

University of Rome



DEPT. MANAGEMENT & LAW
BACHELOR DEGREE IN BUSINESS ADMINISTRATION

***COURSE of Managerial Accounting
- Basics of Cost Analysis -***

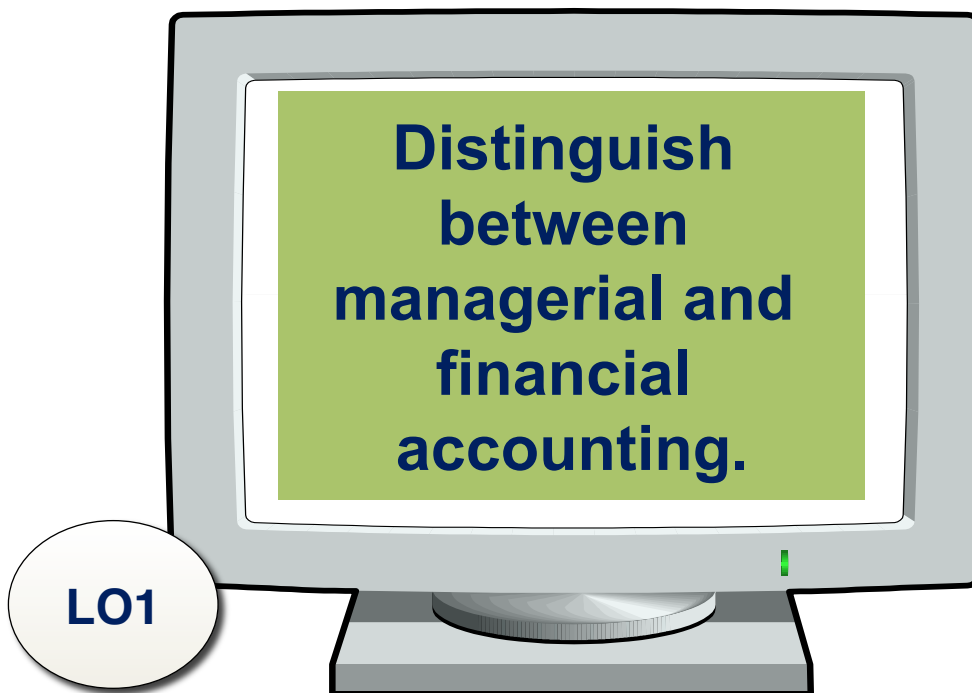
Managerial Accounting, Planning & Control

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1-0



Learning Objective



Managerial Accounting - Basics of Cost
Analysis - A.Y. 17/18

1-1

Managerial Accounting

What is Managerial Accounting?

It is the process of identifying, measuring, accumulating, analyzing, preparing, interpreting, and communicating information that managers use to fulfill organizational objectives.

What is a Cost?

Cost is a sacrifice of resources.



Presentation of Costs in Financial Statements

RPE ASSOCIATES Income Statement For the Year Ended December 31, Year 2 (\$000)

Revenues	\$32,000	
Cost of services sold	23,500	← Cost of billable hours
Gross margin	\$ 8,500	
Marketing and administrative costs	4,300	
Operating profit	<u>\$ 4,200</u>	← The excess of operating revenue over costs necessary to generate those revenues related to services provided

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Presentation of Costs in Financial Statements

SOUTHWEST OFFICE PRODUCTS Income Statement For the Year Ended December 31, Year 2 (\$000)

Sales revenue	\$3,225	
Cost of goods sold (see following statement)	1,775	← Expense assigned to products sold during a period
Gross margin	\$1,450	
Marketing and administrative costs	825	
Operating profit	<u>\$ 625</u>	← The excess of operating revenue over costs necessary to generate those revenues

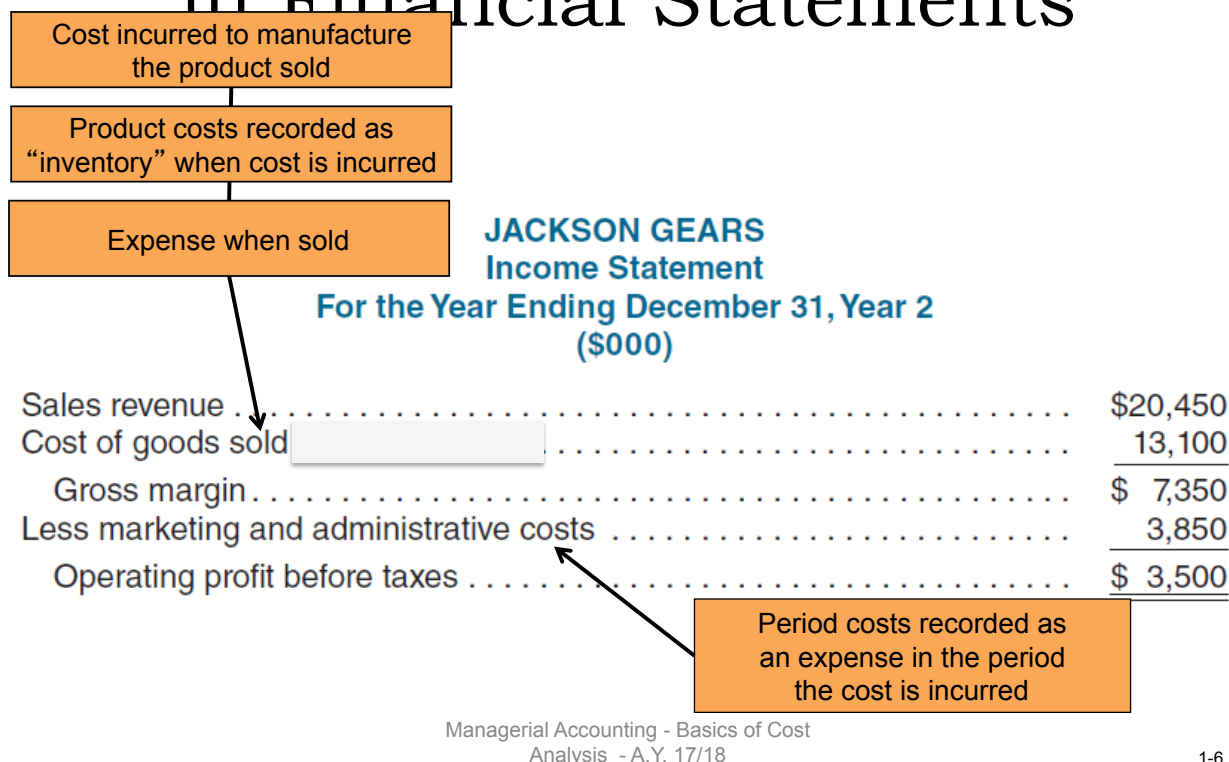
Cost of Goods Sold Statement For the Year Ended December 31, Year 2 (\$000)

Beginning inventory		\$ 300
Cost of goods purchased		
Merchandise cost	\$1,830	
Transportation-in costs	90	
Total cost of goods purchased		<u>1,920</u>
Cost of goods available for sale		\$2,220
Less cost of goods in ending inventory		<u>445</u>
Cost of goods sold		<u>\$1,775</u>

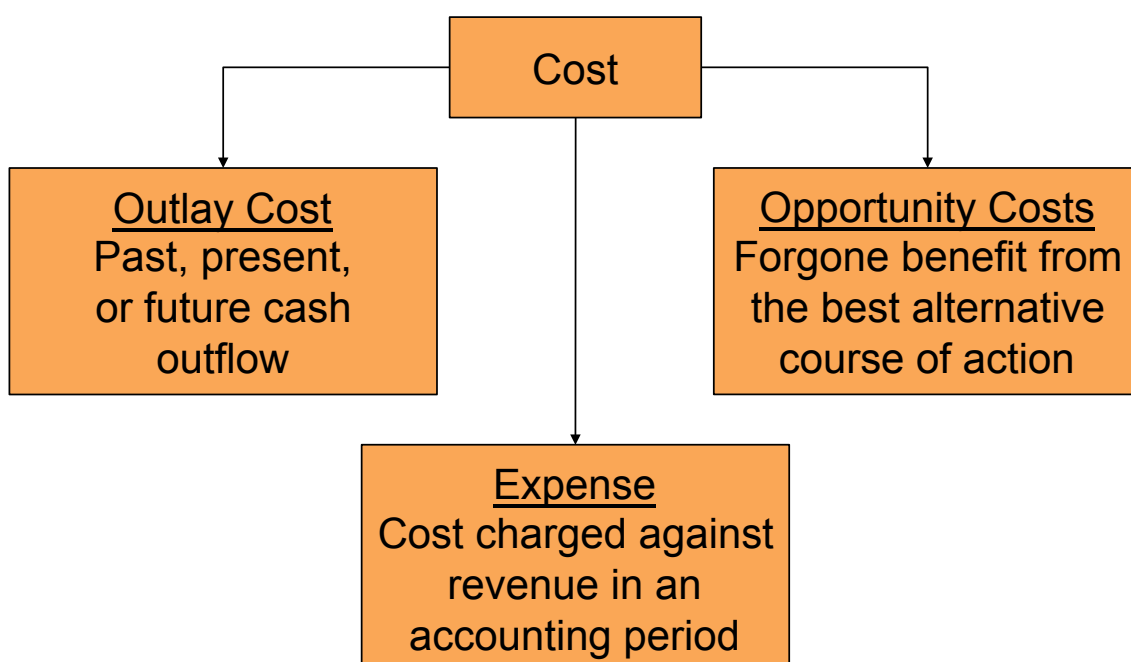
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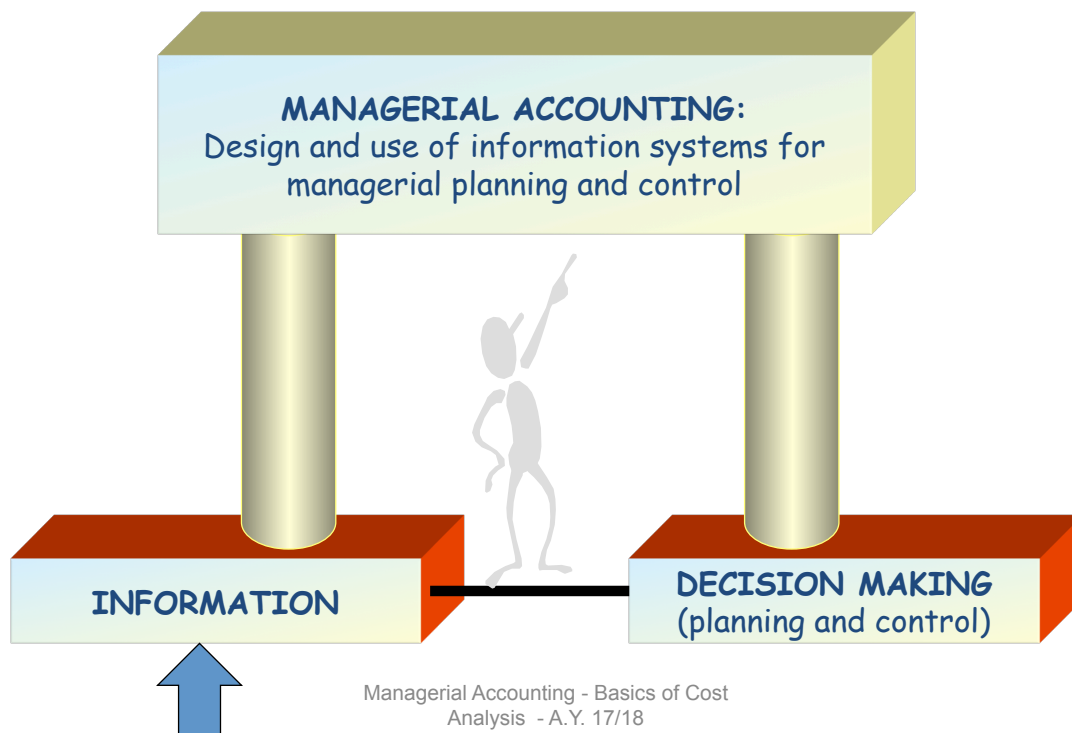
Presentation of Costs in Financial Statements



