CHAPTER 3

PROCESS COSTING

Managerial Accounting, Fourth Edition
Study Objectives

1. Understand who uses process cost systems.
2. Explain the similarities and differences between job order and process cost systems.
3. Explain the flow of costs in a process cost system.
4. Make the journal entries to assign manufacturing costs in a process cost system.
5. Compute equivalent units.
6. Explain the four steps necessary to prepare a production cost report.
7. Prepare a production cost report.
Process cost accounting focuses on the processes involved in mass-producing products that are identical or very similar in nature.

In contrast, job order cost accounting focuses on the individual job.
Process Costing

Nature of Process Cost Systems
- Uses
- Similarities and differences
- Process cost flow
- Assigning manufacturing costs

Equivalent Units
- Weighted-average method
- Refinements
- Production cost report

Comprehensive Example of Process Costing
- Physical units
- Equivalent units of production
- Unit production costs
- Cost reconciliation schedule
- Production cost report
- Costing systems – Final comments

Chapter 3-6
Nature of Process Cost Systems

- Use to apply costs to similar products that are mass produced in a continuous fashion.
- Examples include the production of Ice Cream, Cereal, Paint, and Soft Drinks.
- Once started, production continues until product is completed; processing is the same for the entire run.

LO 1: Understand who uses process cost systems.
## Comparison of Products Produced Under Process and Job Order Cost Systems

<table>
<thead>
<tr>
<th>Process Cost System Company</th>
<th>Product</th>
<th>Job Order Cost System Company</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coca-Cola, PepsiCo</td>
<td>Soft drinks</td>
<td>Young &amp; Rubicam, J. Walter Thompson</td>
<td>Advertising</td>
</tr>
<tr>
<td>ExxonMobil, Royal Dutch Shell</td>
<td>Oil</td>
<td>Walt Disney, Warner Brothers</td>
<td>Motion pictures</td>
</tr>
<tr>
<td>Intel, Advanced Micro Devices</td>
<td>Computer chips</td>
<td>Center Ice Consultants, Ice Pro</td>
<td>Ice rinks</td>
</tr>
<tr>
<td>Dow Chemical, DuPont</td>
<td>Chemicals</td>
<td>Kaiser, Mayo Clinic</td>
<td>Patient health care</td>
</tr>
</tbody>
</table>

**LO 1:** Understand who uses process cost systems.
Let’s Review

Which of the following items is **not** a characteristic of a process cost system?

- a. Once production begins, it continues until the finished product emerges.
- b. The focus is on continually producing homogenous products.
- c. When the finished product emerges, all units have precisely the same amount of materials, labor, and overhead.
- d. The products produced are heterogenous in nature.

LO 1: Understand who uses process cost systems.
Job Order Cost Systems

- Costs are assigned to each job.

- Products have unique characteristics.

Process Cost Systems

- Costs are tracked through a series of connected manufacturing processes or departments.

- Products are uniform or relatively homogeneous and produced in a large volume.

LO 2: Explain the similarities and differences between job order cost and process cost systems.
LO 2: Explain the similarities and differences between job order cost and process cost systems.
Similarities and Differences in Cost Systems

Similarities

- Both costing systems track the three manufacturing cost elements: direct materials, direct labor, and manufacturing overhead.

- The accumulation of costs is the same in both systems.

- Flow of costs are assigned to the same general ledger accounts in both costing systems.

However, the methods of assigning the costs differ significantly.

