

# Activity-Based Costing

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Volume  
-Based

vs.

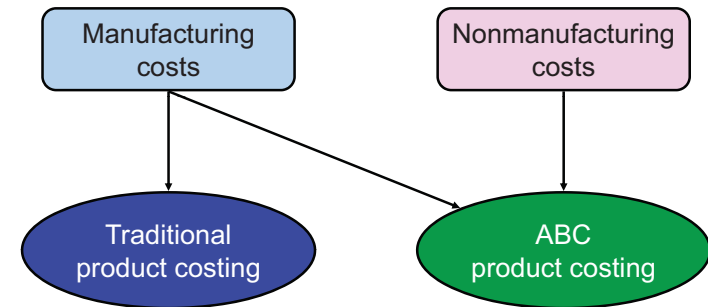


Activity-  
Based

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## How Costs are Treated Under ABC

ABC differs from traditional cost accounting in three ways.

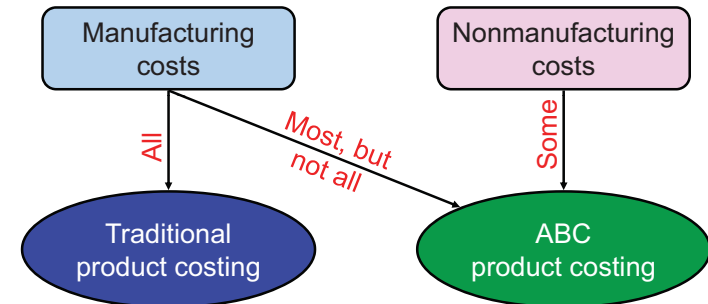


① ABC assigns both types of costs to products.

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## How Costs are Treated Under ABC

ABC differs from traditional cost accounting in three ways.

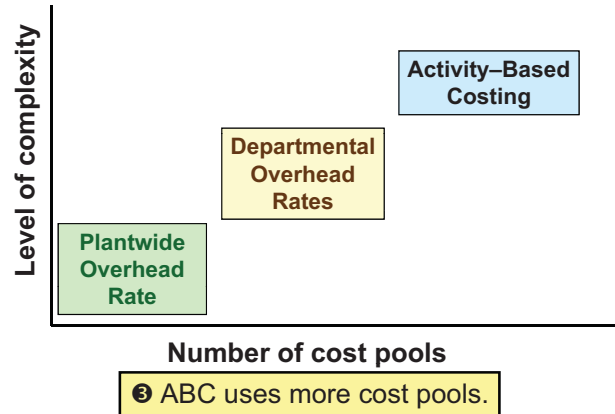


② ABC does not assign all manufacturing costs to products.

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ABC differs from traditional cost accounting in three ways.



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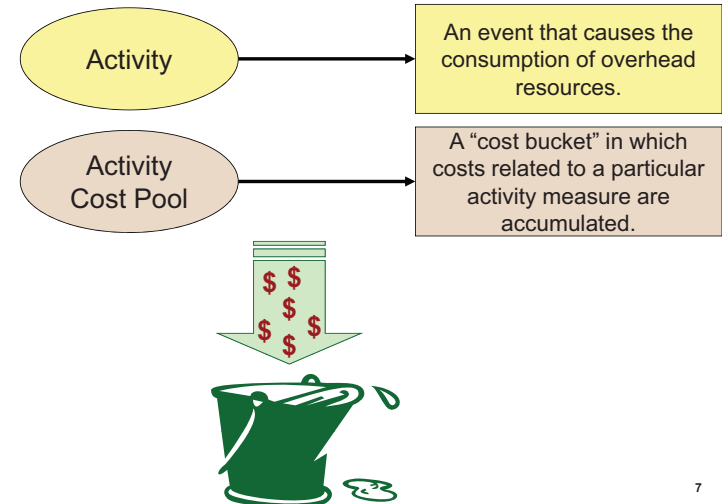
Each ABC cost pool has its own unique measure of activity.

Traditional cost systems usually rely on volume measures such as direct labor hours and/or machine hours to allocate all overhead costs to products.

③ ABC uses more cost pools.

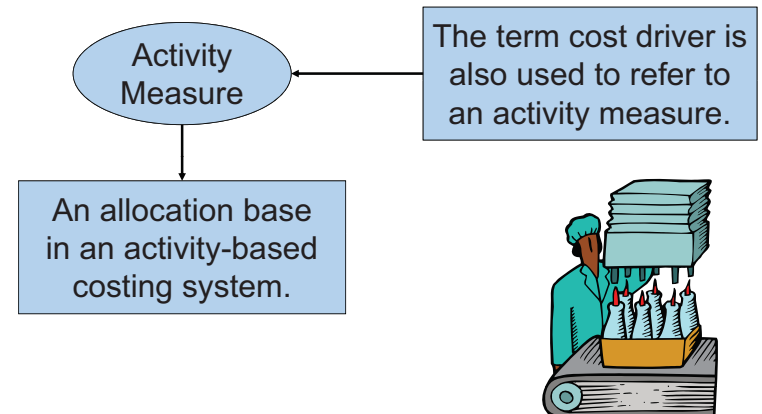
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## How Costs are Treated Under ABC



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## How Costs are Treated Under ABC



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## How Costs are Treated Under ABC

### Two common types of activity measures:

Transaction  
driver

Simple count  
of the number of  
times an activity  
occurs.

