Manufacturing Accounts
Classification of Costs

MANUFACTURING ACCOUNTS

- The following passage is:
- a brief introduction to manufacturing accounts and
- how manufacturing costs are classified.

Classification of Costs

A manufacturing account is prepared to find out:
- the cost of goods manufactured.
- Costs of manufacturing include:
  - all resources used, directly or indirectly, in the manufacture of goods.
  - The manufacturing costs can be classified into direct costs and indirect costs.

Classifications of Costs (2)

What are direct costs?

Direct costs can be identified specifically and exclusively with a given cost objective in an economically feasible way.
**Classification of Costs (2)**

**Direct costs** are those costs directly involved in the manufacture of goods.

Examples of *direct costs* are:
- *direct materials*
- *direct labor* and
- *direct expenses*.

All the direct costs are collectively known as *prime cost*.

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**Classification of Costs (3)**

**Indirect costs** are not directly related to production.

- They are all the remaining production expenses.
- Examples of *indirect costs* include factory rent, factory power, depreciation of plant and machinery, etc.
- Indirect costs are also known as *factory overheads*.

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**Classification of Costs (3)**

- A *manufacturing account* is prepared to find out the cost of goods manufactured. Costs of manufacturing include all resources used directly or indirectly in the manufacture of goods. The manufacturing costs can be classified into direct costs and indirect costs.

- **Direct costs** are those costs directly involved in the manufacture of goods. Examples of direct costs are direct materials, direct labor, and direct expenses. All the direct costs are collectively known as prime cost.

- **Indirect costs** are not directly related to production. They are all the remaining production expenses. Examples of indirect costs include factory rent, factory power, depreciation of plant and machinery, etc. Indirect costs are also known as factory overheads.
What Distinguishes Direct and Indirect Costs?

Managers prefer to classify costs as direct rather than indirect whenever it is “economically feasible” or “cost effective.” Other factors also influence whether a cost is considered direct or indirect. The key is the particular cost objective.

Categories of Manufacturing Costs

Any raw material, labor, or other input used by any organization could, in theory, be identified as a direct or indirect cost depending on the cost objective.

Cost Classifications for Manufacturing Firms

Manufacturing Costs (product costs): all costs associated with the production of goods.

1. Direct Material
2. Direct Labor
3. Manufacturing Overhead/indirect manufacturing

Direct Material Costs...

include the acquisition costs of all materials that are physically identified as a part of the manufactured goods and that may be traced to the manufactured goods in an economically feasible way.
**Direct Labor Costs...**

include the wages of all labor that can be traced specifically and exclusively to the manufactured goods in an economically feasible way.

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**Indirect Manufacturing Costs...**

or *factory overhead*, include all costs associated with the manufacturing process that cannot be traced to the manufactured goods in an economically feasible way.

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**Cost Classifications for Manufacturing Firms**

- **Merchandising Firms (e.g., clothing store)**
  - Buy from suppliers
  - Stock items
  - Sell items to customers

- **Manufacturing Firms (e.g., boat producer)**
  - Buy raw materials
  - Manufacture products
  - Sell items to customers

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**Non-Manufacturing Costs**

Non-manufacturing Costs (period costs): all costs not associated with the production of goods.

1. Selling Costs
2. General and Administrative Costs
Product Costs...

- are costs identified with goods produced or purchased for resale.
- Product costs are initially identified as part of the inventory on hand.
- These costs, inventoriable costs, become expenses (in the form of cost of goods sold) only when the inventory is sold.

Period Costs...

- are costs that are deducted as expenses during the current period without going through an inventory stage.

Period or Product Costs

- In merchandising accounting, insurance, depreciation, and wages are period costs (expenses of the current period).
- In manufacturing accounting, many of these items are related to production activities and thus, as indirect manufacturing, are product costs.

Period Costs – Merchandising and Manufacturing

- In both merchandising and manufacturing accounting, selling and general administrative costs are period costs.
Product and Period Costs

Product Costs and Period Costs are Synonymous with Manufacturing and Nonmanufacturing costs, respectively.

Product Cost Information in Financial Reporting and Decision Making

GAAP (Generally Accepted Accounting Principles) requires that inventory on balance sheets and cost of goods sold on income statements be disclosed (reported) using Full Cost information.

Balance Sheet Presentation of Product Costs

1. Raw Materials Inventory
2. Work in Process Inventory
3. Finished Goods Inventory

Flow of Product Costs in Accounts

Product costs flow from the Direct Materials, Direct Labor and Manufacturing Overhead through Work in Process to Finished Goods Inventory and finally to Cost of Goods Sold.
Flow of Product Costs in Accounts

Income Statement Presentation of Product Costs

When finished goods are sold they are moved from Finished Goods to Cost of Goods Sold.

Cost of Goods Manufactured

Cost of Goods Manufactured includes all costs of goods completed during the period.