Cost versus Expenses

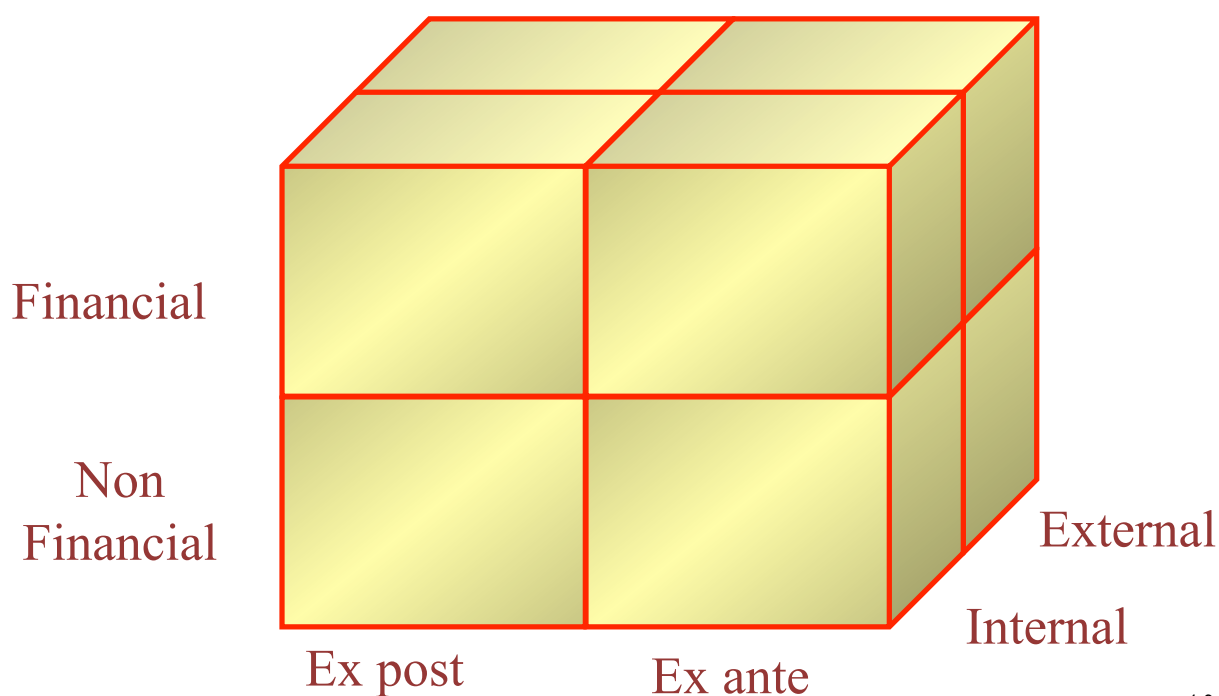


Managerial Accounting



1-8

Three-Way Classification Scheme of Information



1-9

Accounting Information System

Process of gathering, organizing, and
Communicating financial information

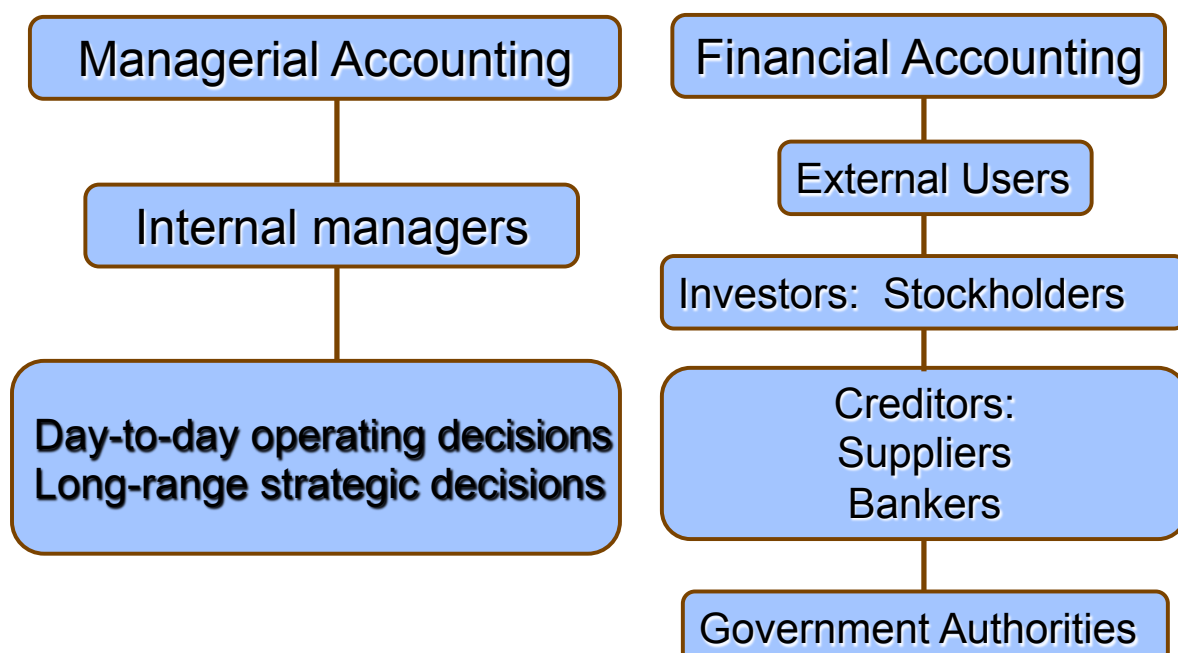


Financial
Statements

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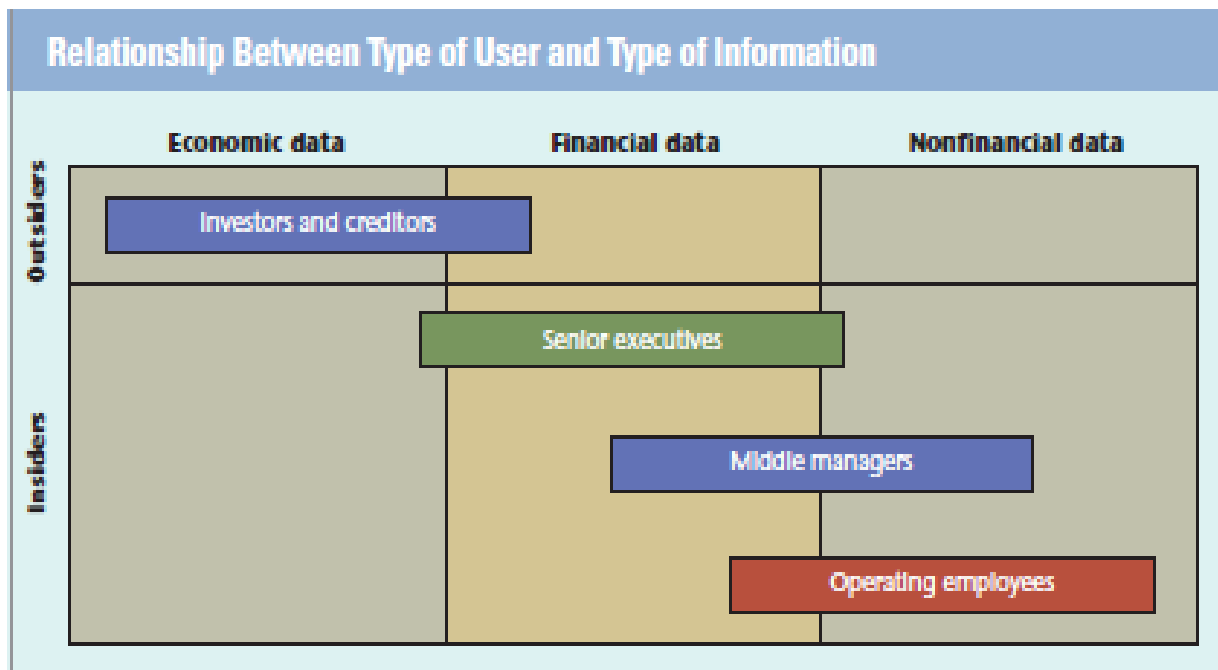
Users of Accounting Information



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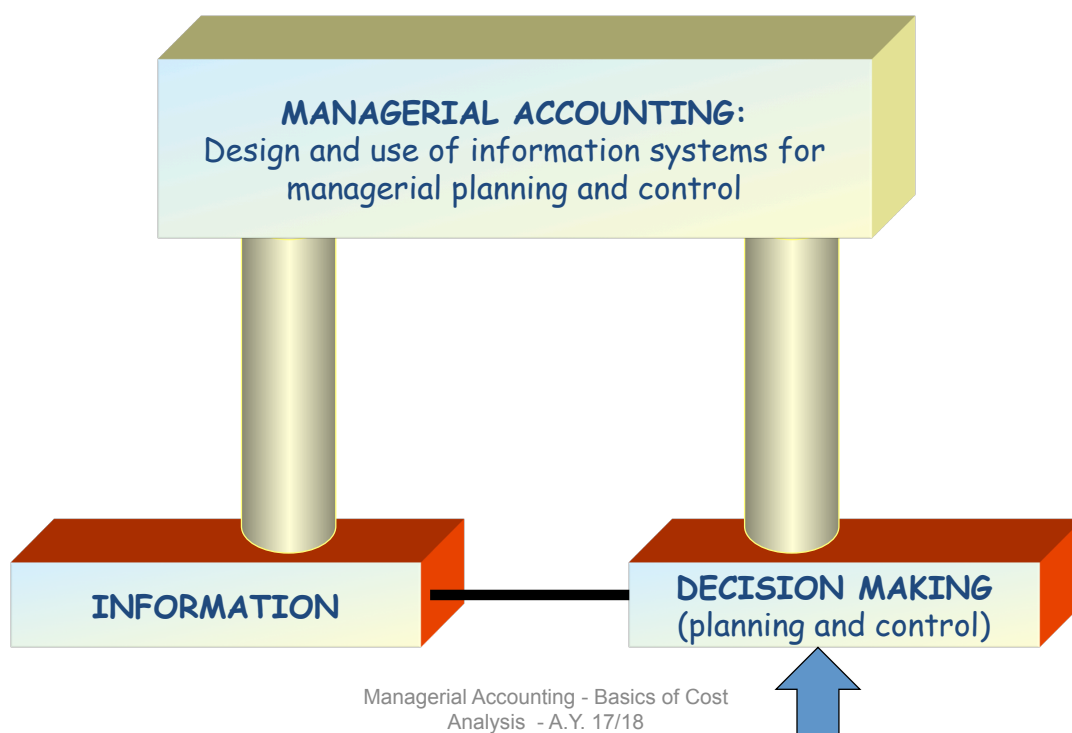
Comparison of Financial and Managerial Accounting



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Managerial Accounting



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1-13

Planning and Controlling Process

What is decision making?

It is the purposeful choice from among a set of alternative courses of action designed to achieve some objective.

This is the core of the management process

Decision Making

Scorekeeping:
Evaluate
Organizational
Performance

Attention Directing:
Compare Actual
Results to Expected

Problem Solving:
Assess Possible
Courses of Action



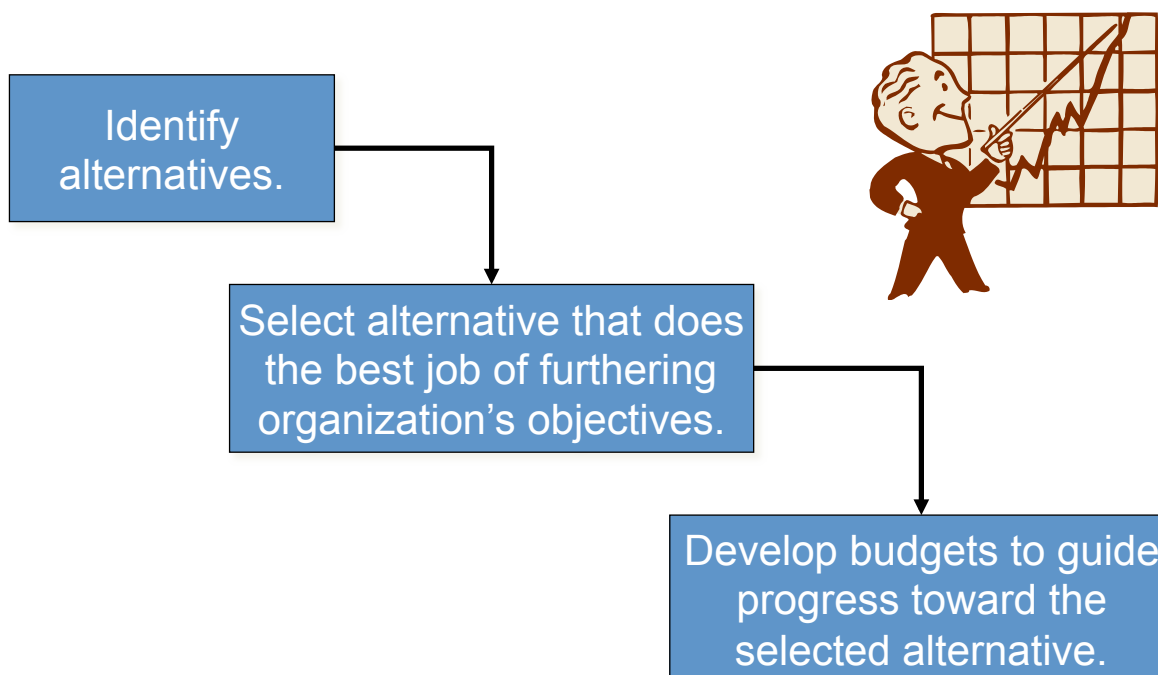
Work of Management



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1-16

Planning



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1-17

Directing and Motivating

Directing and motivating involves managing day-to-day activities to keep the organization running smoothly.

- Employee work assignments.
- Routine problem solving.
- Conflict resolution.
- Effective communications.



