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INVENTORY ANALYSIS AND CLASSIFICATION

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Abstract

One major step in the organization of effective inventory control and the key to a successful control plan is the making of an analysis, tabulation or classification of the characteristics of the articles of inventory. A thorough classification of accounts will foster a sound financial control of inventory by pointing out to the inventory planners those accounts which carry the majority of monetary values. An important point of consideration in the choice of such classification is the analysis of usage.

KEYWORDS:
Adequate, Level, Stock, Analysis, Schedule, Delivery, Key, Items, Periodical, Reviews, Adjust, Open, Techniques, Commitment, Value.

INTRODUCTION

Classification by Usage

An analysis of usage otherwise known as "activity" is most useful if prepared by listing the commodities in the descending money - value activity. It is sometimes called the ABC concept. When this list is totaled in a cumulative fashion, it will indicate at a glance the accounts which control the bulk amount of money in inventory.

A typical of a manufacturing inventory. About ten per cent of the stock accounts for seventy percent of the total money-value invested in inventory; and at the other end, seventy per cent of the items represent only ten percent of the monetary investment; and twenty percent of item also represents twenty per cent of money-value.

We have now indicated by pointing to the values in naira of various categories of inventory, items. The control policies and techniques which will apply to the few items of stores inventory value will be designed for close supervision

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through a continual review of requirements, stock balances and scheduled materials deliveries to maintain a minimum of inventory on these items.

In the automobile and consumer appliances industries, it is a common practice to schedule such commodities in such a way that the factory will utilize the materials as they are being delivered and the only inventory which may exist will be the items in transit from the supplier to the factory of awaiting inspection before they are used.

The seventy per cent of inventory items (classified as c) which carry only Ten per cent of monetary value may be controlled by the maximum and minimum method or by other means which guarantee an economical ordering frequency.

LITERATURE REVIEW

The A. B. C. Concept V

Let us now examine what is meant by A_B.C concept. Fig 5 (Bar chart) for instance is classified into three major categories of stock value analyses. This is what is called the selective technique if
inventory control.

(a) Classification 'A'

Controlling items for inventory investment:

(i) Maintain conservative stock level.

(ii) Constantly review and adjust scheduled open commitments

(b) Classification 'B'

Maintain adequate stock levels with scheduled delivery and periodical reviews of key items.

(c) Classification 'C'

Avoid shortages by maintaining adequate stock levels with low risk due to minimum investment. This classification of accounts by activity is a tool which can be applied to the items of inventory as a whole or to any inventory items in one selected commodity. In either case, an analysis of inventory permits a ledger or vote controller to devote some time to controlling those items which significantly reflect a huge investment in monetary value.

Fundamentals of Order Point and Order Quantity

1. Why Inventory Is Created?

Inventory is created for two major reasons:

(a) To reduce the overall operating costs.

(b) To protect against unpredictable demands.

It is very difficult to separate one of these reasons from the other especially while examining a given stock account. It is however necessary to do so if effective methods of inventory are to be established.

The Economic Function

An inventory of raw materials or bought out parts may be established even if the company concerned can operate without a built-up inventory.

(a) Illustration

Let us assume that XY Company Ltd. manufactures a product whose sales can be predicted for a fairly long period, say, one year - and the finished products which are not sold can be put into stock.

Let us also assume that all the materials needed for manufacture can be brought into the factory daily and routed directly to manufacturing process. If XY company has about 2,000 different items which involve the scheduling of hundreds of in-coming shipments every day, with the attendant paper work, checking inspection etc. XY Co. Ltd. may therefore decide that it is economical to purchase and stock such items in advance of need. This will be accomplished by the creation of a raw material store. This will also result in some additional expenses but in the final analysis, it may be more economical to adopt this system bearing in mind all the management techniques involved in the establishment to an inventory system.

Inventory created in Advance

Inventory will be created in advance of its actual need and may be held, four weeks or months if it will be cheaper to carry that inventory for such a period than to incur the costs of daily or weekly ordering and receiving.

ln Fig. 6 we indicate the rise and tall ot' stock level for a given material whose predictable usage is about 100 pieces per month.

