A STUDY ON INVENTORY MANAGEMENT OF KITCHEN APPLIANCES MANUFACTURING COMPANY IN CHENNAI

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Abstract: Inventory management must be tailored to the demands of the marketplace while also supporting the company's strategic goals. Due to the extreme market fluctuations, new opportunities as a result of global marketing, global sourcing of materials, and new manufacturing technology, many businesses must change their inventory management strategy and inventory control process. This well-known system provides data for effectively managing material flow, maximising the use of people and equipment, coordinating internal operations, and communicating with customers. Inventory management does not make decisions or oversee operations; instead, it provides data to managers who use it to make more precise and timely decisions. The primary goal of this project is to investigate and comprehend the inventory management practises used by a Kitchen Appliances Manufacturer in Chennai. The financial status of the company will aid us in determining the manufacturing sector's performance. This research will also assist you in comprehending the nature of the industry and the types of work that is done in recording the various aspects of inventory control management.

Index Terms – **Inventory management, Technical Analysis, Kitchen Appliances**

I. INTRODUCTION

Inventory management and provide chain management are the backbone of any business operations. With the event of technology and availability of method driven computer code applications, inventory management has undergone revolutionary changes. In any business or organization, all performs are interlinked and connected to every alternative and are typically overlapping. Some key aspects like supply chain management, provision and inventory kind the backbone of the business delivery function. so these functions are extraordinarily important to selling managers similarly as finance controllers. Inventory management may be a vital function that determines the health of the provision chain as well because the impacts the monetary health of the balance sheet. each organization perpetually strives to take care of optimum inventory to be able to meet its needs and avoid over or underneath inventory that may impact the financial figures. Inventory is usually dynamic. Inventory management needs constant and careful analysis of external and internal factors and management through coming up with and review. Most of the organizations have a separate department or job perform referred to as inventory planners who unendingly monitor, control and review inventory and interface with production, procure and finance departments.

II. REVIEW OF LITERATURE

Edwin Sitienei and Florence Memba (2015) Conducted a study on Effect of Inventory Management on profitability of Cement Manufacturing Companies in Kenya. The study concluded that Gross profit margin is negatively correlated with the inventory conversion period

Srinivas Rao Kasisomayajula (2014). The study concluded that all the units in the commercial vehicle industry have significant relationship between Inventory and Sales.

KeahChoon Tan (2014 This research reviews the literature base and development of supply chain management from two separate paths that eventually merged into the modern era of a holistic and strategic approach to operations, materials and logistics management.

Soni (2012) The analysis used a sample of 11 companies for a period five years, that is, 2004–2009 and was done using panel data set. The adequate and timely flow of inventory deter- mines the success of an industry. She concluded that size of inventory enhanced marginally over the period as compared to a hike in current assets and net working capital.

Nyabwanga and Ojera (2012). The study inferred that inventory comprised the maximum portion of working capital, and improper management of working capital was one of the major reasons of SSE failures.

III.   OBJECTIVES OF THE STUDY

i.   Primary objective

Through inventory analysis techniques, learn about the inventory management, strengths and weaknesses of Kitchen Appliances Manufacturer.

ii.   Secondary objective

- To study about the ordering levels for the important components of inventory.
- To understand and measure economic order quantity for the selected raw material items.
- To analyze its inventory management methods with the help of ABC analysis and Trend Analysis..

IV.   SAMPLING TECHNIQUES

The sampling techniques used in this study are,

i.   Trend Analysis

Trend analysis entails collecting data from multiple time periods and plotting it on a horizontal line for further examination. The main objective of this analysis is to identify actionable patterns in the information presented. When using trend analysis to forecast the future, keep in mind that the factors that used to influence a data point may no longer do so as much. This means that extrapolating a historical time series will not always result in a reliable prediction of the future..

ii.   ABC Analysis

ABC analysis is a method of categorizing inventory items based on their consumption values. The total value of an item consumed over a specified time period, such as a year, is referred to as consumption value. The following approach is used in this context and is based on the Pareto principle to help manage what matters:

iii.   Economic Order Quantity

The following formula is used to determine the economic order quantity (EOQ):

$$EOQ = \sqrt{\frac{2 \times D \times Co}{Ch}}$$

Where,

- D = Demand per year
- Co = Cost per order
- Ch = Cost of holding per unit of inventory

VII.   DATA ANALYSIS AND INTERPRETATION

• This study will be of the analytical variety. In analytical research, the researcher must use available facts or information and analyze it in order to make a critical evaluation of the material, as in this project.

1.   TREND ANALYSIS

- RATIO OF INVENTORY TO CURRENT ASSETS

Table 1. Ratio of inventory to current assets

Trend Analysis of Inventory to Current Asset (in lakhs.)			
YEAR	INVENTORY	CURRENT ASSET	RATIO
2015-16	12382.2	40554.99	30.53%
2016-17	10879.94	24045.34	45.25%
2017-18	12513.37	29597.53	42.28%
2018-19	14210.29	28723.91	49.47%
2019-20	17011.36	31296.28	54.36%

Interpretation

From this trend analysis, the ratio of inventory to current asset for the last five years of period is lies between 30% to 50%. And the amount of the inventory is around 100-150 lakhs always.