LO 2: Explain the similarities and differences between job order cost and process cost systems.
Similarities and Differences in Cost Systems

Differences

- The number of work in process accounts
  - Job Order - uses only one work in process account
  - Process - uses multiple work in process accounts

- Documents used to track costs
  - Job Order - charges to individual jobs and summarizes on job cost sheets
  - Process - summarizes in production cost reports for each department

LO 2: Explain the similarities and differences between job order and process cost systems.
Similarities and Differences in Cost Systems

Differences

- The point at which costs are totaled
  - Job Order - totaled when job is completed
  - Process - totaled at end of period of time

- Unit cost computation
  - Job Order - total cost per job divided by units in job
  - Process - total manufacturing costs for the period divided by units produced during the period

LO 2: Explain the similarities and differences between job order and process cost systems.
LO 2: Explain the similarities and differences between job order and process cost systems.
Indicate which of the following statements is not correct:

a. Both a job order and a process cost system track the same three manufacturing cost elements – direct materials, direct labor, and manufacturing overhead.

b. A job order cost system uses only one work in process account, whereas a process cost system uses multiple work in process accounts.

c. Manufacturing costs are accumulated the same way in a job order and in a process cost system.

d. Manufacturing costs are assigned the same way in a job order and in a process cost system.

LO 2: Explain the similarities and differences between job order cost and process cost systems.
Process Cost Flows Illustrated

Example – Tyler Company

- Maker of automatic can openers

- Manufacturing consists of two processes:
  - Machining – raw materials are shaped, honed, and drilled
  - Assembly – parts assembled and packaged

- Materials, labor, and manufacturing overhead added in both departments

LO 3: Explain the flow of costs in a process cost system.
LO 3: Explain the flow of costs in a process cost system.

Example - Tyler Company

Manufacturing Costs
- Raw Materials
- Factory Labor
- Manufacturing Overhead

Work in Process Machining Department
- Costs transferred out to

Work in Process Assembly Department
- Cost of completed work

Finished Goods Inventory
- Cost of goods sold

Cost of Goods Sold
Assignment of Manufacturing Costs

Accumulation of materials, labor, and overhead costs is the same as in job order costing.

- Debit Raw Materials Inventory for purchases of raw materials.
- Debit Factory Labor for factory labor cost as incurred.
- Debit Manufacturing Overhead for overhead costs as incurred.

However, assignment of the three manufacturing cost elements to Work in Process is different.

LO 3: Explain the flow of costs in a process cost system.
Assignment of Manufacturing Costs

Materials

• A process cost system requires fewer material requisition slips than a job order cost system.
  Materials are used for processes and not specific jobs.
  Requisitions are for larger quantities of materials.

• The journal entry to record materials used:

  | Work in Process—Machining | XXXX |
  | Work in Process—Assembly  | XXXX |
  | Raw Materials Inventory   | XXXX |
  (To record materials used) |      |

LO 4: Make the journal entries to assign manufacturing costs in a process cost system.
Assignment of Manufacturing Costs

Factory Labor Costs

- Time tickets can be used in both systems
- The labor cost chargeable to a process can also be obtained from the payroll register or departmental payroll summaries.
- The journal entry to record factory labor costs:

| Work in Process—Machining       | XXXX |
| Work in Process—Assembly        | XXXX |
| Factory Labor                   | XXXX |
| (To assign factory labor to production) | XXXX |

LO 4: Make the journal entries to assign manufacturing costs in a process cost system.
Assignment of Manufacturing Costs

Manufacturing Overhead Costs

Objective of assigning overhead - allocate overhead to departments on an objective and equitable basis

Use the activity that “drives” or causes the costs

Machine time used - primary driver in continuous manufacturing operations

LO 4: Make the journal entries to assign manufacturing costs in a process cost system.
Manufacturing Overhead Costs

The entry to allocate overhead to the two processes is:

| Work in Process—Machining          | XXXX |
| Work in Process—Assembly          | XXXX |
| Manufacturing Overhead            | XXXX |
| (To assign overhead to production) |      |
### Assignment of Manufacturing Costs

#### Entries to Transfer Costs Through System

**Monthly Entry to transfer goods to next department:**

<table>
<thead>
<tr>
<th>Work in Process—Assembly</th>
<th>XXXXX</th>
<th>XXXXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in Process—Machining</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(To record transfer of units to the Assembly Department)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Entry to transfer completed goods to Finished Goods:**