Cost of Goods Sold

Cost of Goods Sold:

Types of Costing Systems

Companies use product costing systems to measure and record the cost of manufactured products. Two types:

1. Job-Order Costing System
2. Process Costing System

Overview of Job Costs and Financial Statement Accounts

In a Job-Order Costing System, the three product costs (materials, labor, and overhead) are related to specific jobs.

Relating Product Costs to Jobs

Job Costs and Financial Statement Accounts

<table>
<thead>
<tr>
<th>Work in Process Inventory</th>
<th>Finished Goods Inventory</th>
<th>Cost of Goods Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of jobs being worked on</td>
<td>Cost of jobs completed but not yet sold</td>
<td>Cost of jobs sold</td>
</tr>
</tbody>
</table>
Flow of Costs in a Job-Order Costing System

Job-Order Costing System

In Job-Order Costing Systems the primary document (likely electronic) is called a Job-Cost Sheet. It is used to accumulate or capture the following costs:

1. Direct Material Cost.
2. Direct Labor Cost.

Direct Materials

A Materials Requisition Form is used to request the release of materials from stores inventory into production.
Direct Labor

Time Tickets are used to associate Direct Labor with specific Jobs.

Manufacturing Overhead

Unlike Direct Costs (Direct Materials and Direct Labor) Manufacturing Overhead is indirectly traced (allocated) to jobs using an Overhead Allocation Rate.
Assigning Costs to Jobs: A Summary

Relation Between the Costs of Jobs and the Flow of Costs

Allocating Overhead to Jobs: A Closer Look

Overhead Allocation Rate

1. Overhead Allocation Rates
2. Overhead Allocation Base
3. Activity Based Costing (ABC) and Multiple Overhead Rates

Overhead Allocation Rate = \frac{\text{Overhead Cost}}{\text{Allocation Base}}
### Overhead Allocation Base

Alternative bases include:

1. Direct labor hours
2. Direct labor cost
3. Machine hours
4. Direct material cost.

### Activity-Based Costing (ABC) and Multiple Overhead Rates

ABC is a method of assigning overhead based on a number of different allocation bases (rather than just one). ABC groups overhead costs into Cost Pools.

### Predetermined Overhead Rates

\[
\text{Predetermined Overhead Rate} = \frac{\text{Estimated Total Overhead Cost}}{\text{Estimated Level of Allocation Base}}
\]

### Eliminating Overapplied or Underapplied Overhead

1. Actual costs (Materials, Labor and Overhead) are accumulated in the Manufacturing Overhead Account and
2. Overhead is applied to production based on the Predetermined Overhead Rate.
Eliminating Overapplied or Underapplied Overhead (continued)

1. Unless estimates are perfect, there will be either a debit or credit balance in the Manufacturing Overhead account.
2. If actual > applied, a debit balance, results, thus underapplied overhead.
3. If actual < applied a credit balance, results, thus overapplied overhead.

Eliminating Overapplied or Underapplied Overhead (continued)

1. Manufacturing Overhead should have a zero balance at year-end
2. Often closed it out to Cost of Goods Sold.

Job-Order Costing for Service Companies

1. Job-Order Costing is also used by service companies.
2. Examples include hospitals (patients) and automobile repair firms.

Modern Manufacturing Practices and Product Costing Systems

2. Computer-Controlled Manufacturing.
3. Total Quality Management (TQM).
<table>
<thead>
<tr>
<th>Quick Review Question #1</th>
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<tbody>
<tr>
<td>1. Which of the following is a period cost?</td>
</tr>
<tr>
<td>a. Raw materials costs.</td>
</tr>
<tr>
<td>b. Manufacturing plant maintenance.</td>
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<tr>
<td>c. Wages for production line workers.</td>
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<tr>
<td>d. Salary for the vice president of finance.</td>
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<thead>
<tr>
<th>Quick Review Question #2</th>
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<tbody>
<tr>
<td>2. Which of the following is a direct materials cost?</td>
</tr>
<tr>
<td>a. Steel for a ship builder.</td>
</tr>
<tr>
<td>b. Production supervisor salary for an auto manufacturer.</td>
</tr>
<tr>
<td>c. Factory rent.</td>
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<tr>
<td>d. Pocket protector for company accountant.</td>
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<th>Quick Review Question #3</th>
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<tr>
<td>3. Beginning work-in-process plus total manufacturing costs minus ending work-in-process equals</td>
</tr>
<tr>
<td>a. Cost of materials used.</td>
</tr>
<tr>
<td>b. Finished goods inventory.</td>
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<tr>
<td>c. Cost of goods sold.</td>
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<tr>
<td>d. Cost of goods manufactured.</td>
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<th>Quick Review Question #4</th>
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<tr>
<td>4. Cost of Goods Sold is $200,000, beginning Finished Goods is $50,000, ending Finished Goods is $100,000 and ending Work in Process is $10,000. What is the Cost of Goods Manufactured?</td>
</tr>
<tr>
<td>a. $100,000</td>
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<tr>
<td>b. $250,000</td>
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<td>c. $50,000</td>
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<tr>
<td>d. $150,000</td>
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