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1-18

Controlling

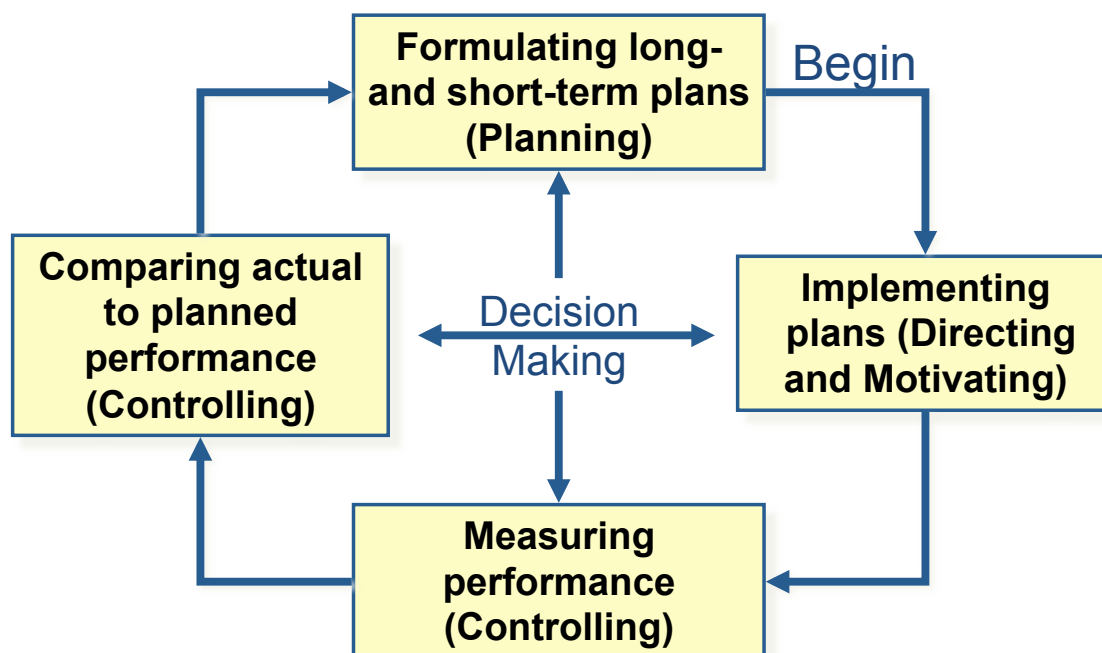
The control function ensures that plans are being followed.

Feedback in the form of performance reports that compare actual results with the budget are an essential part of the control function.



1-19

Planning and Control Cycle



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Comparison of Financial and Managerial Accounting

Comparative Features of Managerial versus Financial Accounting Information		
Features	Managerial Accounting	Financial Accounting
Users	Insiders including executives, managers, and operators	Outsiders including investors, creditors, government agencies, analysts, and reporters
Information type	Economic and physical data as well as financial data	Financial data
Level of aggregation	Local information on subunits of the organization	Global information on the company as a whole
Regulation	No regulation, limited only by the value-added principle	Regulation by SEC, FASB, and other determiners of GAAP
Information characteristics	Estimates that promote relevance and enable timeliness	Factual information that is characterized by objectivity, reliability, consistency, and accuracy
Time horizon	Past, present, and future	Past only, historically based
Reporting frequency	Continuous reporting	Delayed with emphasis on annual reports

1-21

Exercise 1-1A Identifying financial versus managerial accounting items

Required

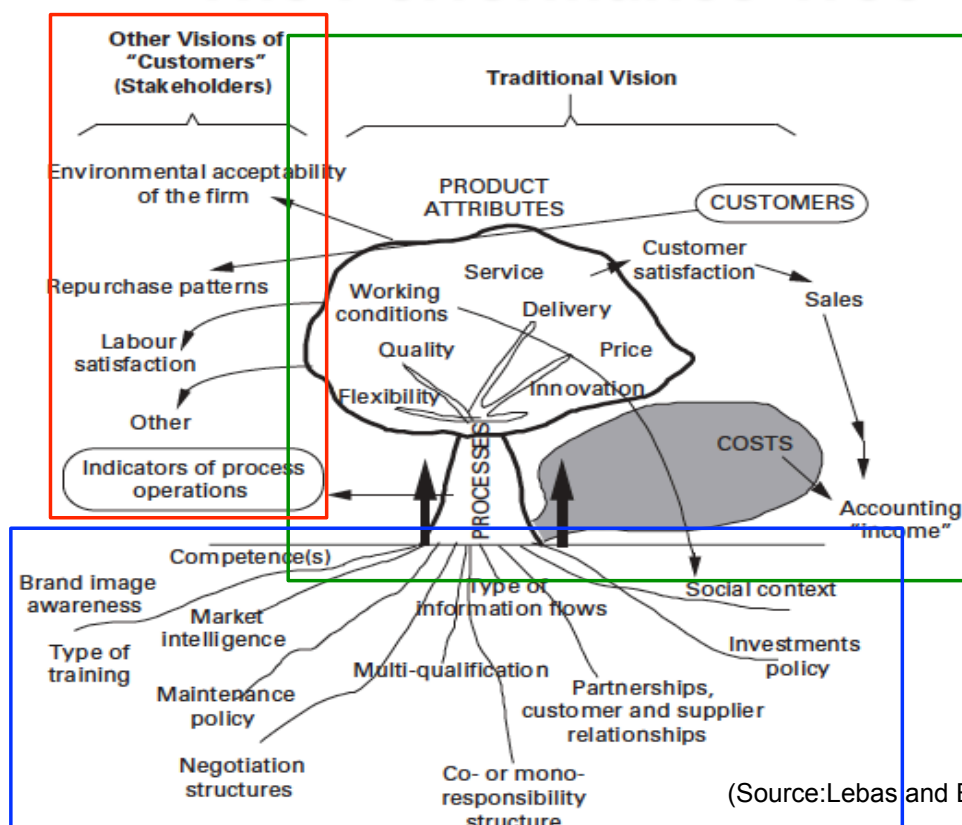
Indicate whether each of the following items is representative of managerial or of financial accounting.

- Information is based on estimates that are bounded by relevance and timeliness.
- Information is historically based and usually reported annually.
- Information is local and pertains to subunits of the organization.
- Information includes economic and nonfinancial data as well as financial data.
- Information is global and pertains to the company as a whole.
- Information is provided to insiders, including executives, managers, and employees.
- Information is factual and is characterized by objectivity, reliability, consistency, and accuracy.
- Information is reported continuously and has a current or future orientation.
- Information is provided to outsiders, including investors, creditors, government agencies, analysts, and reporters.
- Information is regulated by the SEC, FASB, and other sources of GAAP.

MA	FA
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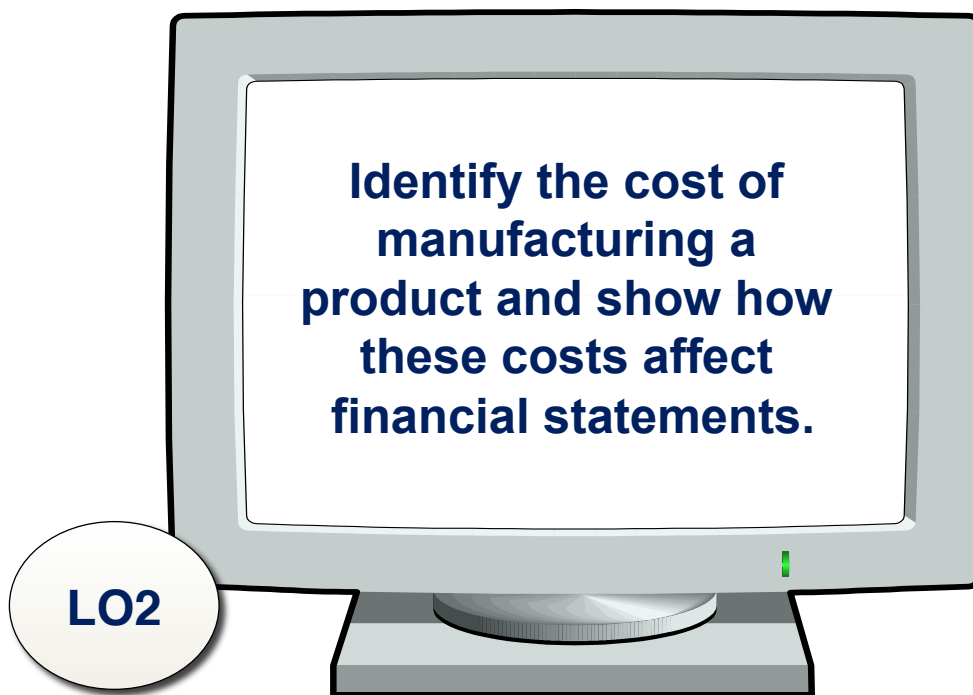
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The Performance Tree



1-23

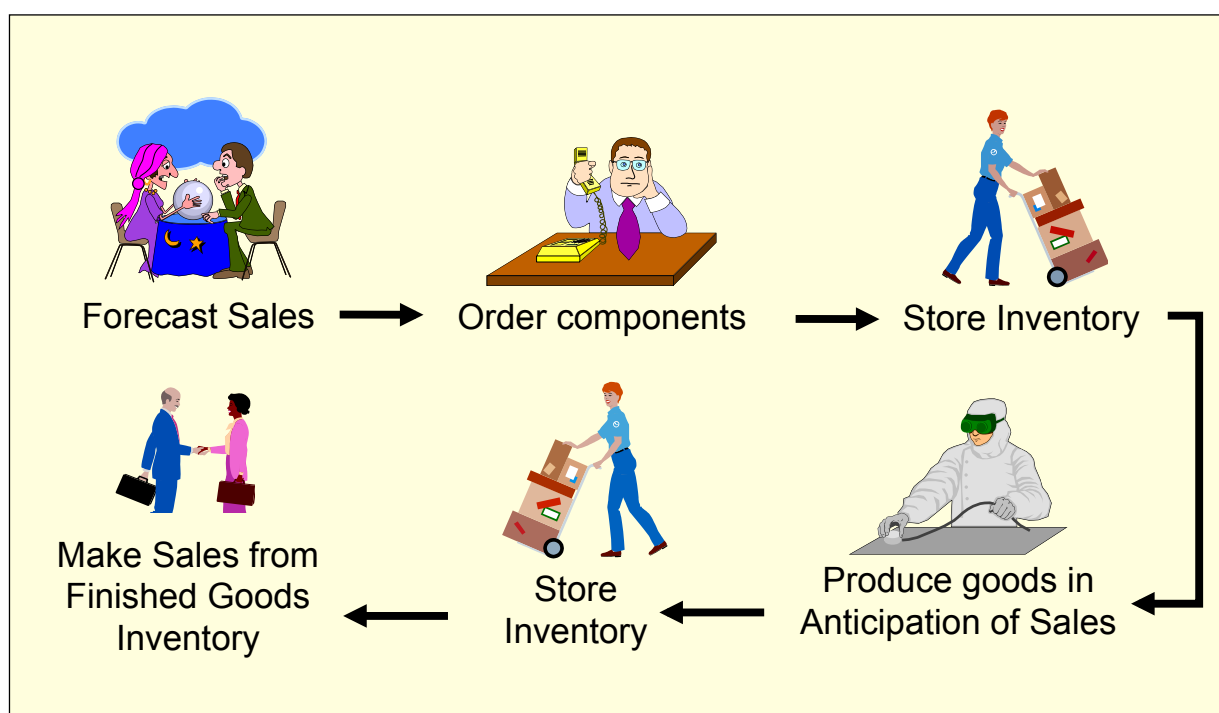
Learning Objective



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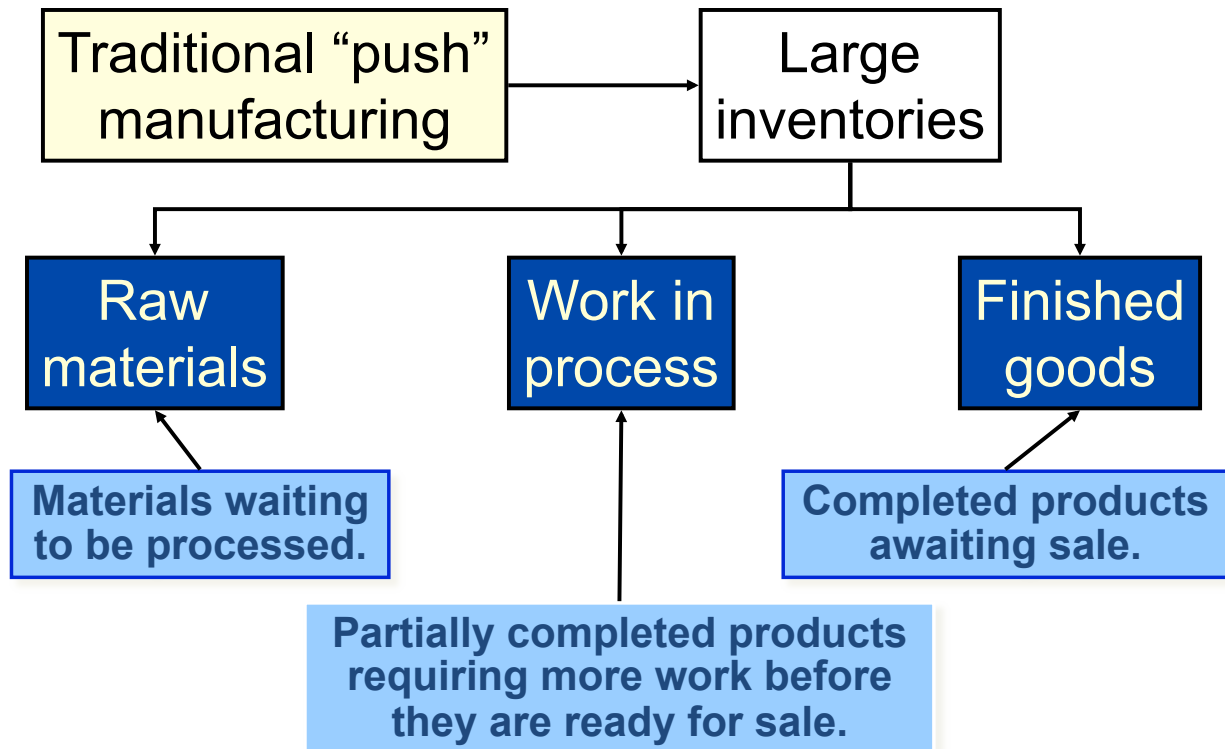
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Traditional Manufacturing Company



