Study and Discussion on ABC Analysis of Stores Material at Manufacturing Organization.

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Abstract - ABC analysis is an important tool used worldwide, for the identification of substances that need great attention in order to be controlled. This research was done on the management of the production organization. Resource management in the production system needs to be in line with its operations and critical indicators to ensure cost reduction related to inventory and service level reductions in production costs and loss of resources. Over the years, many methods and methods have been developed by researchers and model practitioners as well as analysis of types of instrument control systems in the manufacturing sector considering the factors. The following results were observed.
A-class item: 10% of items contribution 54 % of the consumption value.
B-class item: 20% of items contribution 31% of the consumption value.
C-class item: 70% of items contribution 15% of the consumption value.

Key Words: ABC Analysis, Inventory Control, Inventory management, Inventory techniques, Material management.

1.INTRODUCTION

The purpose of this work is to highlight the importance of material management as materials make up a large percentage of the total acquisition cost and contribute to its process. Material control is useful for oversight. These are requirements for the need to learn about the process of material management and its usefulness to the organization. Items are classified according to their use and the cost incurred for obtaining sensitive items that requires strict recognition. The results have shown that using an asset management approach contributes to effective operational mobility, better quality control and waste minimization.

In materials management, ABC analysis is an inventory-based approach. The ABC analysis divides the asset list into three categories— "Items" that are highly regulated with accurate records, "B items" with very poorly controlled and good records, and "C items" with very simple controls and small records.

The ABC analysis provides a mechanism for determining the factors that will have the greatest impact on the cost of the whole asset, while also providing a mechanism for identifying different categories of stock which will require different management and control.

The ABC analysis suggests that the establishment of an organization is not of equal value. Thus, the invention is divided into three categories (A, B, and C) in terms of their relative importance.

'A' item are very important to the organization. Due to the high number of these 'A' items, quantitative analysis is required. In addition, the organization needs to select the appropriate ordering pattern (e.g. 'in-time') to avoid excess capacity. 'B' items are important, but smaller than 'A' items and more important than 'C' items. Therefore, the 'B' objects are the overlapping objects. 'C' objects are historically significant.

This study aims to review the available literature to gain an understanding of the inventory control processes followed by the manufacturing/production organization, and the strategies and factors that affect the success of the inventory control.

There are many different research methods in the field of Inventory management and their strategies. This literature review focuses on the analysis of ABC and alternative strategies with the desired models of control methods used in a different field of programming. In 1978 a book was entitled "The Multidimensional Analysis of ABC Components" was introduced in which the result of the use of multiple ABC analysis methods was provided to distinguish the final list.

The main purpose of this project is to study the integrated approach of Material Management for better management of Inventory. In the day-to-day management of the company, it is important to manage the inventory to maintain timely delivery of the goods. Inventory represents a crucial decision variable altogether stages of production, distribution and sales, additionally to being a serious a part of the present assets of the many organizations. The highest and lowest findings reduce the profitability of the organization.

2. Literature Review

In today's world all businesses are trying to find a balance between what is needed and what is needed, taking into account the great factor of cost reduction / reduction & is called Inventory management or inventory control. Inventories are goods (goods and materials) which are the stock of any business. Inventory management focuses on inventory volume, location of accessibility where needed, inventory management and raw materials. Inventory management is about forecasting, inventory management, inventory carrying costs, forecast, asset pricing, asset verification,

forecasting future demand. This enables a high-quality ship to understand and collaborate with sales managers or product management, as well as quality management.

The Srinivasa Rao Kasisomayajula conducted the study on the inventory management in commercial Vehicle Industry in India. He collected the data from the five companies for the study and he found that all the units in the commercial vehicle industry have significant relationship between inventory and sales. In Robert Lockard 2012 paper shows that in the mid of 1990's the use of computers becomes more efficient and cheaper, by using the inventory management software that could record the data on the scanning of product at in & out time of warehouse. The Gaur & Bhattacharya study shows the link between the performance of the components of inventories such as raw material, work in progress, finished goods and financial performance of Indian manufacturing firms. The Martin et al research said that there will be often a narrow approach towards the spare parts management, focusing on the modeling aspects and neglecting a broader supply chain. In 2008 the Bern at de William focuses on the transportation and warehousing of inventory management. Its shows that the decision taken by the management depends on the traditional method of inventory control method. The Boone et al suggest that the companies often lack a system perspective, suffer the weakness of supply chain relationship and the inaccuracy of demand forecasts. Which will impact the whole supply chain of the system.