<table>
<thead>
<tr>
<th>Finished Goods Inventory</th>
<th>XXXXX</th>
<th>XXXXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in Process—Assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(To record transfer of units to finished goods)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Entry to record Cost of Goods sold at the time of sale:**

<table>
<thead>
<tr>
<th>Cost of Goods Sold</th>
<th>XXXXX</th>
<th>XXXXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished Goods Inventory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(To record cost of units sold)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LO 4:** Make the journal entries to assign manufacturing costs in a process cost system.
In making the journal entry to assign raw materials costs, a company

a. Debits Finished Goods Inventory.

b. Often debits two or more work in process accounts.

c. Generally credits two or more work in process accounts.

d. Credits Finished Goods Inventory.

LO 4: Make the journal entries to assign manufacturing costs in a process cost system.
Equivalent Units

Example – XYZ College

Compute the cost of instruction at XYZ College per full-time equivalent student based on the following information:

Total cost of instruction is $9,000,000.
There are 900 full-time students and 1,000 part-time students.
Part-time students take 60% of the classes of a regular student.

<table>
<thead>
<tr>
<th>Full-time Students</th>
<th>Equivalent Units of Part-time Students</th>
<th>Full-time Equivalent Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>900</td>
<td>(60% × 1,000)</td>
<td>1,500</td>
</tr>
</tbody>
</table>

LO 5: Compute equivalents units.
**Cost of instruction**

*per full-time equivalent student*

equals

**Total cost of instruction**

divided by

**Number of full-time equivalent (FTE) students**

\[ \frac{9,000,000}{1,500 \text{ FTE students}} = 6,000 \]
Equivalent Units of Production

Measures the work done during a period, expressed in fully completed units

Used to determine the cost per unit of the completed product

LO 5: Compute equivalent units.
**Equivalent Units - Weighted Average Method**

- Considers the degree of completion (weighting) of units completed and transferred out and units in ending work in process

- Most widely used method

- Beginning work in process **not** part of computation of equivalent units

\[
\text{Units Completed and Transferred Out} + \text{Equivalent Units of Ending Work in Process} = \text{Equivalent Units of Production}
\]

**LO 5:** Compute equivalent units.
Example

The Kellogg Company uses 3 departments (Mixing, Baking, and Freezing/Packaging) to produce waffles. Information for the Mixing Department is:

<table>
<thead>
<tr>
<th>MIXING DEPARTMENT</th>
<th>Physical Units</th>
<th>Percentage Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in process, June 1</td>
<td>100,000</td>
<td>100%</td>
</tr>
<tr>
<td>Started into production</td>
<td>800,000</td>
<td>70%</td>
</tr>
<tr>
<td>Total units</td>
<td>900,000</td>
<td></td>
</tr>
<tr>
<td>Units transferred out</td>
<td>700,000</td>
<td>100%</td>
</tr>
<tr>
<td>Work in process, June 30</td>
<td>200,000</td>
<td>60%</td>
</tr>
<tr>
<td>Total units</td>
<td>900,000</td>
<td></td>
</tr>
</tbody>
</table>
Equivalent Units - Refinements
Weighted Average Method

Example - Continued

Mixing Department Raw Materials information:
All ingredients (materials) are added at the beginning of the mixing process.
All units, regardless of degree of completion, are 100% complete as to materials.

Mixing Department Conversion Cost information:
Conversion costs refers to the sum of labor costs and overhead costs.
The beginning work in process is 70% complete with respect to conversion costs and those in ending work in process are 60% complete.