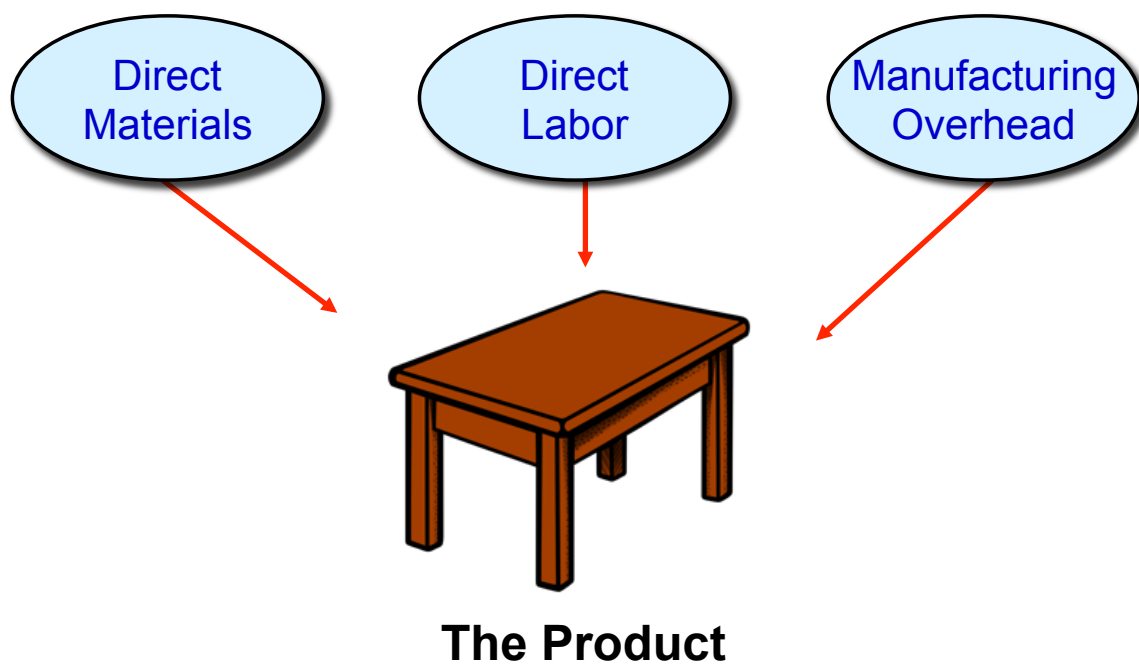
1-25

Traditional Manufacturing Company



1-26

Manufacturing Costs



1-27

Direct Materials

Raw materials that become an integral part of the product and that can be conveniently traced directly to it.



Example: the amount of wood (\$) needed to produce the table

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1-28

Direct Labor

Those labor costs that can be easily traced to individual units of product.



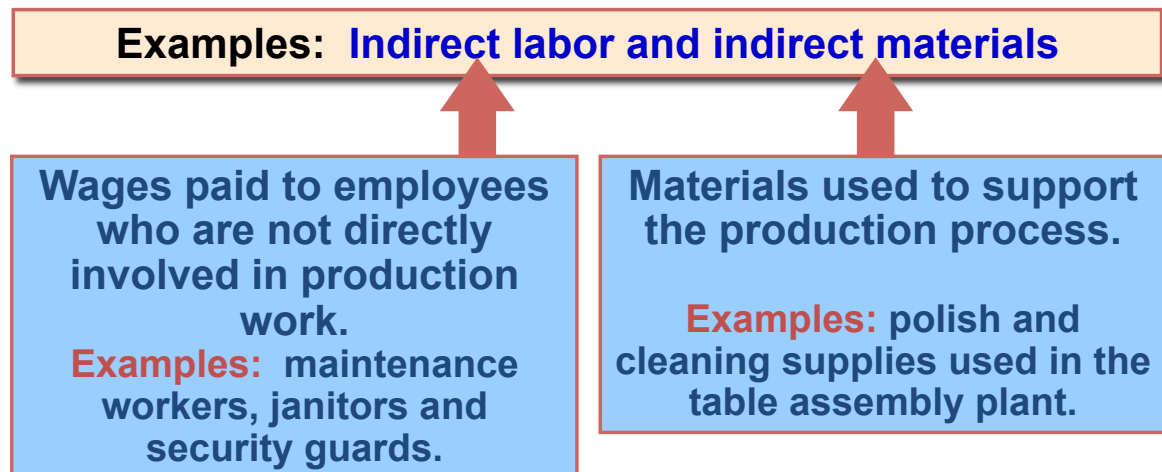
Example: Wages paid (\$) to table assembly workers

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1-29

Manufacturing Overhead

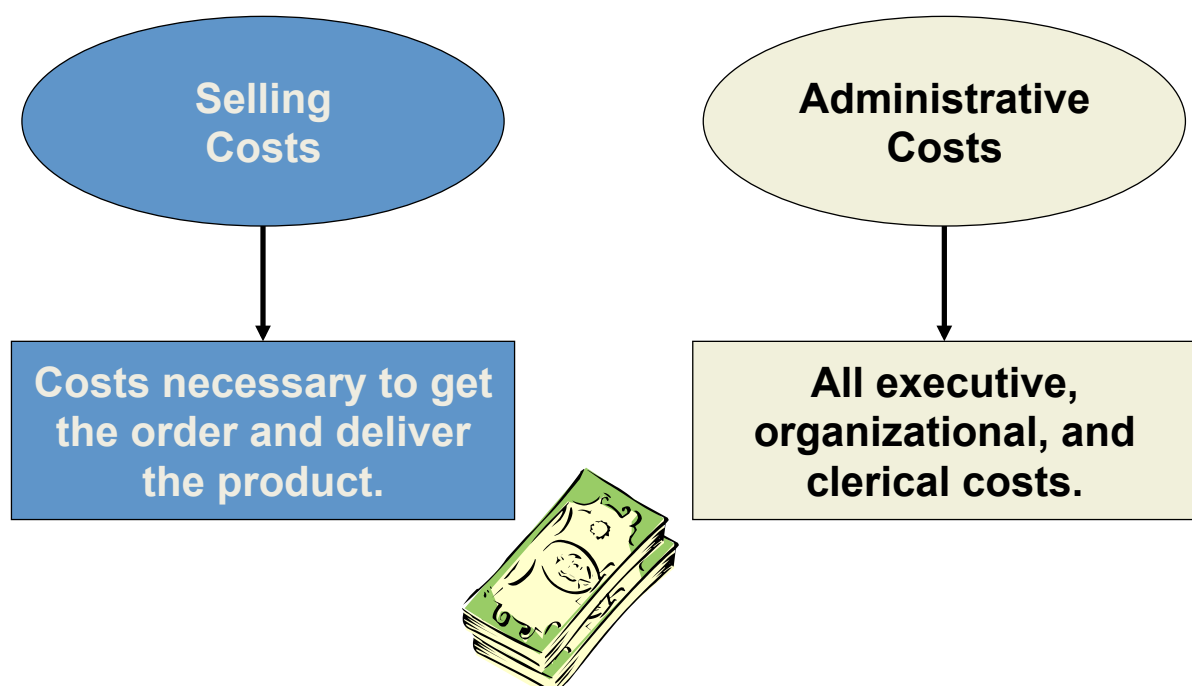
Manufacturing costs that **cannot** be traced directly to specific units produced.



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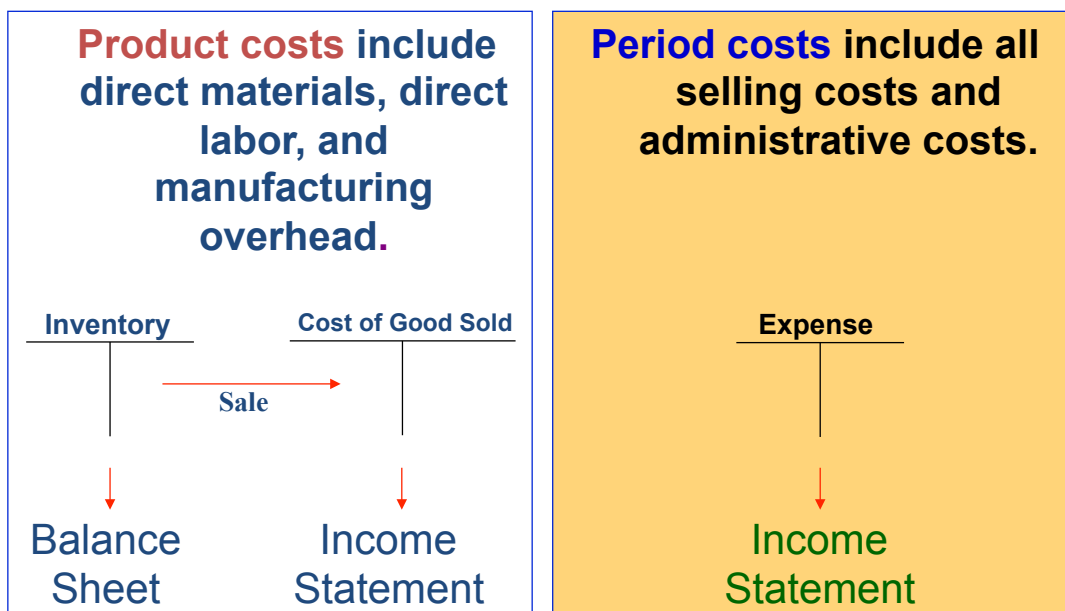
1-30

Non-manufacturing Costs



1-31

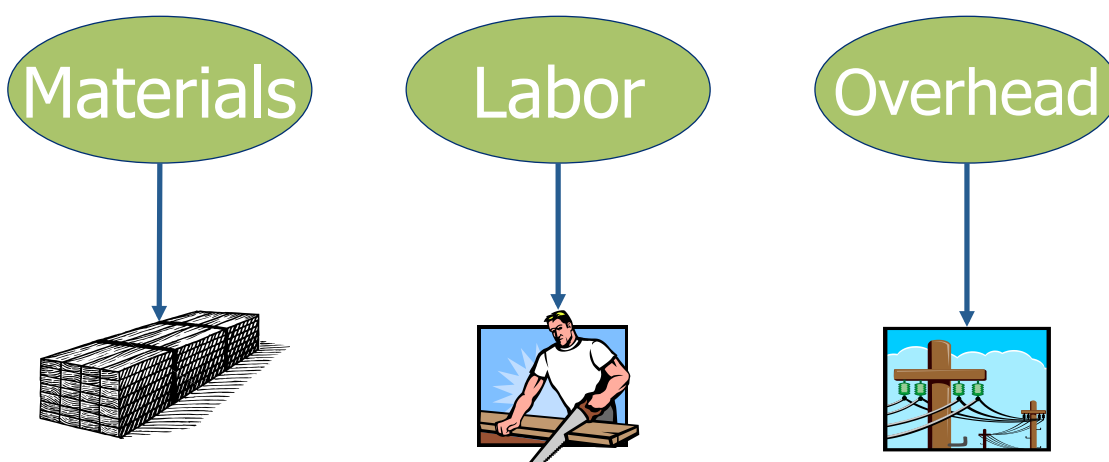
Product Costs Versus Period Costs



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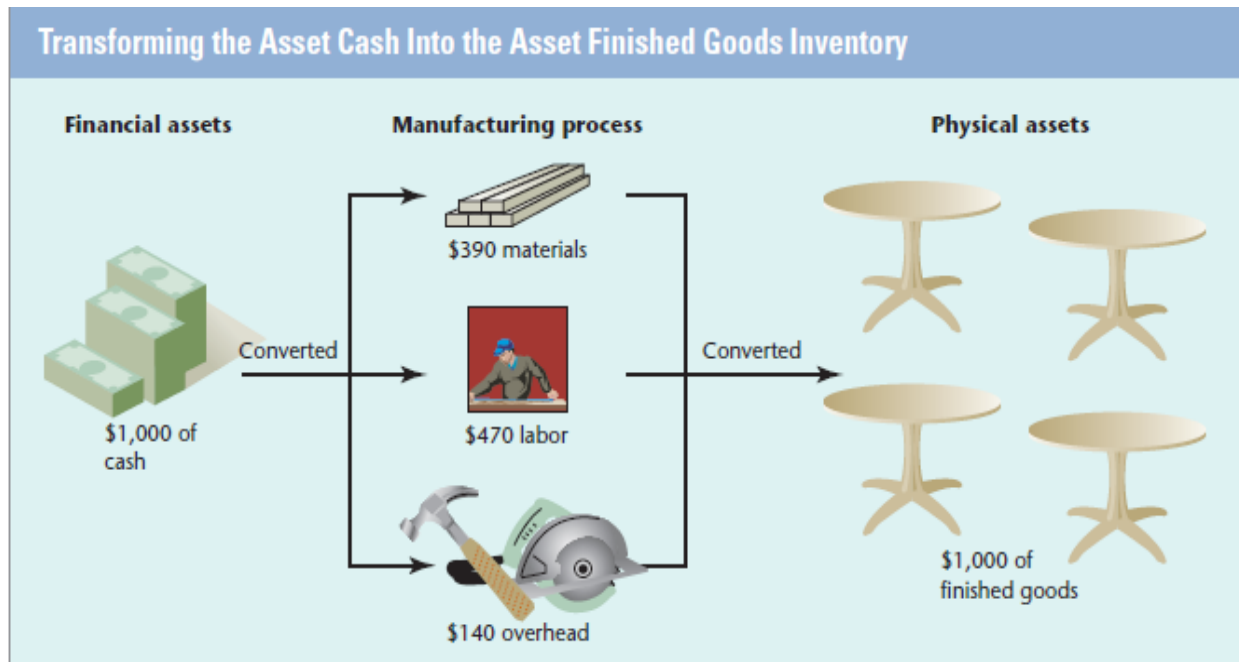
Components of Product Cost