Duration  
driver

A measure  
of the amount  
of time needed  
for an activity.

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## How Costs are Treated Under ABC

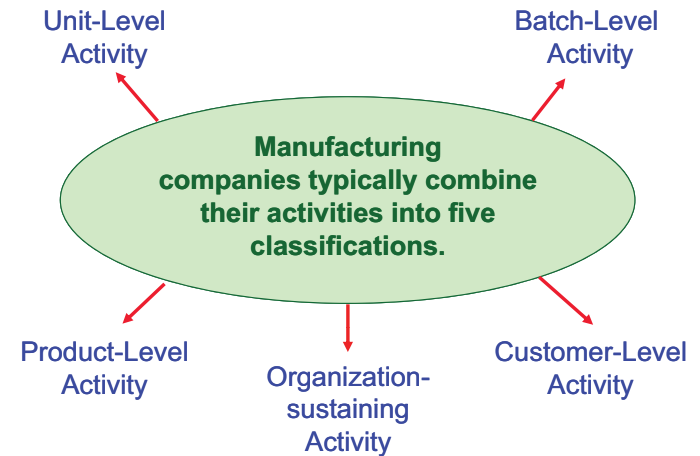
ABC defines  
five levels of activity  
that largely do not relate  
to the volume of units  
produced.



Traditional cost systems usually rely on volume measures such as direct labor hours and/or machine hours to allocate all overhead costs to products.

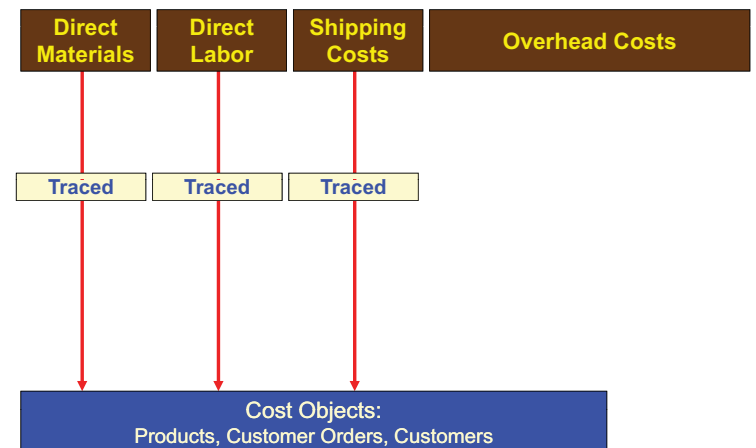
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## How Costs are Treated Under ABC



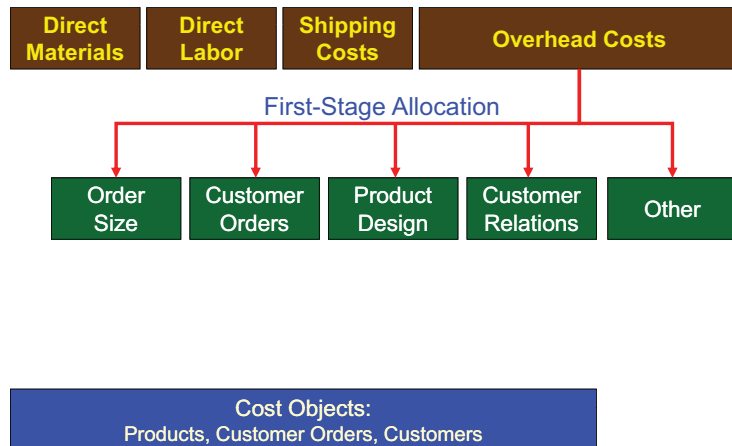
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### Activity-Based Costing: Two Stages



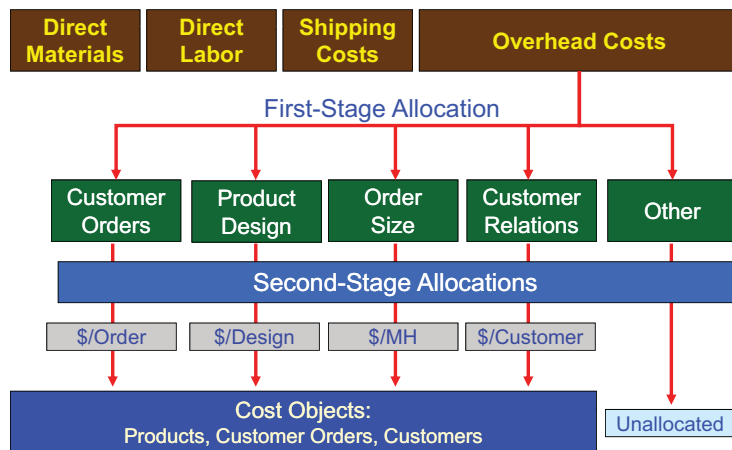
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## Activity-Based Costing: Two Stages



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## Activity-Based Costing: Two Stages



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## ACTIVITY-BASED COSTING

• An activity is any event or transaction that is a cost driver. Examples of activities that are cost drivers include:

- Machine setups.
- Purchase orders.
- Quality inspections.
- Production orders.
- Blood tests run.
- Maintenance requests.
- Machine time.
- Power consumed.
- Beds occupied.
- Flight-hours logged.