LO 5: Compute equivalent units.
### Example - Continued

**Computation of Mixing Department’s Equivalent Units**

<table>
<thead>
<tr>
<th></th>
<th>Equivalent Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Materials</td>
</tr>
<tr>
<td>Units transferred out</td>
<td>700,000</td>
</tr>
<tr>
<td>Work in process, June 30</td>
<td>200,000</td>
</tr>
<tr>
<td>200,000 × 100%</td>
<td></td>
</tr>
<tr>
<td>200,000 × 60%</td>
<td></td>
</tr>
<tr>
<td>Total equivalent units</td>
<td>900,000</td>
</tr>
</tbody>
</table>

**LO 5: Compute equivalent units.**
**Equivalent Units**

**Refined Equivalent Units of Production Formula**

<table>
<thead>
<tr>
<th>Units Completed and Transferred Out—Materials</th>
<th>Equivalent Units of Ending Work in Process—Materials</th>
<th>Equivalent Units of Production—Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units Completed and Transferred Out—Conversion Costs</td>
<td>Equivalent Units of Ending Work in Process—Conversion Costs</td>
<td>Equivalent Units of Production—Conversion Costs</td>
</tr>
</tbody>
</table>

**LO 5:** Compute equivalent units.
The Mixing Department’s output during the period consists of 20,000 units completed and transferred out, and 5,000 units in ending work in process 60% complete as to materials and conversion costs. Beginning inventory is 1,000 units, 40% complete as to materials and conversion costs. The equivalent units of production are:

a. 22,600  
b. 23,000  
c. 24,000  
d. 25,000

LO 5: Compute equivalent units.
Production Cost Report

Key document used to understand activities.

Prepared for each department and shows:
  Production quantity
  Cost data

Four steps in preparation:
  Step 1: Compute physical unit flow
  Step 2: Compute equivalent units of production
  Step 3: Compute unit production costs
  Step 4: Prepare a cost reconciliation schedule

LO 6: Explain the four steps necessary to prepare a production cost report.
Flow of Costs in Making Waffles

LO 6: Explain the four steps necessary to prepare a production cost report.
Basic Information

**MIXING DEPARTMENT**

<table>
<thead>
<tr>
<th>Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in process, June 1</td>
<td>100,000</td>
</tr>
<tr>
<td>Direct materials: 100% complete</td>
<td></td>
</tr>
<tr>
<td>Conversion costs: 70% complete</td>
<td></td>
</tr>
<tr>
<td>Units started into production during June</td>
<td>800,000</td>
</tr>
<tr>
<td>Units completed and transferred out to Baking Department</td>
<td>700,000</td>
</tr>
<tr>
<td>Work in process, June 30</td>
<td>200,000</td>
</tr>
<tr>
<td>Direct materials: 100% complete</td>
<td></td>
</tr>
<tr>
<td>Conversion costs: 60% complete</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in process, June 1</td>
<td></td>
</tr>
<tr>
<td>Direct materials: 100% complete</td>
<td>$50,000</td>
</tr>
<tr>
<td>Conversion costs: 70% complete</td>
<td>$35,000</td>
</tr>
<tr>
<td>Cost of work in process, June 1</td>
<td>$85,000</td>
</tr>
<tr>
<td>Costs incurred during production in June</td>
<td></td>
</tr>
<tr>
<td>Direct materials</td>
<td>$400,000</td>
</tr>
<tr>
<td>Conversion costs</td>
<td>$170,000</td>
</tr>
<tr>
<td>Costs incurred in June</td>
<td>$570,000</td>
</tr>
</tbody>
</table>

**LO 6:** Explain the four steps necessary to prepare a production cost report.
Step 1: **Compute Physical Unit Flow.**

- **Physical units**
  - *actual units* to be accounted for during a period, regardless of work performed

- **Total units to be accounted for**
  - *units started* (or transferred) into production during the period + *units in production at beginning* of period

- **Total units accounted for**
  - *units transferred out* during period + *units in production at end of period

LO 6: Explain the four steps necessary to prepare a production cost report.
Step 1: Compute Physical Unit Flow - continued