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1-33

Components of Product Cost



1-34

Average Cost per Unit

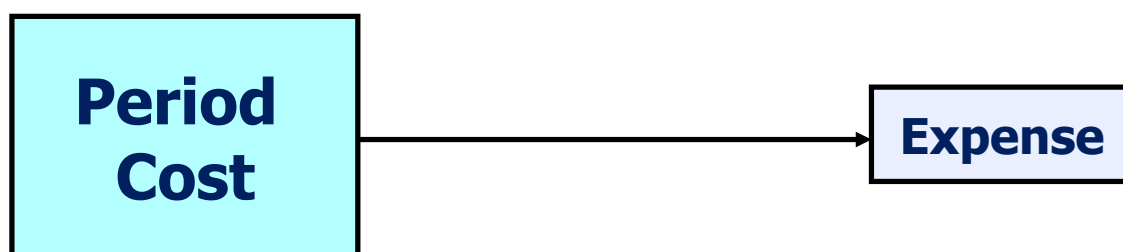
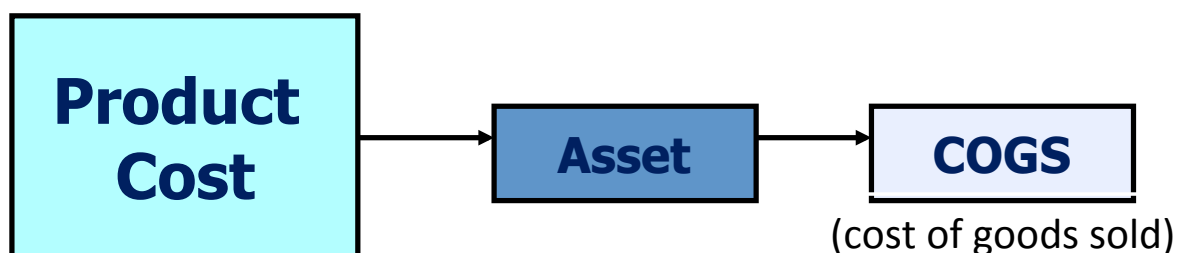
$$\frac{\text{Total Cost}}{\text{Number of Units}} = \text{Average Cost per Unit}$$

For example, Average Cost Per Unit

$$\frac{\$1,000}{4} = \$250$$

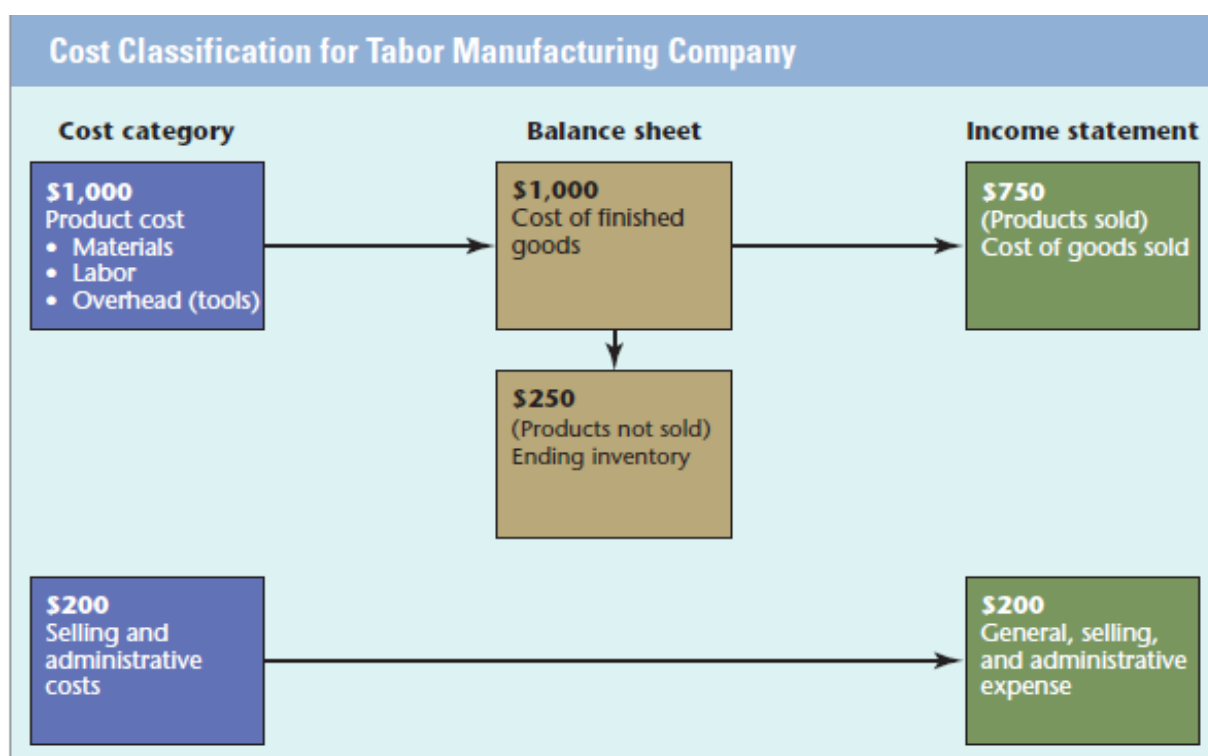
1-35

Remember that cost can be: Assets or Expenses



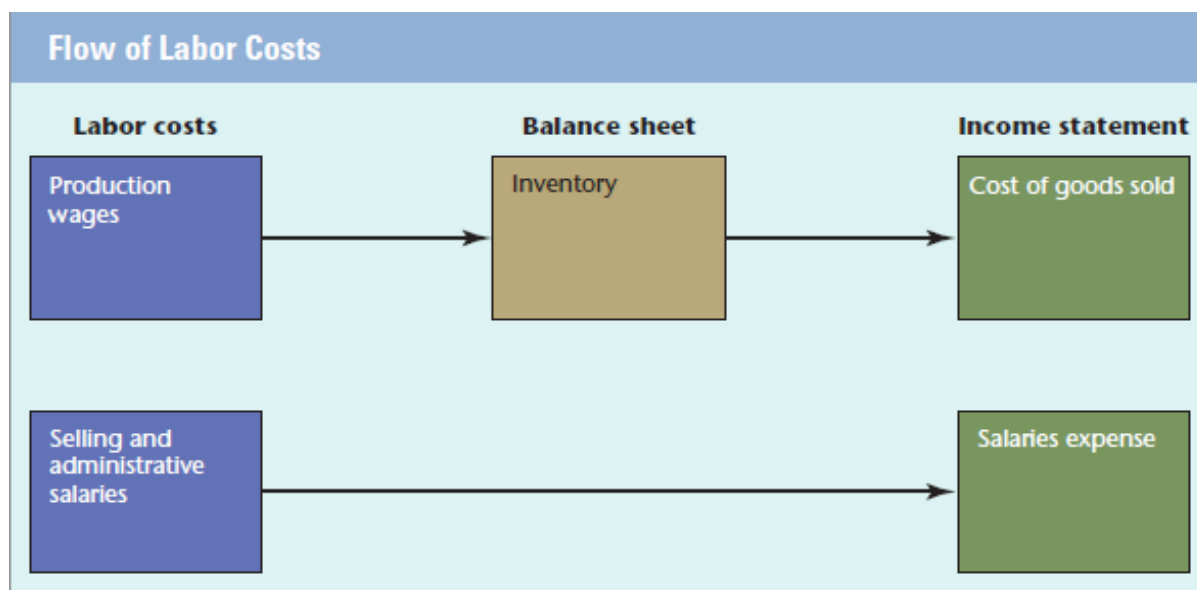
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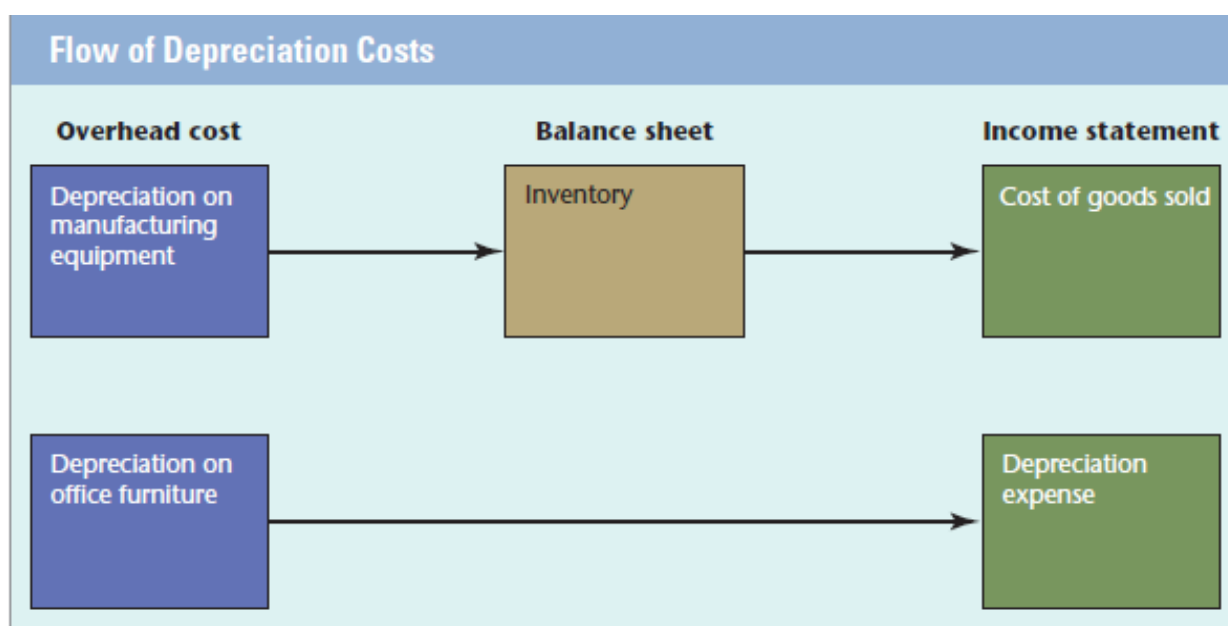


1-37

Labor Costs



Overhead Costs



Example: Patillo, experienced the following accounting events during its first year of operation. Register them:
(please assume that all transactions except 6, 8, and 10 are cash outflow)

1. Acquired \$15,000 cash by issuing common stock.
2. Paid \$2,000 for materials that were used to make products. All products started were completed during the period.
3. Paid \$1,200 for salaries of selling and administrative employees.
4. Paid \$3,000 for wages of production workers.
5. Paid \$2,800 for furniture used in selling and administrative offices.
6. Recognized depreciation on the office furniture purchased in Event 5. The furniture was acquired on January 1, had a \$400 estimated salvage value, and a four-year useful life. The annual depreciation charge is \$600 $[(\$2,800 - \$400) \div 4]$.
7. Paid \$4,500 for manufacturing equipment.
8. Recognized depreciation on the equipment purchased in Event 7. The equipment was acquired on January 1, had a \$1,500 estimated salvage value, and a three-year useful life. The annual depreciation charge is \$1,000 $[(\$4,500 - \$1,500) \div 3]$.
9. Sold inventory to customers for \$7,500 cash.
10. The inventory sold in Event 9 cost \$4,000 to make.

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Solution

Effect of Product versus Selling and Administrative Costs on Financial Statements																
Event No.	Assets								Equity			Rev. − Exp. = Net Inc.				
	Cash	+	Inventory	+	Office Furn.*	+	Manuf. Equip.*	=	Com. Stk.	+	Ret. Earn.					
1	15,000							=	15,000							
2	(2,000)	+	2,000													
3	(1,200)							=			(1,200)		−	1,200	= (1,200)	
4	(3,000)	+	3,000													
5	(2,800)	+			2,800											
6					(600)			=			(600)		−	600	= (600)	
7	(4,500)	+					4,500									
8			1,000	+			(1,000)									
9	7,500							=			7,500	7,500			= 7,500	
10			(4,000)					=			(4,000)		−	4,000	= (4,000)	
Totals	9,000	+	2,000	+	2,200	+	3,500	=	15,000	+	1,700	7,500	−	5,800	= 1,700	

*Negative amounts in these columns represent accumulated depreciation.