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## ACTIVITY-BASED COSTING EXAMPLE

Sarver Company manufactures 4,000 units of Product A and 20,000 units of Product B each year. The company currently has a traditional cost system in which direct labor-hours is used to assign overhead cost to products. The predetermined overhead rate is:

$$\frac{\text{Manufacturing overhead cost}}{\text{Direct labor-hours}} = \frac{\quad}{\quad} = \quad$$

Product A requires 2.5 DLH and Product B requires 2.0 DLH. According to the current cost system, the unit product costs are:

	<i>Product A</i>	<i>Product B</i>
Direct materials .....	\$36.00	\$30.00
Direct labor .....	17.50	14.00
Manufacturing overhead .....		
Unit product cost.....		

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Suppose, however, that overhead costs are actually caused by the five activities listed below rather than by direct labor hours.

<u>Activity Center</u>	<u>Estimated Overhead Cost</u>
Machine setups .....	
Quality inspections .....	
Production orders .....	
Machine-hours worked .....	
Material receipts .....	
Total .....	

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Also suppose the following activity data have been estimated:

<u>Activity Center</u>	<u>Expected Activity</u>
	<u>Total</u> <u>Product A</u> <u>Product B</u>
Machine setups .....	
Quality inspections .....	
Production orders .....	
Machine-hours worked .....	
Material receipts .....	

These data can be used to develop overhead rates for each of the five activities:

<u>Activity Center</u>	<u>Estimated Overhead Costs</u>	<u>Expected Activity</u>	<u>Overhead Rate</u>
Machine setups .....			
Quality inspections .....			
Production orders .....			
Machine-hours worked .....			
Material receipts .....			

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<u>Product A</u>			
<u>Activity Center</u>	<u>Overhead Rate</u>	<u>Activity</u>	<u>Amount</u>
Machine setups .....			
Quality inspections .....			
Production orders .....			
Machine-hours worked .....			
Material receipts .....			
Total overhead (a) .....			
Number of units (b) .....			
Overhead per unit (a) ÷ (b) ...			

<u>Product B</u>			
<u>Activity Center</u>	<u>Overhead Rate</u>	<u>Activity</u>	<u>Amount</u>
Machine setups .....			
Quality inspections .....			
Production orders .....			
Machine-hours worked .....			
Material receipts .....			
Total overhead (a) .....			
Number of units (b) .....			
Overhead per unit (a) ÷ (b) ...			

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## ACTIVITY-BASED COSTING EXAMPLE (cont'd)

Product costs computed using the two different methods can now be contrasted:

### Product costs using activity-based costing:

	<u>Product A</u>	<u>Product B</u>
Direct materials .....		
Direct labor .....		
Manufacturing overhead .....		
Unit product cost .....		

### Product costs using the old costing system:

	<u>Product A</u>	<u>Product B</u>
Direct materials .....		
Direct labor .....		
Manufacturing overhead .....		
Unit product cost .....		

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- Activity-based costing improves costing systems in three ways:

1. *It increases the number of cost pools used to accumulate overhead costs.* Rather than accumulate all overhead costs in a single, company-wide pool (or in departments), costs are accumulated by activity.
2. *It changes the bases used to assign overhead cost to products.* Rather than assigning costs on the basis of a measure of volume (such as direct labor-hours or machine-hours), costs are assigned on the basis of the activities that generate the costs.
3. *It changes the nature of many overhead costs.* Costs that were formerly indirect (depreciation, power, inspection) are traced to specific activities.

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- Adopting activity-based costing usually results in shifting overhead costs from high volume to low volume products.
- The per unit costs of the low volume products increase and the per unit costs of the high volume products decrease.
- The effects are not symmetrical—there is a bigger dollar effect on the per unit costs of the low volume products.

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## Activity-Based Costing and External Reporting

Most companies do not use ABC for external reporting because . . .

1. External reports are less detailed than internal reports.
2. It may be difficult to make changes to the company's accounting system.
3. ABC does not conform to GAAP.
4. Auditors may be suspect of the subjective allocation process based on interviews with employees.

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## ABC Limitations

Substantial resources required to implement and maintain.

Resistance to unfamiliar numbers and reports.

Desire to fully allocate all costs to products.

Potential misinterpretation of unfamiliar numbers.

Does not conform to GAAP. Two costing systems may be needed.



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