**MIXING DEPARTMENT**

<table>
<thead>
<tr>
<th></th>
<th>Physical Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units to be accounted for</td>
<td></td>
</tr>
<tr>
<td>Work in process, June 1</td>
<td>100,000</td>
</tr>
<tr>
<td>Started (transferred) into production</td>
<td>800,000</td>
</tr>
<tr>
<td>Total units</td>
<td><strong>900,000</strong></td>
</tr>
<tr>
<td>Units accounted for</td>
<td></td>
</tr>
<tr>
<td>Completed and transferred out</td>
<td>700,000</td>
</tr>
<tr>
<td>Work in process, June 30</td>
<td>200,000</td>
</tr>
<tr>
<td>Total units</td>
<td><strong>900,000</strong></td>
</tr>
</tbody>
</table>

LO 6: Explain the four steps necessary to prepare a production cost report.
Step 2: Compute Equivalent Units of Production

- Measure of a department’s productivity
- Two computations required:
  - one for materials and one for conversion costs
- Beginning work in process ignored

<table>
<thead>
<tr>
<th>Equivalent Units</th>
<th>Materials</th>
<th>Conversion Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units transferred out</td>
<td>700,000</td>
<td>700,000</td>
</tr>
<tr>
<td>Work in process, June 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200,000 × 100%</td>
<td>200,000</td>
<td></td>
</tr>
<tr>
<td>200,000 × 60%</td>
<td>120,000</td>
<td></td>
</tr>
<tr>
<td>Total equivalent units</td>
<td>900,000</td>
<td>820,000</td>
</tr>
</tbody>
</table>

LO 6: Explain the four steps necessary to prepare a production cost report.
Comprehensive Example Continued

Step 3: Compute Unit Production Costs

- Costs expressed in terms of equivalent units of production
- When equivalent units of production are different for materials and for conversion costs, three unit costs are computed:

  Materials

  Conversion

  Total Manufacturing

LO 6: Explain the four steps necessary to prepare a production cost report.
Comprehensive Example - Continued

Step 3: Compute Unit Production Cost - continued

Total Materials Cost Computation:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in process, June 1</td>
<td>$50,000</td>
</tr>
<tr>
<td>Direct materials cost</td>
<td></td>
</tr>
<tr>
<td>Costs added to production during June</td>
<td>$400,000</td>
</tr>
<tr>
<td>Direct materials cost</td>
<td></td>
</tr>
<tr>
<td>Total materials cost</td>
<td>$450,000</td>
</tr>
</tbody>
</table>

The Computation of Unit Materials Costs:

\[
\text{Unit Materials Cost} = \frac{\text{Total Materials Cost}}{\text{Equivalent Units of Materials}}
\]

\[
\frac{\$450,000}{900,000} = \$0.50
\]

LO 6: Explain the four steps necessary to prepare a production cost report.
Comprehensive Example Continued

Step 3: Compute Unit Production Cost - continued

Conversion Cost Computation:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in process, June 1</td>
<td>$ 35,000</td>
</tr>
<tr>
<td>Conversion costs</td>
<td></td>
</tr>
<tr>
<td>Costs added to production during June</td>
<td>$170,000</td>
</tr>
<tr>
<td>Conversion costs</td>
<td></td>
</tr>
<tr>
<td>Total conversion costs</td>
<td>$205,000</td>
</tr>
</tbody>
</table>

The Computation of Unit Conversion Costs:

\[
\text{Unit Conversion Cost} = \frac{\text{Total Conversion Costs}}{\text{Equivalent Units of Conversion Costs}}
\]

\[
\text{Unit Conversion Cost} = \frac{$205,000}{820,000} = $0.25
\]

LO 6: Explain the four steps necessary to prepare a production cost report.
Comprehensive Example - Continued

Step 3: Compute Unit Production Cost - continued

Total Manufacturing Cost Per Unit

The computation of unit total manufacturing cost:

\[
\text{Unit Materials Cost} \quad + \quad \text{Unit Conversion Cost} \quad = \quad \text{Total Manufacturing Cost per Unit}
\]

\[
\begin{align*}
$0.50 & \quad + \quad $0.25 \\
\hline
& \quad = \quad $0.75
\end{align*}
\]