Total Product Cost

Schedule of Inventory Costs

Materials	\$2,000
Labor	3,000
Manufacturing overhead*	<u>1,000</u>
Total product costs	6,000
Less: Cost of goods sold	<u>(4,000)</u>
Ending inventory balance	<u>\$2,000</u>

*Depreciation $[(\$4,500 - \$1,500) \div 3]$

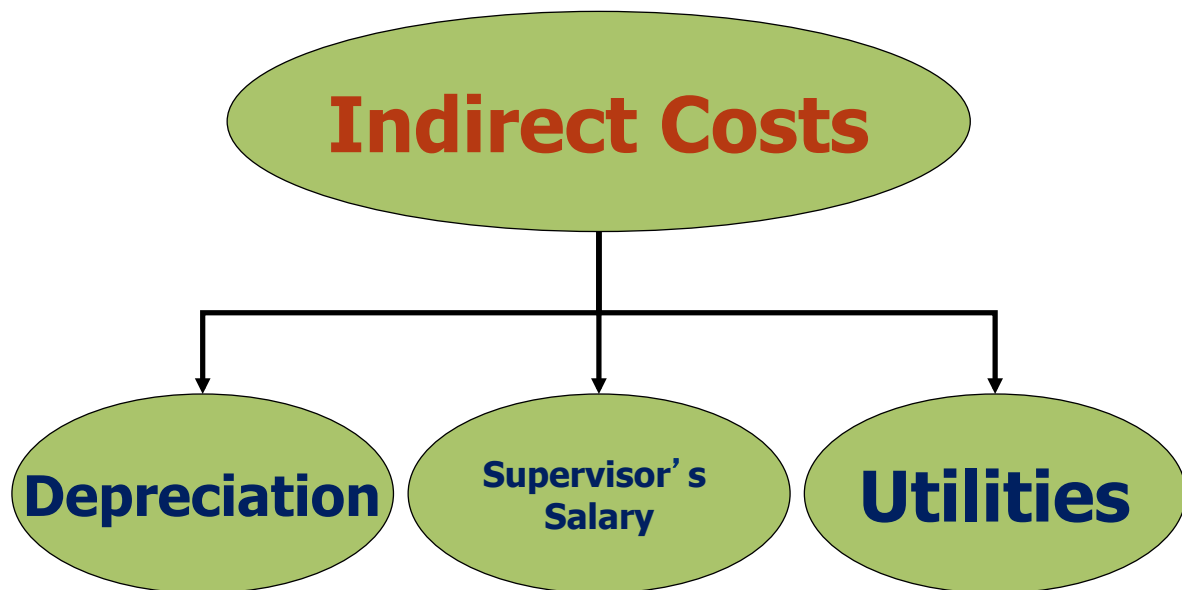
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PATILLO MANUFACTURING COMPANY		
Financial Statements		
Income Statement for 2016		
Sales revenue		\$ 7,500
Cost of goods sold		<u>(4,000)</u>
Gross margin		3,500
SG&A expenses		
Salaries expense		(1,200)
Depreciation expense—office furniture		<u>(600)</u>
Net income		<u>\$ 1,700</u>
Balance Sheet as of December 31, 2016		
Cash		\$ 9,000
Finished goods inventory		2,000
Office furniture	\$2,800	
Accumulated depreciation	<u>(600)</u>	
Book value		2,200
Manufacturing equipment	4,500	
Accumulated depreciation	<u>(1,000)</u>	
Book value		<u>3,500</u>
Total assets		<u>\$16,700</u>
Stockholders' equity		
Common stock		\$15,000
Retained earnings		<u>1,700</u>
Total stockholders' equity		<u>\$16,700</u>

1-43

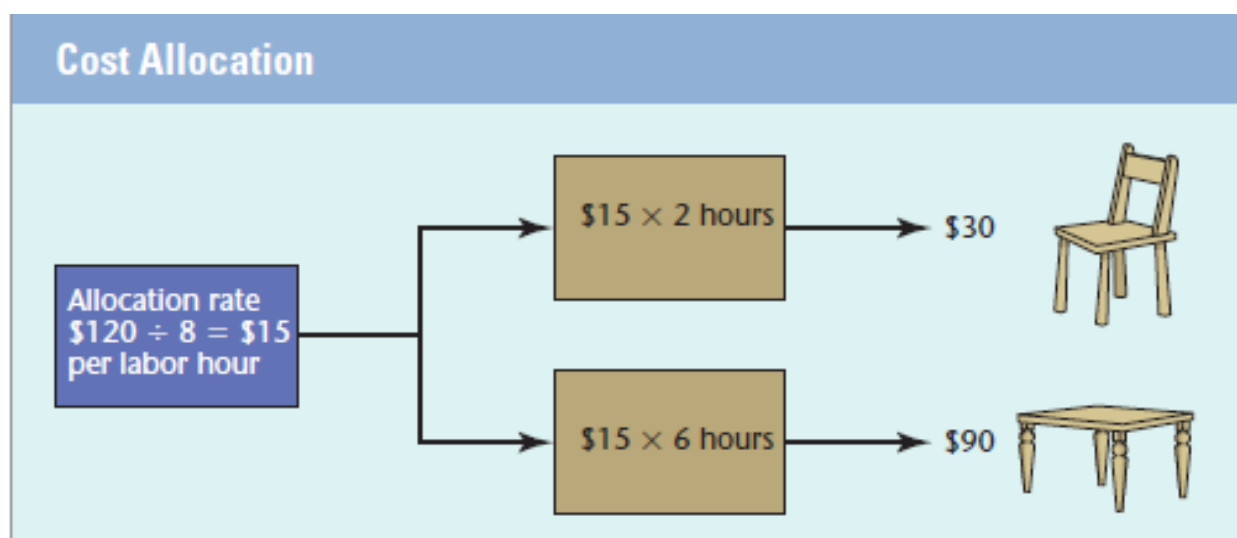
Overhead Costs: A Closer Look



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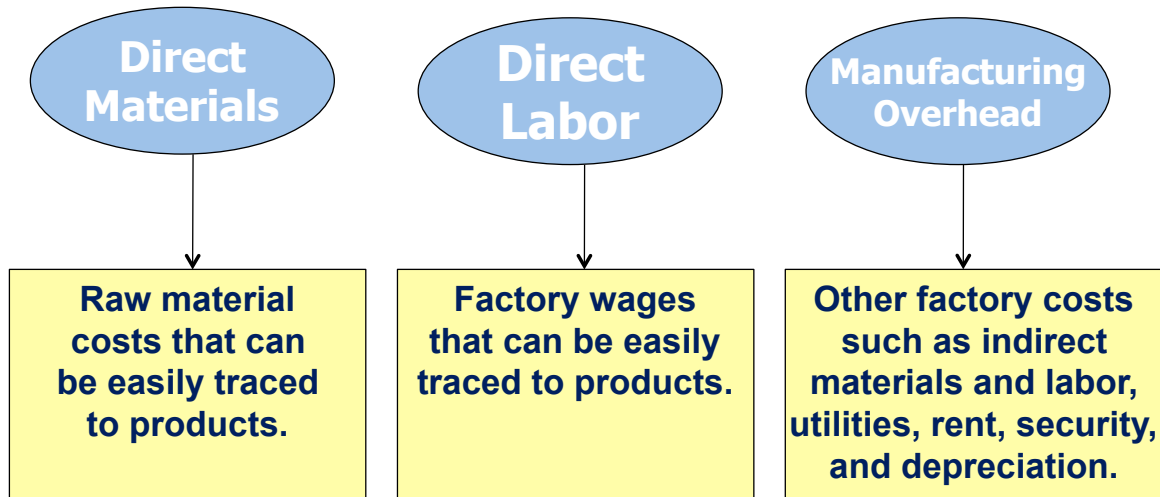
Indirect Cost Allocation



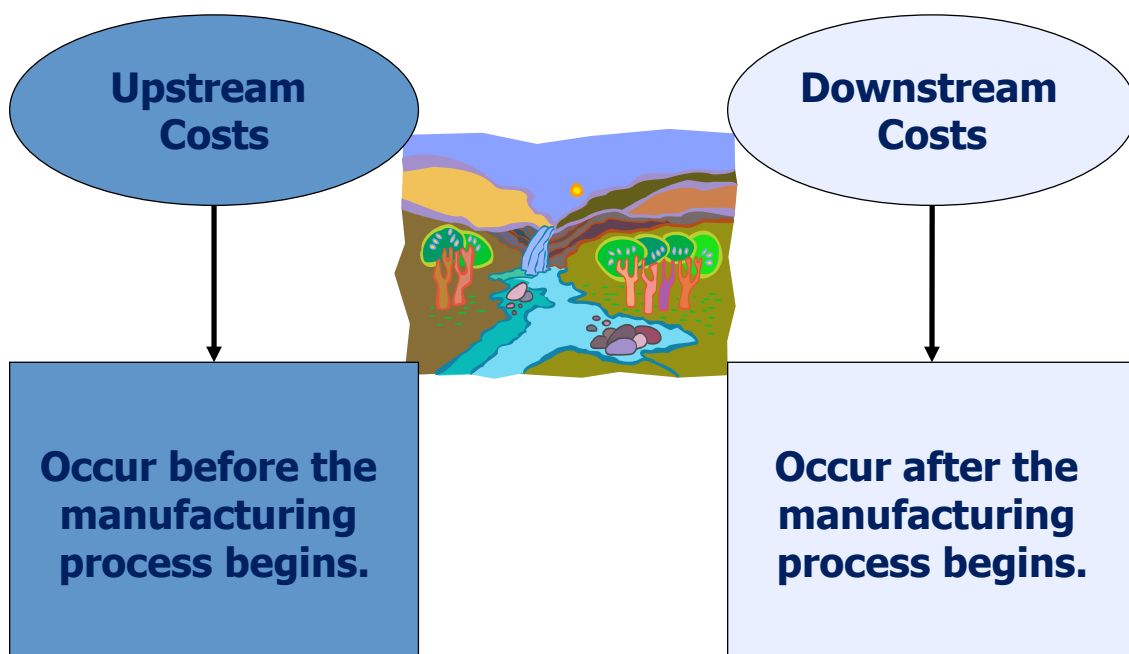
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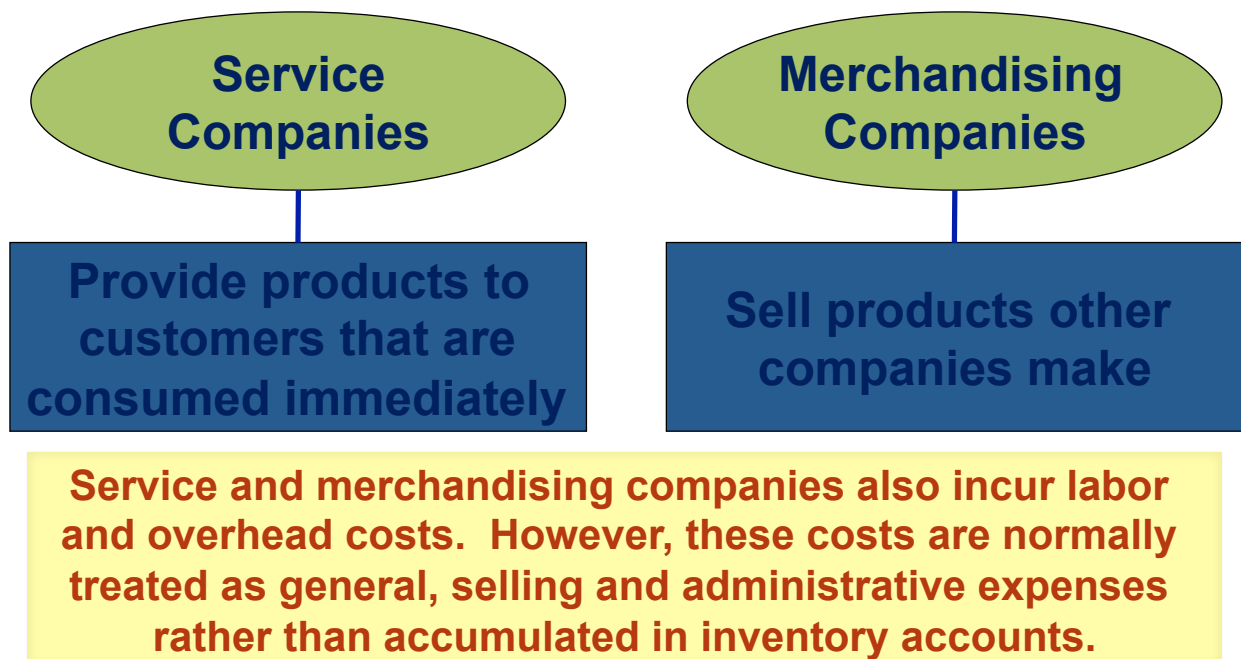
Manufacturing Product Cost Summary



Upstream and Downstream Costs



Product Costing in Service and Merchandising Companies

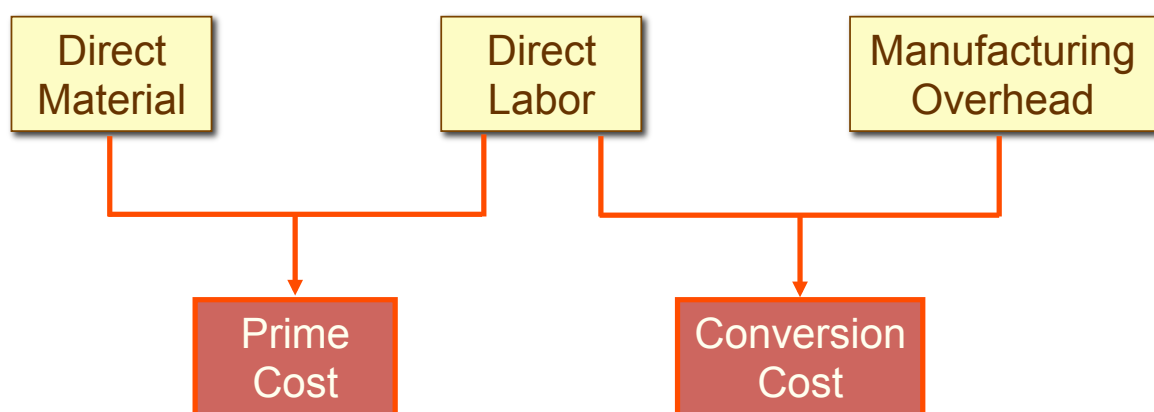


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1-48

Classifications of Costs

Manufacturing costs are often classified as follows:



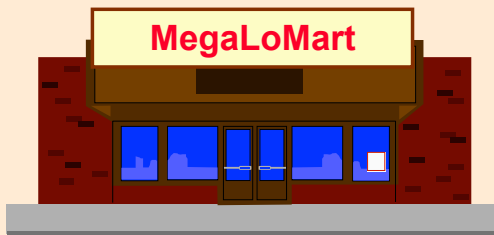
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1-49

Comparing Merchandising and Manufacturing Activities

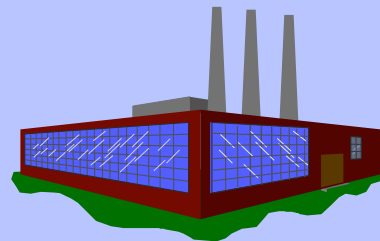
Merchandisers . . .