- INVENTORY TURNOVER RATIO

Table 2 Inventory Turnover Ratio

INVENTORY TURNOVER RATIO (in lakhs.)				
Year	Sales	Inventory	Inventory Turnover Ratio	Storage Period
2015-16	53400.00	12382.2	4.31	62
2016-17	44734.60	10879.94	4.11	45
2017-18	54056.00	12513.37	4.32	60
2018-19	65198.00	14210.29	4.59	52
2019-20	67870.00	17011.36	3.99	49

Interpretation

From this trend analysis, the inventory turnover ratio for the last five years of period is lies between 3.5-4 And the amount of the inventory is around 100-150 lakhs always with the average storage period of 50 days.

- FINISHED GOODS TURNOVER RATIO

Table 3 Finished Goods Turnover Ratio

| FINISHED GOODS TURNOVER RATIO (in lakhs.)				
Year	Sales	Avg. Stock of FG	FG Turnover Ratio	Holding Period
2015-16	53400.00	2932.15	18.21	60
2016-17	44734.60	1989.39	22.49	66
2017-18	54056.00	3078.01	17.56	58
2018-19	65198.00	4547.12	14.34	51
2019-20	67870.00	5042.71	13.46	49

Interpretation

From this trend analysis, the finished goods turnover ratio for the last five years of period is lies between 14-18 and the average stock of the finished goods is always above 2000 lakhs with the holding period of 55 days.

2. *ABC ANALYSIS*

Table 5 ABC analysis

ABC ANALYSIS				
Category	Item	% of the item in inventory	Revenue of the item (in lakhs)	Revenue % of the item
A	LPG,MIXIE	70%	44578.4	80%
B	TTWG,COOKER	20%	9085.6	15%
C	F& B	10%	2630.4	5%

Chart 1. ABC analysis
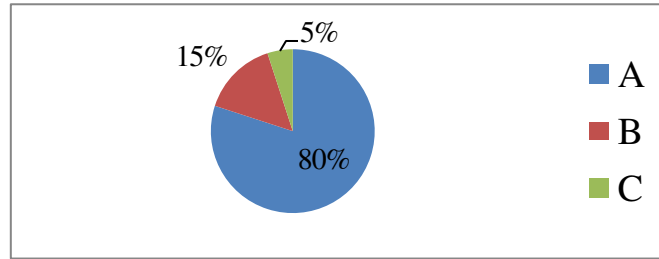
Interpretation

From the above table 5 ,the classification of various components as A,B & C classes using ABC analysis techniques based on unit value. Here, LPG &Mixie are taken as A category which gives more than 80% of revenue, Table Top Wet Grinder taken as B category which gives over 15% of revenue and Flasks and bottles are taken as C category which gives around 5% of revenue to the total revenue of the company.

3.   ECONOMIC ORDER QUANTITY (EOQ)

Table 6 .Economic order quantity (EOQ) of each product

| Components (names are implicit)	Demand Per year	Carrying Cost/order	Ordering Cost/ unit/year	EOQ Unit Per order	No. of order per year
RHINO MG	2400	1010	150	68.93	34.81
DESIRE 1HP MG	6000	222	150	232.49	25.80
CYCLONE MG	6000	655	150	135.35	61
TORNADO MG	6000	1800	150	57.75	103.89
SPLENDID MG	6000	4000	150	54.77	109.66
PEBBLE MG	6000	1300	150	96	63
MATCHLESS MG	6000	700	150	130.93	45.82
JET 750W MG	6000	420	150	169	35.49
IVORY PLUS MG	6000	899	150	115.90	44.77
GRAND PLUS MG	6000	1500	150	89.44	67.08
REFLECT 3B LPG	6000	1000	150	109.54	54.79
ACE DB LPG	6000	445	150	164.21	36.58
GRAND 2B LPG	1800	999	150	60.20	30
RADIANT 2B LPG	1800	885	150	24.64	73.05
GT PRISM 2B LPG	12000	2000	150	109.54	110
RHINO TTWG	12000	5000	150	69.28	173.91