LO 6: Explain the four steps necessary to prepare a production cost report.
Comprehensive Example - Continued

Step 4: Prepare Cost Reconciliation Schedule

**Costs Charged to Mixing Department:**

<table>
<thead>
<tr>
<th>Costs to be accounted for</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in process, June 1</td>
<td>$85,000</td>
</tr>
<tr>
<td>Started into production</td>
<td>570,000</td>
</tr>
<tr>
<td>Total costs</td>
<td><strong>$655,000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIXING DEPARTMENT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs accounted for</td>
<td></td>
</tr>
<tr>
<td>Transferred out (700,000 × $0.75)</td>
<td>$525,000</td>
</tr>
<tr>
<td>Work in process, June 30</td>
<td></td>
</tr>
<tr>
<td>Materials (200,000 × $0.50)</td>
<td>$100,000</td>
</tr>
<tr>
<td>Conversion costs (120,000 × $0.25)</td>
<td>30,000</td>
</tr>
<tr>
<td>Total costs</td>
<td><strong>$655,000</strong></td>
</tr>
</tbody>
</table>

LO 6: Explain the four steps necessary to prepare a production cost report.
### Production Cost Report - Mixing Department

**Mixing Department**  
**Production Cost Report**  
**For the Month Ended June 30, 2008**

<table>
<thead>
<tr>
<th>QUANTITIES</th>
<th>Equivalent Units</th>
<th>Physical Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Units to be accounted for</strong></td>
<td><strong>Step 1</strong></td>
<td><strong>Step 2</strong></td>
</tr>
<tr>
<td>Work in process, June 1</td>
<td>100,000</td>
<td></td>
</tr>
<tr>
<td>Started into production</td>
<td>800,000</td>
<td></td>
</tr>
<tr>
<td>Total units</td>
<td>900,000</td>
<td></td>
</tr>
<tr>
<td><strong>Units accounted for</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transferred out</td>
<td>700,000</td>
<td>700,000</td>
</tr>
<tr>
<td>Work in process, June 30</td>
<td>200,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Total units</td>
<td>900,000</td>
<td>900,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COSTS</th>
<th>Materials</th>
<th>Conversion Costs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit costs [Step 3]</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costs in June</td>
<td>(a) $450,000</td>
<td>$205,000</td>
<td>$655,000</td>
</tr>
<tr>
<td>Equivalent units</td>
<td>(b) 900,000</td>
<td>20,000</td>
<td></td>
</tr>
</tbody>
</table>

| **Unit costs [(a) + (b)]** | | | 0.50 | 0.25 | 0.75 |

| COSTS to be accounted for | | | |
| Work in process, June 1 | | | $85,000 |
| Started into production | | | 570,000 |
| Total costs | | | 655,000 |

**Cost Reconciliation Schedule [Step 4]**

| Costs accounted for | | | |
| Transferred out (700,000 × $0.75) | | | $525,000 |
| Work in process, June 30 | | | 100,000 |
| Materials (200,000 × $0.50) | | | 100,000 |
| Conversion costs (120,000 × $0.25) | | | 30,000 | 130,000 | 655,000 |

LO 7: Prepare a production cost report.
Largo Company has unit costs of $10 for materials and $30 for conversion costs. If there are 2,500 units in ending work in process, 40% complete as to conversion costs and fully complete as to materials cost, the total cost assignable to the ending work in process inventory is:

- a. $45,000.
- b. $55,000.
- c. $75,000.
- d. $100,000.

LO 6: Explain the four steps necessary to prepare a production cost report.
Companies often use a combination of a process cost and a job order cost system.

A job order system provides detailed information related to the cost of the product - however, often an expensive system due to the accounting costs involved.