The Wagner and Liedermann species that there won't be any deep and lethargic process for the managing of the inventory management which will help the one to solve his problem. According to them there is the gap between the research and the practice in spare parts management. The Cohen et al represent that the managing the high numbers of spare parts, the presence of intermittent or lumpy demand patterns requires the high responsiveness required by the customers due to downtime cost and the risk of stock obsolescence. In the wilsons paper, he said that the almost 33% amount of logistics can be attributed to the cost of holding inventory. Thus, the inventory management research is critical. It's also reflected that the management also suffered by holding the inventory for the more time as usual. The Gallagher et al said that the spare parts inventory needs to be available at appropriate points within the supply chain. The proper arrangement with the availability of the raw material will give the on-time production with the satisfaction and service level. The Eaves and kingsman showed that there will be small improvement in the spare parts management may be translated to substantial cost savings. The proper management and improvement in the stocks will definitely give you the result in the form of saving of money. The Kennedy et al showed and provide the comprehensive account of the state-of-the-art of spare parts inventory management. He provides the easy and operable procedure for the management of the spare parts handling in inventory.

3. Problem Definition

The main purpose of this project is to study the integrated approach of Material Management for better management of Inventory. In the day-to-day management of the company, it is important to manage the inventory to maintain timely delivery of the goods. Inventory represents a crucial decision variable altogether stages of production, distribution and sales, additionally to being a serious a part of the present assets of the many organizations. The highest and lowest findings reduce the profitability of the organization.

4. Methodology

The study was conducted in the inventory stores of the manufacturing organization of a capsule production. Primary data was collected from the stock registers maintained in the stores by making use of the format.

Table -1: Data Table

Sr. No.	Item Code	Parts No.	Unit	Class	Min.Qty.	Max.Qty
01.	SPH	021203	14.NOS	A	10	20
02.	SPH	021237	9.NOS	A	5	25
03.	SPH	021242	8.NOS	A	5	15
04.	SPH	021243	8.NOS	A	1	20
05.	SPH	021244	6.NOS	A	1	20
06.	SPH	030106	1.NOS	A	1	10
07.	SPH	030109	1.NOS	A	1	20
08.	SPH	030193	3.NOS	A	1	10
09.	SPH	030257	2.NOS	A	1	10
10.	SPH	030487	2.NOS	A	1	10
11.	SPH	030567	15.NOS	A	10	30
12.	SPH	040319	30.NOS	A	10	50
13.	SPH	040284	3.NOS	A	1	20
14.	SPH	040314	5.NOS	A	1	10
15.	SPH	040376	30.NOS	A	20	50
16.	SPH	040418	3.NOS	A	1	10
17.	SPH	021182	1.	A	1	10