Chart:2. EOQ unit per order
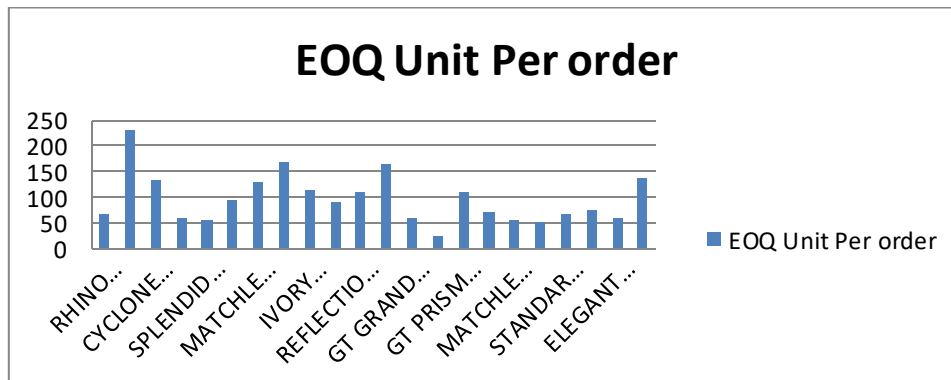
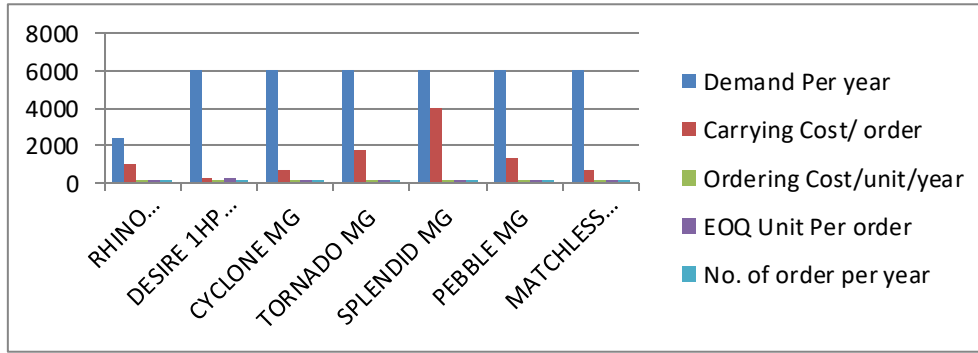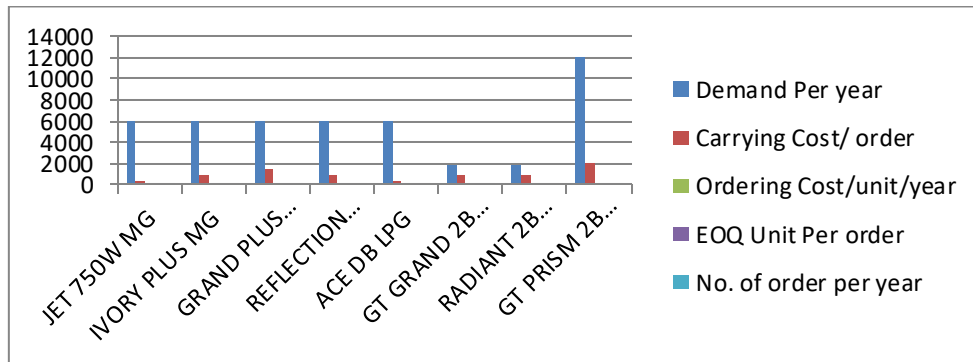Chart 3. EOQ, Demand. carrying cost, ordering cost -1

Chart 4. EOQ, Demand. carrying cost, ordering cost -2

Interpretation

The above table 6 represents the EOQ & the no. of orders purchased per year for various components which are calculated with the requirement of respective component per year. Calculated EOQ is compared with the no. of units of each component purchased in the organization.

The above calculation shows that, there is a variation in the EOQ & no. of unit's purchase which is not economical. Due to which the company is not satisfied and management is not following EOQ technique for purchasing of materials.

VIII. DISCUSSIONS

- It is recommended that in order to have a Total Manufacturing System, a company-wide commitment, proper materials, quality, people, and equipment must always be made available when needed. Furthermore, the policies and procedures developed and implemented for an internal structure must be adaptable. By integrating the production process, suppliers, manufacturers, and customers are transformed into extensions of the manufacturing production process rather than independently isolated processes.
- Under ABC analysis, management should take corrective actions to control items belonging to the 'A class' rather than the B and C classes, because the A class comprises more, i.e., 80 percent of higher values. To avoid deterioration, stock levels should be strictly controlled. This is accomplished by keeping a low safety stock, keeping a constant eye on schedules, and ordering frequently in inventories.
- The company keeps slow-moving items on hand more than fast-moving items, which may cause a chasm between production flows, which is detrimental to the smooth flow of operations. As a result, it is advised to priorities the acquisition of Fast Moving Items.
- The company should update its policies and procedures with the necessary changes and amendments in the method from time to time, and the implementation of such changes in JIT technique should be done effectively, which helps to minimize material waste and increase the company's profit.

IX. CONCLUSION

Inventory control has to do with keeping accurate information of finished goods that are equipped for cargo. This often approach posting the production of newly completed goods to the inventory totals as well as subtracting the maximum recent shipments of completed goods to consumers. when the business enterprise has a go back coverage in vicinity, there is usually a sub-category contained in the completed items stock to account for any returned items which are reclassified or second grade pleasant. as it should be keeping figures at the completed items stock makes it feasible to quick deliver information to sales employees as to what is available and geared up for cargo at any given time. inventory control is critical for maintaining prices

down, even as meeting law. Supply and call for is a sensitive balance, and stock control hopes to make sure that the stability is undisturbed. Exceedingly trained inventory control and efficient software program will help make inventory management a success. The ROI of stock management might be visible inside the kinds of expanded sales and income, positive employee atmosphere, and on ordinary growth of patron delight.

X.   REFERENCES

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