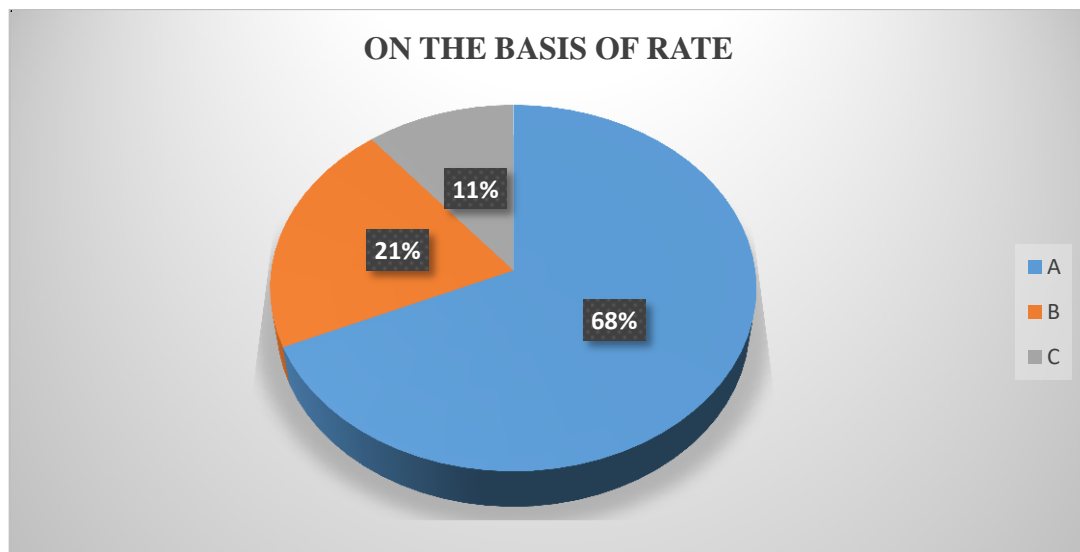
INFERENCE

From the above observation it is visible that 25% of profits comes from 75% of the material.

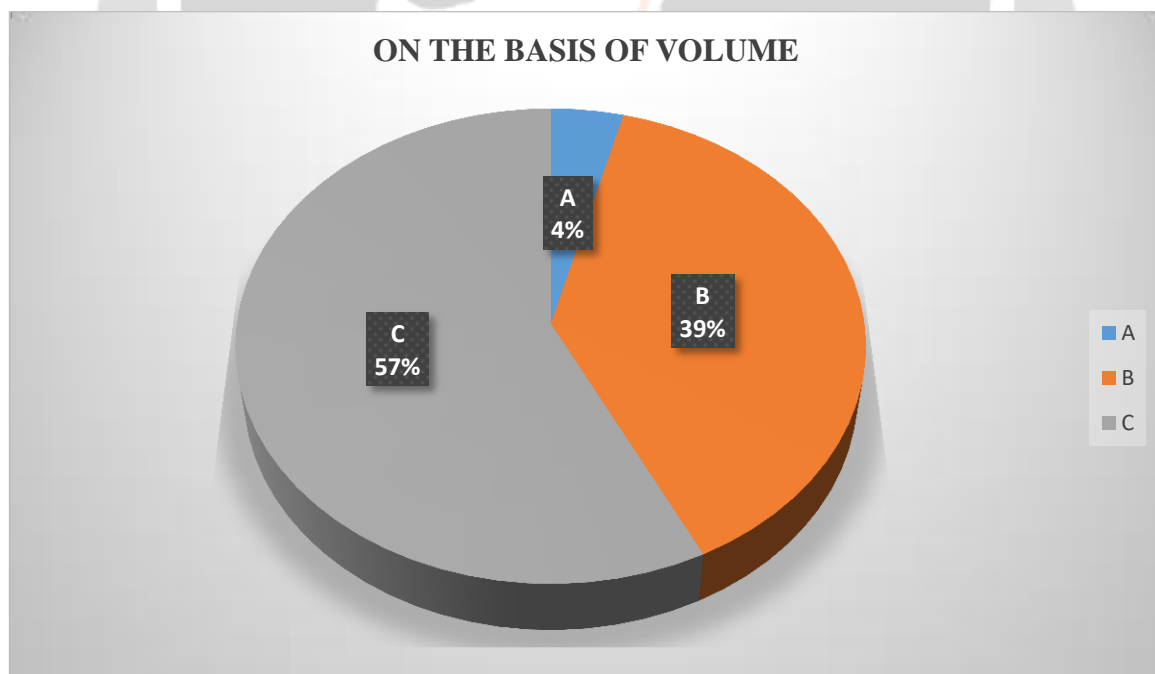
I.e. from the above observation it seems that piston which occupies the space of 75% provides only a profit of 25% which is the highest in volume compared to other parts.

ABC analysis for the year of 2016

Material code	Description	Val stock	Stock volume	Rate	classification
100138310	crankcase	955,008.52	1040	90.08	A
100312250	Valve (Ref part no:8995000462)	119,524.19	4920	24.30	B
100335540	Spring	29,764.72	3350	9.141	C
100338250	Vent Filter	22,579.85	29658	1.55	C
100340490	Piston	6,555.46	6697	9.99	C
100344411	Stem (Ref Part No:4613327704)	187,312.16	17744	12.24	B
100939370	Closure plug	160,910.02	99649	3.124	B
4127046926	Crankshaft-Forging-Volvo 704	590,642.00	1311	40.21	A

Chart no: 4.8**INFERENCE**

From the above observation, it is evident that 80% of profits come from 20% of the materials. I.e. crank case provides a value of 47%, which is the highest compared to other parts.