When deciding which system to use or whether to use a combination of systems, a company must weigh

“the costs of implementing the system against the benefits from the additional information provided”
Wal-Mart Is on the Phone

- Wal-Mart has 138 million weekly customers and annual sales of over $300 billion
- In a recent year, 10,000 companies applied to be new suppliers (about 2% were accepted)
- Wal-Mart doesn’t like to account for more than 30% of a supplier’s total business
Wal-Mart Is on the Phone—What do you think?

- Assume that your company manufactures pens.
- Wal-Mart offers you a 30 day trial period to sell your pens at 500 Wal-Mart stores.
- To pass the trial, Wal-Mart must sell 85% of the 48,000 pens it ordered from you within one month.
- Your retailers generally pay you between $6.49 and $12.00 per pen.
- Wal-Mart is willing to pay only $3.76 per pen.
- Sales for your company totaled $2,000,000 last year.
Wal-Mart Is on the Phone
What do you think?

Would you accept Wal-Mart’s offer to sell your pens during a 30-day trial period? Why?

How would you increase production to handle the order?

What would you do with the excess capacity if the deal with Wal-Mart falls through?

How will you deal with your existing customers who are paying considerably more for your product?
Production costs chargeable to the Finishing Department in June in Castilla Company are materials $15,000, labor $29,500, overhead $18,000. Equivalent units of production are materials 20,000 and conversion costs 19,000. Compute the unit costs for materials and conversion costs.

**Unit costs for Materials:**

\[
\frac{15,000}{20,000 \text{ units}} = \$0.75 \text{ per unit}
\]

**Unit costs for Conversion Costs:**

\[
\text{Conversion Costs} = 29,500 + 18,000 = 47,500
\]

\[
\frac{47,500}{19,000} = \$2.50 \text{ per unit}
\]

**Total Manufacturing Costs per Unit:**

\[
\$0.75 + \$2.50 = \$3.25 \text{ per unit}
\]
Equivalent units are computed on a first-in, first-out basis

FIFO usually corresponds to the actual physical flow of goods

Assumes that the beginning work in process is completed before new work is started

Under FIFO, equivalent units are the sum of work performed to:

Finish the units of beginning work in process inventory

Complete the units started into production during the period (referred to as units started and completed)

Start, but only partially complete, the units in ending work in process inventory

LO 8: Compute equivalent units using the FIFO method.
LO 8: Compute equivalent units using the FIFO method.
Appendix - FIFO vs. Weighted-Average

- Major advantage of weighted average method:
  Simple to understand and apply

- Where prices do not fluctuate significantly, weighted-average method is very similar to FIFO method - especially if company uses Just-in-Time procedures

- Conceptually, the FIFO method is superior because
  - FIFO measures current performance using only costs incurred in the current period
  - Management not responsible for costs from prior period over which they may not have had control
  - FIFO provides current cost information which can be used to establish more accurate pricing strategies

LO 8: Compute equivalent units using the FIFO method.
Hollins Company uses the FIFO method to compute equivalent units. It has 2,000 units in beginning WIP, 20% complete as to conversion costs; 25,000 units started and completed; and 3,000 units in ending WIP, 30% complete as to conversion costs. All units are 100% complete as to materials. Equivalent units for materials and conversion costs are, respectively:

a. 28,000 and 26,000.

b. 28,000 and 27,500.

c. 27,000 and 26,200.

d. 27,000 and 29,600.
Copyright © 2008 John Wiley & Sons, Inc. All rights reserved. Reproduction or translation of this work beyond that permitted in Section 117 of the 1976 United States Copyright Act without the express written permission of the copyright owner is unlawful. Request for further information should be addressed to the Permissions Department, John Wiley & Sons, Inc. The purchaser may make back-up copies for his/her own use only and not for distribution or resale. The Publisher assumes no responsibility for errors, omissions, or damages, caused by the use of these programs or from the use of the information contained herein.