- Buy finished goods.
- Sell finished goods.



Manufacturers . . .

- Buy raw materials.
- Produce and sell finished goods.



1-50

Balance Sheet

Merchandiser

Current assets

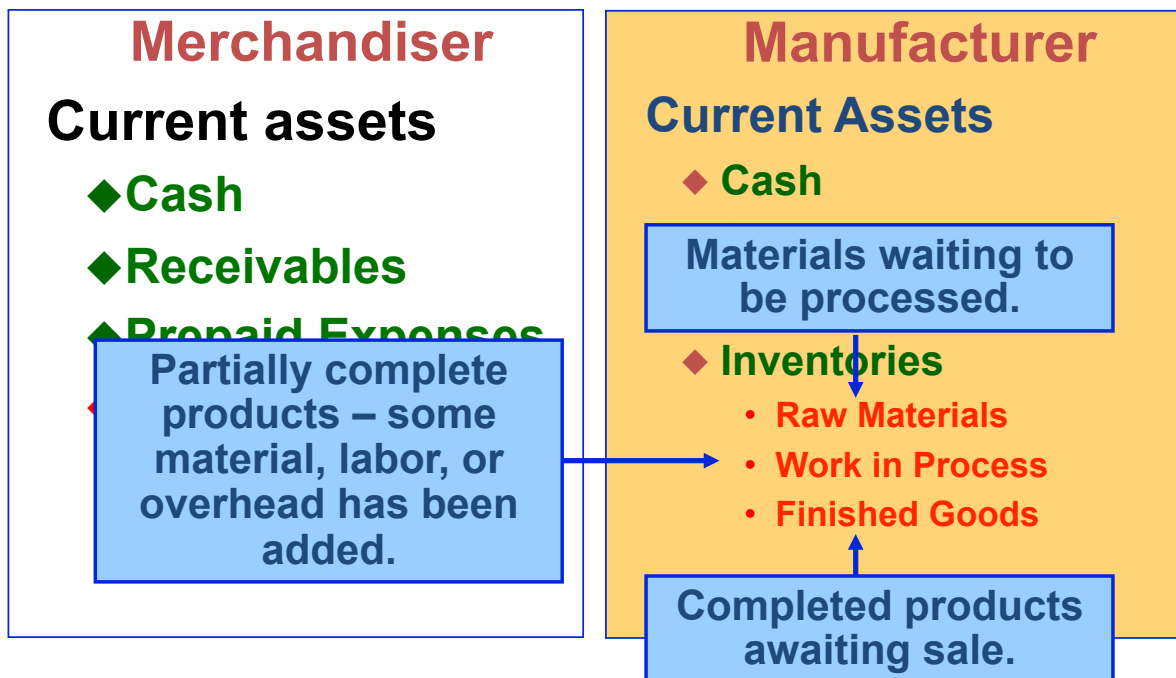
- ◆ Cash
- ◆ Receivables
- ◆ Prepaid Expenses
- ◆ Merchandise Inventory

Manufacturer

Current Assets

- ◆ Cash
- ◆ Receivables
- ◆ Prepaid Expenses
- ◆ Inventories
 - Raw Materials
 - Work in Process
 - Finished Goods

Balance Sheet



1-52

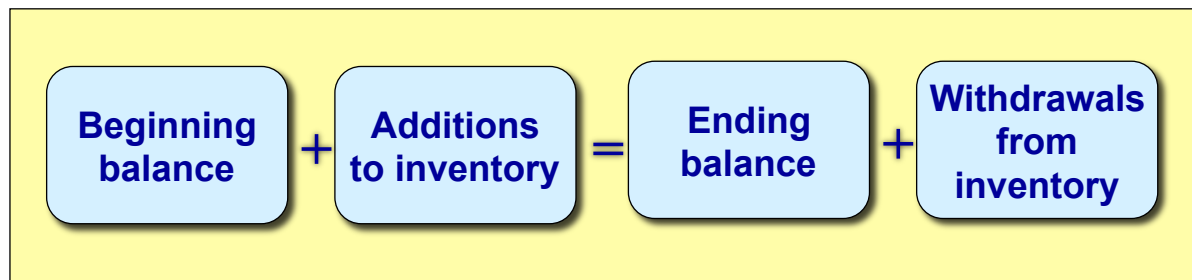
The Income Statement

Cost of goods sold for manufacturers differs only slightly from cost of goods sold for merchandisers.

Merchandising Company		Manufacturing Company	
Cost of goods sold:		Cost of goods sold:	
Beg. merchandise inventory	\$ 14,200	Beg. finished goods inv.	\$ 14,200
+ Purchases	234,150	+ Cost of goods manufactured	234,150
Goods available for sale	\$ 248,350	Goods available for sale	\$ 248,350
- Ending merchandise inventory	(12,100)	- Ending finished goods inventory	(12,100)
= Cost of goods sold	\$ 236,250	= Cost of goods sold	\$ 236,250

1-53

Basic Equation for Inventory Accounts



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1-54

Schedule of Cost of Goods Manufactured

Calculates the cost of raw material, direct labor and manufacturing overhead used in production.

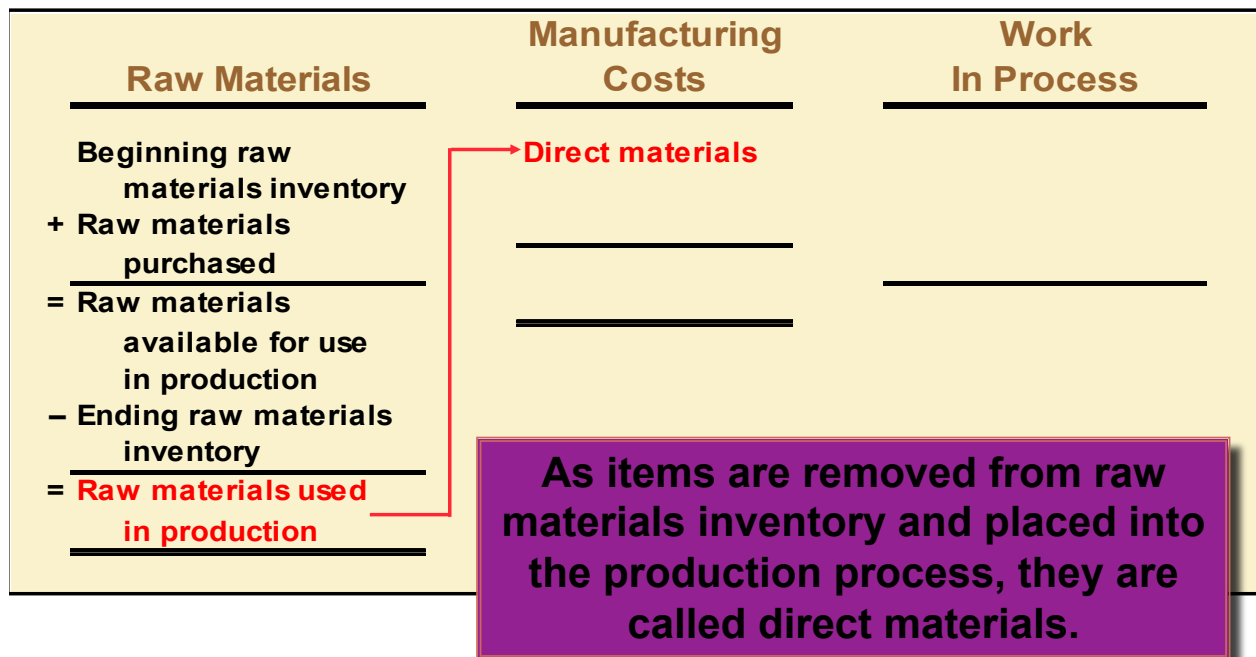
Calculates the manufacturing costs associated with goods that were finished during the period.



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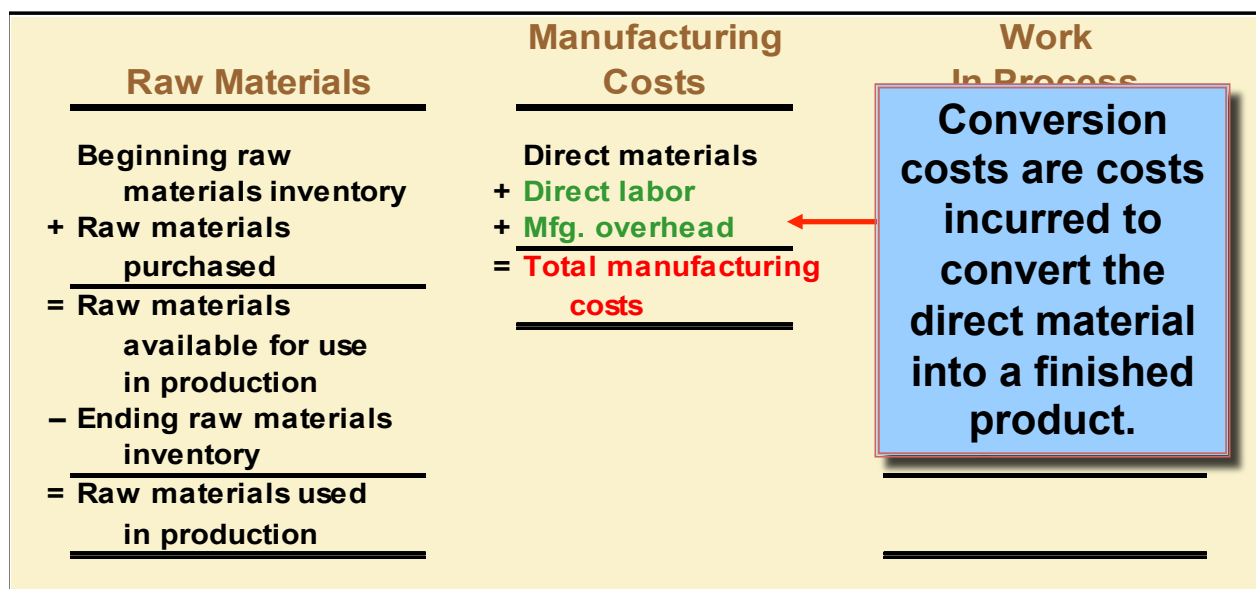
Product Cost Flows



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Product Cost Flows



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1-57

Product Cost Flows

<u>Raw Materials</u>	<u>Manufacturing Costs</u>	<u>Work In Process</u>
Beginning raw materials inventory	Direct materials	Beginning work in process inventory
+ Raw materials purchased	+ Direct labor	+ Total manufacturing costs
= Raw materials available for use in production	+ Mfg. overhead	= Total work in process for the period
- Ending raw materials inventory	= Total manufacturing costs	
= <u>Raw materials used in production</u>		

All manufacturing costs incurred during the period are added to the beginning balance of work in process.

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Product Cost Flows

<u>Raw Materials</u>	<u>Manufacturing Costs</u>	<u>Work In Process</u>
Beginning raw materials inventory	Direct materials	Beginning work in process inventory
+ Raw materials purchased	+ Direct labor	+ Total manufacturing costs
= Raw materials available for use in production	+ Mfg. overhead	= Total work in process for the period
- Ending raw materials	= <u>Total manufacturing costs</u>	- Ending work in process inventory
		= Cost of goods manufactured

Costs associated with the goods that are completed during the period are transferred to finished goods inventory.