			NOS			
18.	SPH	040121	2. NOS	A	1	20
19.	SPH	030046	2. NOS	A	1	10
20.	GNP	010027	80. NOS	B	50	100
21.	GNP	011130	31. NOS	A	20	50
22.	GNP	011131	2. NOS	A	1	10
23.	GNP	011132	5. NOS	A	1	10
24.	GNP	011134	10. NOS	A	10	20
25.	GNP	011135	6. NOS	A	1	10
26.	GNP	011137	2. NOS	A	1	10
27.	GNP	010444	180. NOS	B	150	200
28.	GNP	010577	8. NOS	A	1	10
29.	GNP	010636	3. NOS	A	1	10
30.	GNP	010653	7. NOS	A	1	20
31.	GNP	010669	330. NOS	C	100	350
32.	GNP	010959	130. NOS	B	100	150
33.	GNP	011139	22. NOS	A	20	100
34.	GNP	011157	8. NOS	A	1	20
35.	GNP	010726	650. NOS	C	350	700
36.	GNP	011155	3. NOS	A	1	10
37.	QCM	010001	6. NOS	A	1	20
38.	QCM	010014	6. NOS	A	1	10
39.	QCM	010025	64. NOS	B	50	80
40.	QCM	010027	5. NOS	A	1	10
41.	QCM	010036	22. NOS	A	15	40
42.	QCM	010038	35. NOS	A	20	50
43.	QCM	010042	42. NOS	B	30	80
44.	QCM	010063	6. NOS	A	1	20
45.	QCM	010177	5. NOS	A	1	20
46.	QCM	490017	4. NOS	A	1	20
47.	QCM	490026	12. NOS	A	1	20
48.	QCM	490032	3. NOS	A	1	20
49.	QCM	490055	100. NOS	B	80	150
50.	QCM	010155	1. NOS	A	1	10
51.	QCC	010113	2. NOS	A	1	20
52.	QCC	010220	45. NOS	B	1	50
53.	QCC	010025	19. NOS	A	1	30
54.	QCC	010044	14. NOS	A	1	20
55.	QCC	010074	1. NOS	A	1	10
56.	TLS	010008	64. NOS	B	40	80

5. Observation

A-class item: 10% of items contribution 54 % of the consumption value.

B-class item: 20% of items contribution 31% of the consumption value.

C-class item: 70% of items contribution 15% of the consumption value.

Table-2: Distribution Values of Consumption

Sr.No.	Items	Class of Items	% of Item	Value of Consumption	% consumption value
1.	205	A	10	132000	54
2.	410	B	20	75500	31
3.	1445	C	70	37200	15
Total	2060		100	244700	100

Table-3: Control Procedure for ABC Analysis

Control	A-Items	B-Items	C-Items
Control Type & authority	Very Strict	Moderate Control	Low Control
Consumption Control	Regular-weekly or daily	Fortnight or a month	Extended to a quarter
Quality of	Very low &	Low stock &	High safety

Safety Stock	frequent ordering	monthly/Quarterly ordering	stock with half yearly & Yearly ordering
Number of sources to apply	Directly proportional to the no. of source	2 or 4 reliable Sources	1 or 2 reliable sources
Lead time reduction	Max efforts reduce lead time	Moderate efforts	Minimum clerical efforts
Centralized vs Decentralized	Centralized Purchasing	Combined Purchasing	Decentralized Purchasing
Priority	High priority	Moderate if risk then high	Lowest priority
Applications	The concerted attempts require	Moderate attempts require	Annual reviews sufficient

5.1. Advantages of ABC analysis:

1. This approach enables the Materials Manager to selectively control and focus only on a few issues when dealing with multiple factors.
2. By controlling the 'Items' and performing a proper analysis of the expired shares that are automatically displayed.
3. ABC analysis should be reversed, because equal attention to all A, B and C elements will not work and will be too expensive to focus on all things and will have a corrupted effect regardless of priority. of time and energy in development, where development puts a marginal benefit („C" class factors)
4. Emphasizes management concepts from a different perspective.

5.2. Limitations of ABC analysis:

1. ABC analysis, in order to be fully effective, must be done in stand-up and encoding.
2. It does not indicate anything for their benefit or criticality, the value of an item is given on the basis of its usefulness and not on the critical. Such a division may therefore lead to a downward trend in the need to break the segment, which is clearly high but the value of spending is low.
3. ABC analysis should be periodically reviewed so that changes in price, product mix and consumption are taken into account.

6. CONCLUSIONS

The total purchase of the store is almost Rs.22 crores out of which the production/maintenance store amount to Rs.15 crores. It is very difficult for senior management to control costs by focusing on everything.

The ABC analysis helps the managements to achieve more savings by concentrating on the following items.

Scope for further study: A study can be done to calculate the Reorder-level, inventory level of A-class item & economic order quantity.

ACKNOWLEDGEMENT

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BIOGRAPHIES

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