Research Project on Promoting family business

2.4 Production and Inventory: Raw material, Work-in-progress, Finished products

Module outline

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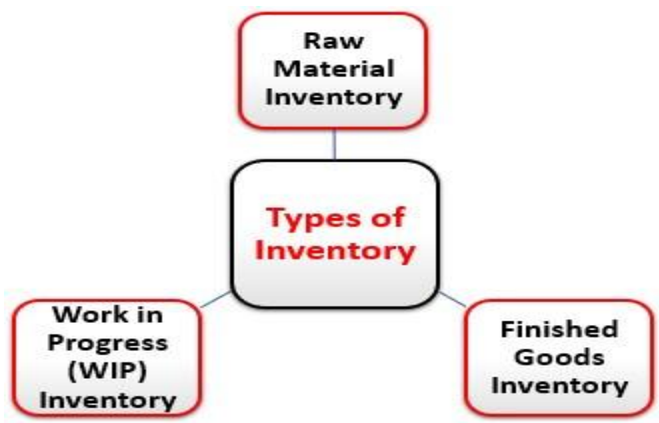
INTRODUCTION

1. **Basic concepts of production and inventory and meaning**

Production refers to a process which involves combined use of tangible (like – raw materials) and intangible inputs (like - various ideas, experience, knowledge etc.) and transformation of these into outputs for satisfying demand of the customer by creating utility.

On the other hand, **inventory** refers to the stocks which are held by a business or businessman for the purpose of earning profits after selling them in the markets. It includes finished goods; which are ready to sell, work in progress and raw materials used to make the products saleable.

2. **Different types of inventory: raw material, work in progress, finished products**

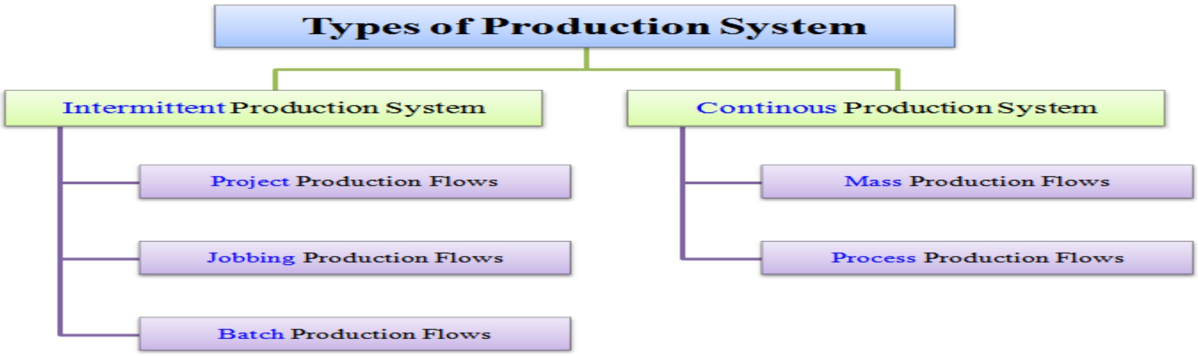


With the given example below it can be explained easily.

In ***kantha stitching works***, colour threads and different piece of cloths are **raw materials**. Semi finished or partly finished designed piece of stitched cloths are **work in progress** and finished **final product** is which is available for sale and complete in all sense.

3. Different types of production: contract, process (tailoring), assembly (jewellery making)

Productions are of three types: primary, secondary and tertiary production. Primary production is carried out by industries depending upon raw materials related to agriculture, fish farming, mining etc. Similarly, secondary production deals with industries carrying out manufacturing and construction activities like – cement, cars, chemicals etc. Lastly, tertiary production includes service sector like– banking service, insurance etc. Production can also be classified as -



Tailoring work, copper wire jewellery and Kantha stitch work normally come under the preview of intermittent or irregular production system.

RAW MATERIALS

1. Preliminary ideas

The resources which are used in producing final outputs and are meant for consumption purpose are termed as raw material. Raw materials are the inputs or resources that a businessman uses to produce its finished products. Simply, this is the unprocessed material like raw copper wire, clothes, or coloured threads which producer use in his or her manufacturing processes to produce finished goods to sell to consumers.

2. Types of Raw materials

Raw materials can be considered into two types like – direct and indirect materials. Direct materials include those resources which are found in the finished products. For example – copper wire used in *copper wired jewellery*. On the other hand, some materials are indirectly used in the production of finished products. Example – sand paper, screws, nuts etc.

3. Need and importance

Thus, raw materials play a key role in manufacturing process. In order to ensure a steady flow in production process, material management is of great importance. To ensure immediate and regular supply of output as and when requisitioned, material availability and monitoring plays a significant role.

4. Managing Raw materials [VED, JIT etc.]

The VED analysis (Vital-Essential-Desirable) helps in understanding the inventory lying in a factory based on three parameters like – whether they are vital or not in the production process i.e. if they are, they require efficient handling, whether they are essential or not i.e. if they are, they must be present in the stock and whether they are desirable or not i.e. if they are, they are not much important to the production process. The Just in Time or JIT inventory management method is also very effective in fulfilling demands of customers with least delay.JIT is an inventory management technique where labour, material and goods (to be used in manufacturing) are planned to arrive exactly when these are needed in the production.