If the economical order quantity of this material is 300 once in three months, the stock controller will place his orders so that each new order will arrive just at the time the stock level is zero resulting in an average inventory of 150 pieces or one and half months' supply.

(c) The Average Active Stock

The average active stock in this hypothetical case is half order quantity, In this example, the inventory is composed of entirely active stock. This means that every piece of stock is turned over during the period between receiving. If we apply this principle to every item in the inventory it will provide a means for forecasting the total inventory which will be one half times the sum of each order quantity.

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The example above is a bit over simplified, In normal circumstances, raw materials must contain an additional segment of inventory which is known as safety stock.

3. The Protection Function or Safety Stock

(a) Illustration

Let us examine another hypothetical case. In this case, Company BZ LTD operates, under the same condition as company XY Limited which we have just discussed. The only significant difference is that BZ Ltd. manufactures a product which can he forecast only to general product lines. This short lead-time does not give sufficient room for the purchase of materials for production. This may 'necessitate the creation of a raw materials inventory so that immediate attention can be given these periodical demands.

The Stock level of each item may, at the initial stage be based UH mere guesses but after a period of time, the usage pattern may give some indication of forecasts which will be nearer to actual.

ORDER QUANTITY: MAXIMUM AND MINIMUM DOCTRINE

Before We consider another important subject - the re-order point - let us have a close look at the doctrine of "maximum and minimum stock level.

1. **Concepts Involved in the System:** This system combines two concepts:
(a) Order quantity.
(b) Order point

It operates as follows: Two arbitrary levels of stock are selected and will be expressed in periodical terms e. g. one week, one month, a quarter. The stock-controllers will be requested to order stocks within the two specific limits.

2. **Assumptions Made:** The following assumptions have been made:
(a) Maximum stock level -3 months supply.
(b) Order Quantity – 2 months supply.
(c) Safety stocks - l months' the supplier's lead-time, half a month.

In order to maintain a stock above one month minimum, the stock controller must re-order before the stock drops below one and half months' usage. The order must arrive when the balance of stock is about one month's supply. He will not order in quantity above two months' supply because the order plus the minimum stock must not exceed three months' supply.

3. **The Advantages of the System:** The advantages of this system are as follows:

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(a) It prevents excessive build up of inventory on a given item because of the three - month maximum.
(b) It provides a level of protection against unusual demands on the stock because of the stock minimum level.
(c) The system is easy to explain to operating personnel.
(d) Actual performance can be checked effectively against the standard.

4. **The Disadvantages of the System:** The disadvantages of this system are as follows:

(a) It is not necessarily the most economical method if costs of processing orders and carrying inventory are considered.
(b) The minimum stock may give either too much or too little protection to specific items.
(c) The system is rather automatic and tends to make purchasing personnel work like robots. A careful consideration must, at times, be given to design changes and usage variances.
(d) Quality discount may be lost because of the restrictions placed on order quantity.
(e) It does not specifically define the order point or the order quality.

CONCLUSION AND RECOMMENDATIONS

The Re-Order Point

1. **Its Meaning:**
   The re-order point is a pre-determined signal which will indicate that the stock controller should consider re-ordering the stock item in question.
2. **Its Selection:**
   The re-order point must be selected at a fairly high figure so that the stock balance will be sufficient to satisfy the maximum number of expected demands on the stock during the intervening period when replenishment stock is being expected. The re-order point is the maximum expected usage during lead time.
3. **Problems Inherent in its selection:** Two basic problems are inherent in the selection of the appropriate order point:
   (a) The lead time can not always be determined with a high degree of accuracy.
   (b) The usage during lead-time cannot also be forecast with dead accuracy.

In exceptional cases where the usage of materials and lead time can be easily determined, the order point can be simply stated as:

Order point = known requirements during lead time.
In fig. 9, the lead time is assumed to be 2 months, the known requirements are 100 units per month. The order point is therefore 200 units.
lf a local supplier can deliver order on a moments notice, The Order point here may be simply zero stock.

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