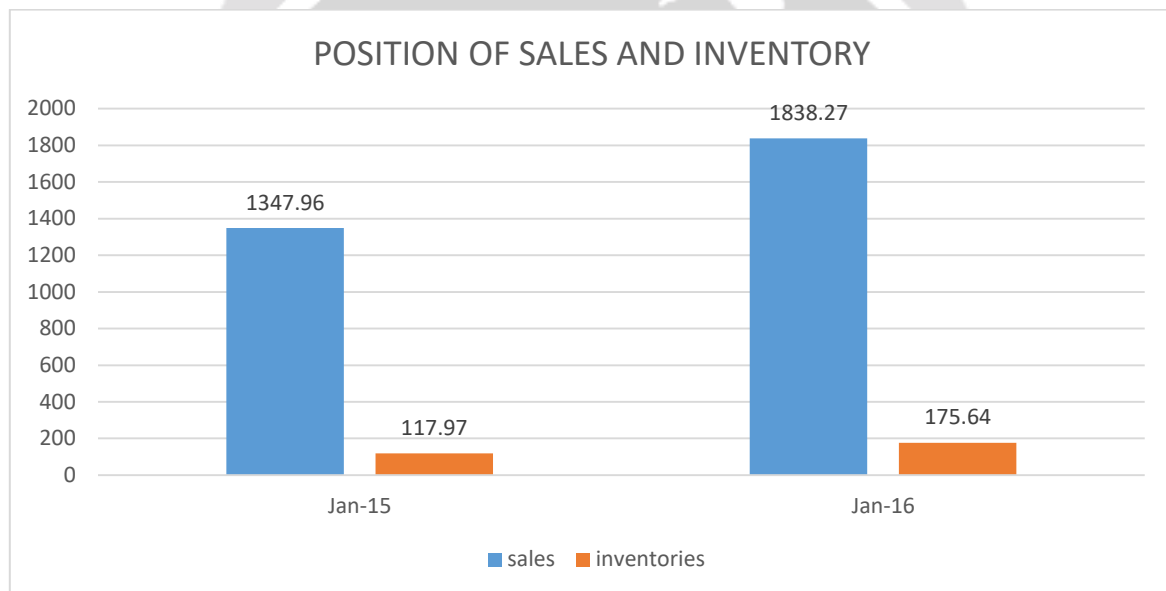
Chart no: 4.9**INFERENCE**

From the above observation, it is visible that 57% of volume consumed from the 43% of the material.

I.e. from the above observation it seems that C which occupies the space of 57% provides only a profit of 40% which is the highest in volume compared to other parts.

POSITION OF SALES AND INVENTORY

YEAR	MARCH 16	MARCH 15	AVERAGE INVENTORY
SALES (IN CRS)	1838.27	1347.96	1593.115
INVENTORIES (IN CRS)	175.64	117.97	146.805

Chart no: 4.10**INFERENCE**

From the above observation, it is evident that there is been an increase of 26% of sales in the year 2016. Which is a found be caused as a result of proper forecasting.

FINDINGS

During the last two years' position of sales and inventory 2015 to 2016. The inventory level increased from 117.97 crores to 175.64 crores. It indicates a growth rate of 26% of sales. But the inventory level has increased to 117.97 to 175.64 crores which was about 28% of the inventory value as maintained in the year March 2016.

ABC Analysis: This firm has to buy more of C Category items rather than AB but at the same time it has to keep a close watch on Focused goods that is high valued goods as it is kept in low volume but a close assistance is given since value of these goods is high.

No proper communication between the staffs.

There is no demand forecasting within the company that makes the inventory to make decision delayed in inventory.

SUGGESTION

Under the ABC analysis, the management must have more control on C items than that on A & B items, because C class constitutes more of higher values. There should not be tight control exercised on stock levels, to avoid deterioration. This is done through maintaining low safety stock levels, continuous check on schedules & ordered frequently in inventories, to avoid over investment of working capital.

Communication between the staff's needed to improve more in order to act as soon as possible during orders.

Company has to update the data in SAP timely.

Necessity in improving communication between staffs with departments.

Not only by suppliers in forecasting demand has company also needed to maintain communication with suppliers in order to know the demand so company can manage inventory and helpful in man power sourcing.

CONCLUSIONS

This study contains proper observation of inventory management in the company. A better inventory management can solve all the problems occur in inventory and helping the company to face the problems by following proper techniques and controlling. This will reduce the huge money investment problems and it will lead the way for avoiding such circumstances.

Inventory is timely changing physical asset which is sold or being a dead stock have by the company. It creates way for the production process if shortage occurs in the production and also it gets more even after the production.

An efficient inventory management can control and make the company to grow more and if in inefficient way it will ruin the company business. Companies are always concentrates on domestic as well as international in order to increase the business globally based on trends.

This study is on leading brake manufacturing company conducting ABC analysis for items predicting the future demands which should be forecasted by the company.

From the study it is shown that buying of materials and shortage occurs due to improper way of forecasting the demand.

ABC analysis is carried to find out the materials which are moves fast and important to the company and which is differs from sales and volume in the inventory.