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# FACULTY OF COMMERCE AND MANAGEMENT

**COURSE: MBA III SEM..**

**SUBJECT: WORKING CAPITAL MANAGEMENT**

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**LECTURE: 21**

**NAME OF FACULTY: DR. PALASH BAIRAGI**

# LECTURE-21

## Scientific Techniques to Inventory Management:

**The major problems comprise the heart of inventory control which are:**

a) The Classification Problem;

b) The Order Quantity Problem (how much to order);

c) The Order Point Problem (when to order); and

d) Safety Stock

**(a) The Classification Problem**:

### ABC Analysis:

This widely-used classification technique recognizes different items of inventory for the purpose of inventory control which is based on the assumption that a firm should not exercise equal attention on all items of inventory since a firm has to maintain various types of inventories.

**It, therefore, should pay maximum attention to those items that are**:

(i) Most costly, and (or)

(ii) Slow moving.

On the contrary, inventories which are less expensive should be given less control effort. Thus, the firm should be selective in its approach towards the inventory control management. This analytical approach is known as ABC Analysis Approach which tends to measure the relative cost significance of each component of inventories.

**According to this system, various items are grouped into three distinct categories:**

**(a) 'A' — Items:**

Which involves the highest/largest-investment and as such, would be under the tightest control, i.e., the most sophisticated inventory control techniques should be applied.

**(b) 'C' — Items:**

Which involves relatively least value and as a result, need not require any special attention and control.

**(c) 'B' — Items:**

Which stands in between items 'A' and 'C'. It desires less attention than A but more attention than C, or, it requires reasonable attention of the management.

Since the above items are classified according to importance of their relative value, it is also known as Proportional Value Analysis (PVA).

**The following table which is presented on the basis of physical quantities and value, will make the principle clear:**

**Illustration:**

Firm X has 7 different items in its inventory. The average number of units in inventory together with their average cost per unit is presented below. Suggest a break-down of the items into ABC classification assuming that the firm wants to introduce ABC Inventory system.

| Items (Nos) | Average number of units of inventory Rs. | Average cost per unit Rs. |
|---|---|---|
| 1 | 10,000 | 110 |
| 2 | 20,000 | 50 |
| 3 | 30,000 | 15 |
| 4 | 25,000 | 10 |
| 5 | 70,000 | 5 |
| 6 | 25,000 | 4 |
| 7 | 20,000 | 2 |
| | 2,00,000 | |

**Solution :**

The ABC Analysis is presented with the help of the following table :

**ABC Analysis**

| Items | Units | % of total | | Unit Cost | Total Cost Rs. | % of total Rs. | |
|---|---|---|---|---|---|---|---|
| 1 | 10,000 | 5 | 15 | 110 | 11,00,000 | 33.43 | 63.82 |
| 2 | 20,000 | 10 | | 50 | 10,00,000 | 30.39 | |
| 3 | 30,000 | 15 | 27.5 | 15 | 4,50,000 | 13.68 | 21.28 |
| 4 | 25,000 | 12.5 | | 10 | 2,50,000 | 7.60 | |
| 5 | 70,000 | 35 | 57.5 | 5 | 3,50,000 | 10,64 | 14.90 |
| 6 | 25,000 | 12.5 | | 4 | 1,00,000 | 3.04 | |
| 7 | 20,000 | 10 | | 2 | 40,000 | 1.22 | |
| | 2,00,000 | 100.00 | | | 32,90,000 | 100.00 | |

No doubt, the ABC analysis is a very useful technique. But it should be used with care for example, an item of inventory may be very inexpensive but at the same time may be very critical to the production process and which may not be easily available.

As such, as per ABC analysis, it would be classified into Item ‘C’ which requires least attention. But because of its special importance to the production process, it deserves special attention of the management.

The above graphic presentation indicates that Item ‘A’ forms a minimum proportion but represents the highest value, viz., 70% of the cost. On the contrary, Item ‘C’ represents 65% of the total units but 10% of the cost. And Item ‘B’ occupies the middle place.

Thus, Item ‘A’ and Item ‘B’ jointly represent 35% of the total units but 90% of the total investment whereas Item ‘C’ forms more than half of the total units against 10% of the total investment. So, the highest control should be exercised on Item ‘A’ for maximizing profitability.