WORK IN PROGRESS

1. **Definition & Concept**

   Raw materials are regularly used in production. Partly processed materials or partly finished products at various stages of the production process are known as Work in progress (**WIP**) inventory. It can't be identified as pure raw materials inventory as well as it can't be considered as final finished products inventory rather it is the stage of production between conversions of the raw materials into finished products.

   Work in progress can also be called in-process inventory.

2. **Difference between work in progress and work in process**

   Work in progress describes the costs of unfinished goods that remain in the manufacturing process while work in process refers to materials that are turned into goods within a short period.

   The terms work in progress and work in process are used interchangeably to refer to products midway through the manufacturing process.Work in process represents partially completed goods. These goods are also referred to as goods-in-process.

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FINISHED PRODUCTS

1. **Basic concepts**

   Products that have completed the manufacturing process but are yet to be sold to customers are called finished products. Simply products which are available for sale in the ordinary course of business are known as finished products.

2. Types of Finished Products

Intermediate goods or Semi-finished goods or partly finished goods are terms that are used interchangeably in the production process. It indicates that a firm may make goods which are used as intermediate goods by other firms or may be buy semi-finished goods and then include them in the manufacturing of their own finished goods.

Example: Copper Wire Jewellery and Tailor made products

Example: Kantha stitch products

3. Valuation and its importance

Inventory valuation is the monetary amount associated with the goods in the inventory at the end of an accounting period. The valuation is based on the costs incurred to acquire the inventory and get it ready for sale.

Inventories are the largest current business assets. Inventory valuation allows one to evaluate the Cost of Goods Sold (COGS) and finally profit of the business. The most widely used methods for valuation are FIFO (first-in, first-out), LIFO (last-in, first-out) and SAC (Simple average cost).

4. **Managing [FSN analysis]**

Fast Moving – Items which are frequently issued from inventory which are more than once for a specific time period

Slow Moving – Items which are less frequently issued which might be once in a specific time period

Non-Moving – Items which are not issued from the inventory at all in a specific time period

FSN Analysis is an inventory management technique which is based on the rate of consumption of goods in an organization. This analysis divides the inventory into three categories based on their speed or rate of utilization, their consumption rate, and average stay.

COST OF INVENTORY

1. **Inventory Cost and its significance**

Inventory Costs:

1. Cost of Product: Actual cost of inventory, thatis the net landed cost or manufacturing cost including freight, taxes etc

2. Cost of Ordering: Some ordering costs are associated for each transaction. This cost includes documentation, follow-up etc

3. Inventory Carrying Cost: Important elements are cost of capital, Insurance premium, Pilferage and Spoilage, Obsolescence and Deterioration and Storage and Handling cost.

Cost of having too much inventory: Having too much inventory may have certain problems. It may impact the working capital. The capital is tied up and it also requires space for storage. Then the maintenance of the inventory, its analysis and reporting becomes an additional activity. Disposal also requires additional manpower in-terms of process and documentation.

Cost of not having enough inventories: In addition to cost of capital (lost opportunity cost) sometimes when enough inventories are not available; orders are rushed to ensure that customer's demands are met. In all the rush, the inventory and its movements are managed very inefficiently.

2. Different methods of inventory valuation [FIFO, LIFO etc.]

The method for valuing inventory depends on how the stock is tracked by the business over time. A business must value inventory at cost. Since inventory is constantly being sold and restocked and its price is continually changing, the business must make a cost flow assumption that it will use frequently.

Methods of inventory valuation:

FIRST-IN, FIRST-OUT (FIFO)

This method is based on the premise that the first inventory purchased is the first to be sold. The remaining assets in inventory are matched to the assets that are most recently purchased or produced.It is one of the most common methods of inventory valuation used by businesses as it is simple and easy to understand.

LAST-IN, FIRST-OUT (LIFO)

Under this method, the assumption is that the newer inventory is sold first while the older inventory remains in stock. This method is hardly used by businesses since the older inventories are rarely sold and gradually lose their value.

SIMPLE AVERAGE COST

Under the simple average cost method, the simple average price of units available in stock is used to determine at the time of material issue. Simple average cost per unit is calculated as follows: different prices in Inventory / no of prices or rates. This is simply known as average price method.

Choosing the right inventory valuation method is important as it has a direct impact on the business's profit margin. A wrong choice can lead to drastic differences in the cost of goods sold, net income and ending inventory. There are advantages and disadvantages of each method.

To assess the method which is best one needs to pay attention to changes in the inventory costs.

- If the inventory costs are escalating or are likely to increase, LIFO costing may be better. As higher cost items are considered sold, it results in higher costs and lower profits.
- In case the inventory costs are falling, FIFO might be the best option
- For a more accurate cost, use the FIFO method of inventory valuation as it assumes the older items that are less costly are the ones sold first.

As an owner of the business it is important to understand the fundamentals of inventory management so that one may be able to manage the materials at different stages of production. This would help the business to reduce any wastage and also in smooth functioning of the business activities.

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