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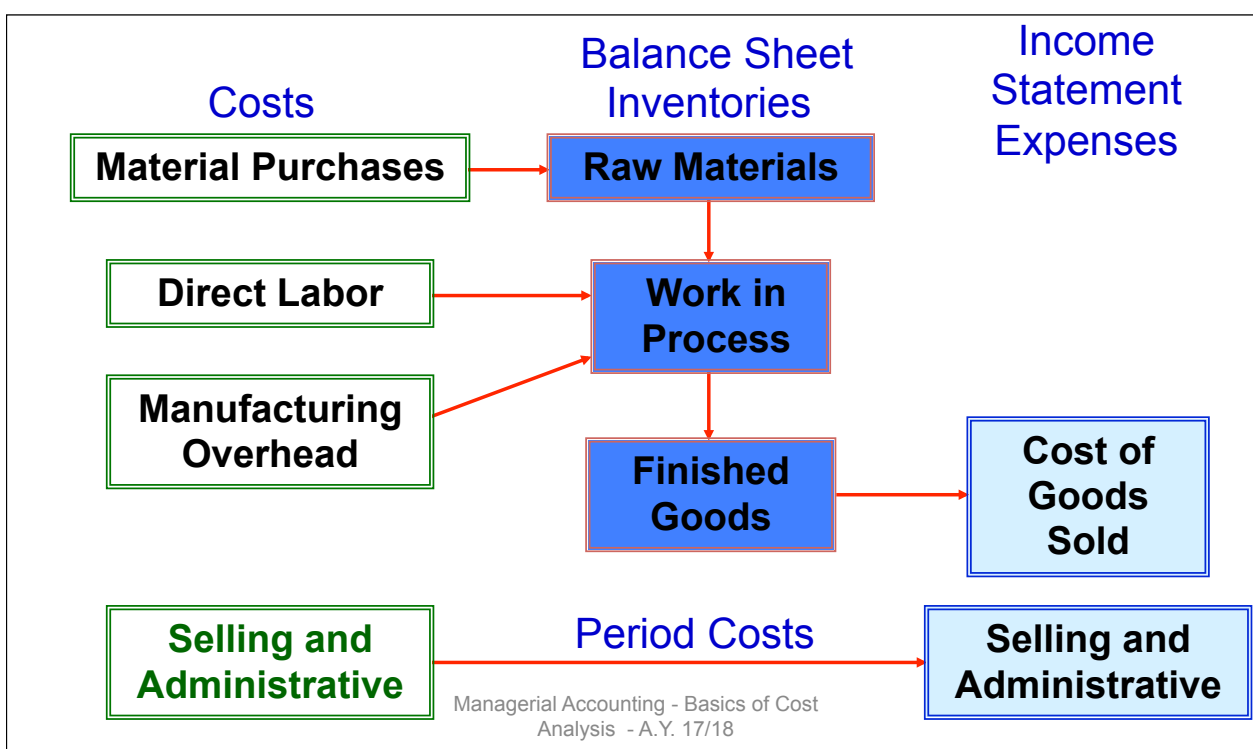
Product Cost Flows

Work In Process	Finished Goods
Beginning work in process inventory	Beginning finished goods inventory
+ Manufacturing costs for the period	+ Cost of goods manufactured
= Total work in process for the period	= Cost of goods available for sale
- Ending work in process inventory	- Ending finished goods inventory
= Cost of goods manufactured	Cost of goods sold

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1-60

Manufacturing Cost Flows



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Exercise: Demonstration Problem 1



Eiffel Manufacturing Company makes small replicas of major landmarks that it sells to souvenir shops. The company was started on January 1, 2014, when it acquired \$60,000 cash from the issue of common stock. During 2014, the company purchased and used raw materials that cost \$16,000 cash. It paid wages of \$22,000 cash to the workers who made the replicas. Finally, manufacturing overhead costs, including rental fees paid for facilities and equipment, amounted to \$12,000 cash. The company started and completed the production of 1,000 replicas during 2014.

Required:

- Determine the amount of expense Eiffel incurred in 2014, assuming none of the replicas was sold in 2014.
- Record the accounting events associated with making the 1,000 replicas in a financial statements model (please use the Horizontal Statement Model)
- Determine the cost per unit of the 1,000 replicas. Determine the sales price per unit assuming the products are sold for cost plus 40% of cost.
- Record the sale of 800 replicas.
- Record the payment of a \$4,000 sales commission to the salesperson who sold the replicas

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Learning Objective



**Show how just-in-time
inventory could
increase profitability.**

LO3

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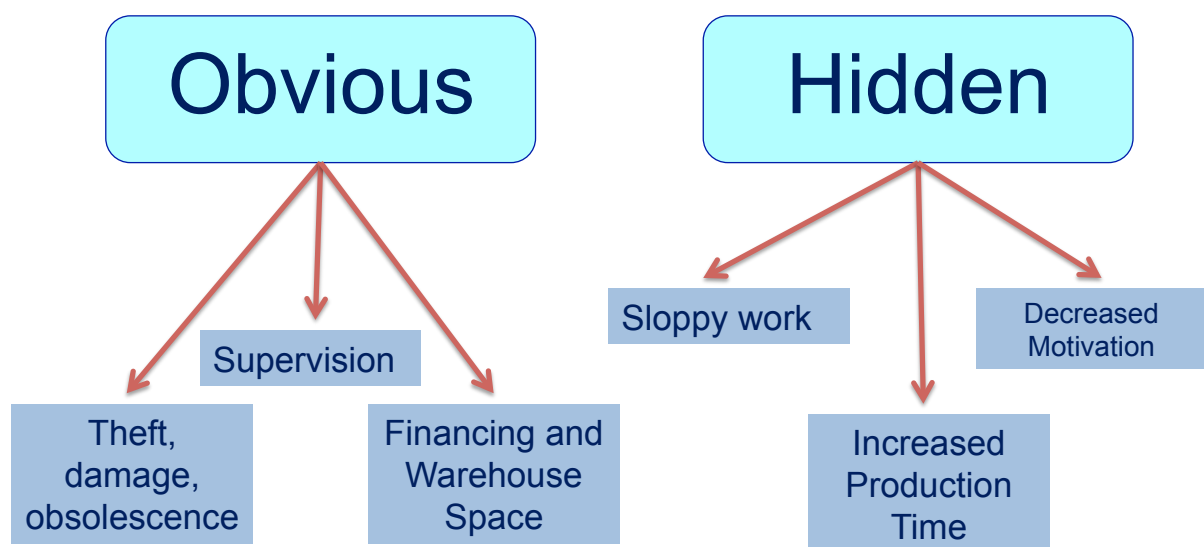
Just-in-Time

Many businesses have been able to simultaneously reduce their inventory holding costs and increase customer satisfaction by making products available just-in-time (JIT) for customer consumption.

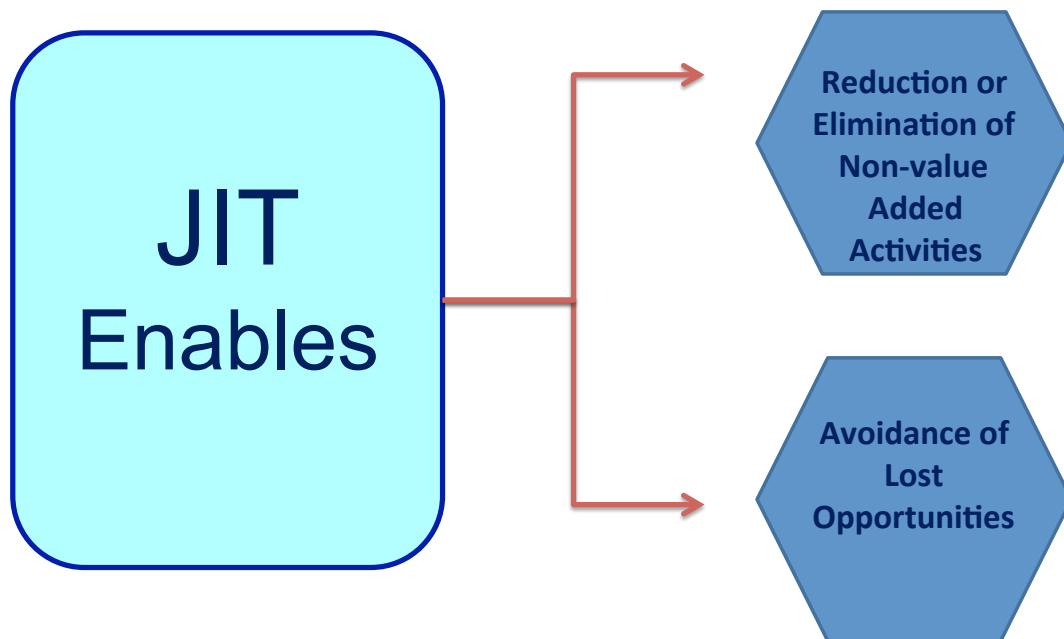
For example, hamburgers that are cooked to order are fresher and more individualized than those that are prepared in advance and stored until a customer orders one.



Inventory Holding Costs



Just-in-Time Inventory



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Learning Objective



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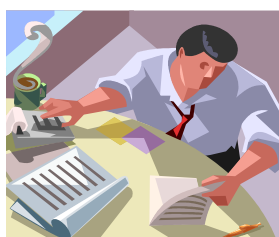
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Corporate Governance

Corporate governance is a set of relationships between the board of directors, management, shareholders, auditors, and other stakeholders that determine how a company is operated.



Board of Directors



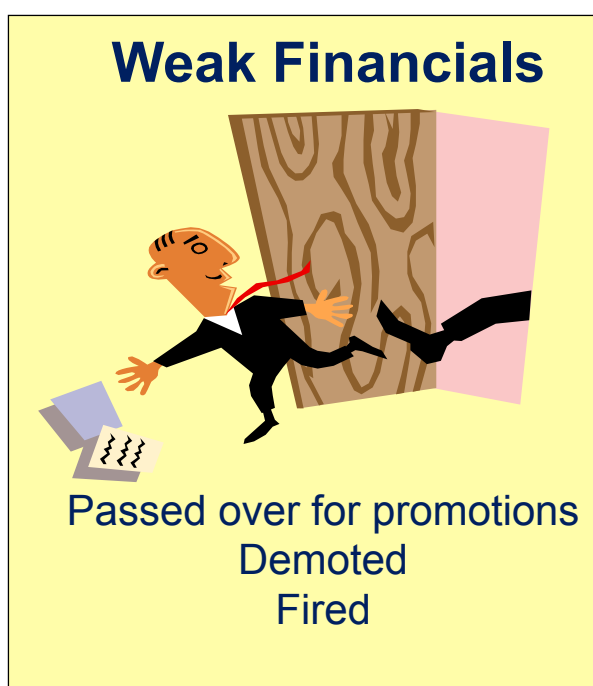
Auditors



Management

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The Motive to Manipulate



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Marion Manufacturing Company

Marion Manufacturing Company (MMC) had the following transactions:

1. MMC was started when it acquired \$12,000 from issuing common stock.
2. MMC incurred \$4,000 of costs to design its product and plan the manufacturing process.
3. MMC incurred specifically identifiable product costs of \$8,000.
4. MMC made 1,000 units of product and sold 700 of the units for \$18 each.

Let's look at two scenarios for MMC.

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Marion Manufacturing Company

Scenario

1

The \$4,000 of design and planning costs are classified as selling and general and administrative.

Scenario 2

The \$4,000 of design and planning costs are classified as product costs, meaning they are first accumulated in the inventory account and then expensed when the goods are sold.

Financial Statements Under Alternative Cost Classification Scenarios

Income Statements	Scenario 1	Scenario 2
Sales revenue ($700 \times \$18$)	\$12,600	\$12,600
Cost of goods sold	<u>(5,600)¹</u>	<u>(8,400)³</u>
Gross margin	7,000	4,200
Selling and administrative expense	<u>(4,000)</u>	<u>0</u>
Net income	<u>\$ 3,000</u>	<u>\$ 4,200</u>

Balance Sheets		
Assets		
Cash	\$12,600	\$12,600
Inventory	<u>2,400²</u>	<u>3,600⁴</u>
Total assets	<u>\$15,000</u>	<u>\$16,200</u>
Stockholders' equity		
Common stock	\$12,000	\$12,000
Retained earnings	<u>3,000</u>	<u>4,200</u>
Total stockholders' equity	<u>\$15,000</u>	<u>\$16,200</u>

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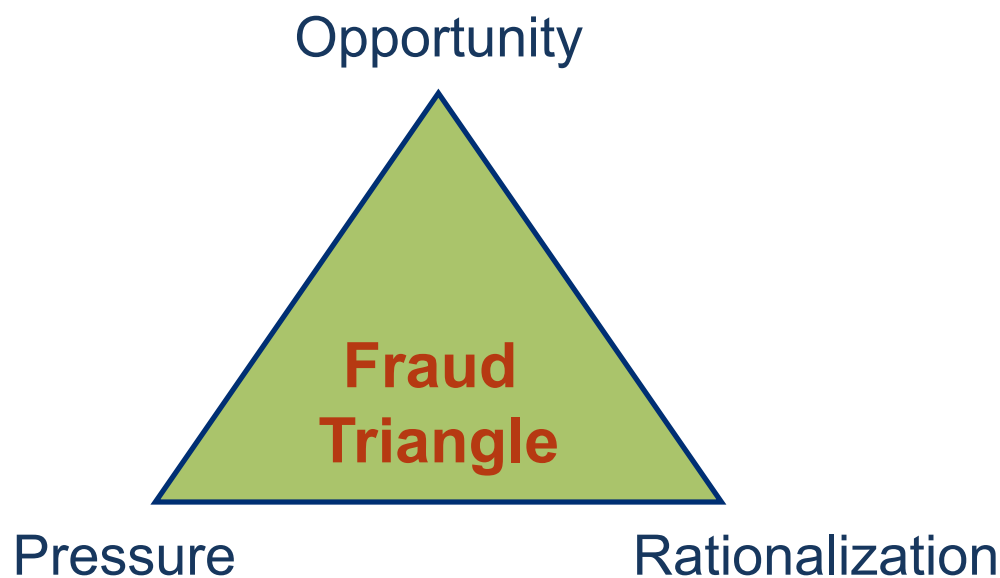
Ethical Considerations

- ✎ Certified Management Accountants are guided by the *IMA Statement of Ethical Professional Practice*
- ✎ The statement provides standards on
 - ✎ Competence
 - ✎ Confidentiality
 - ✎ Integrity
 - ✎ Credibility
 - ✎ Resolution of ethical conflict

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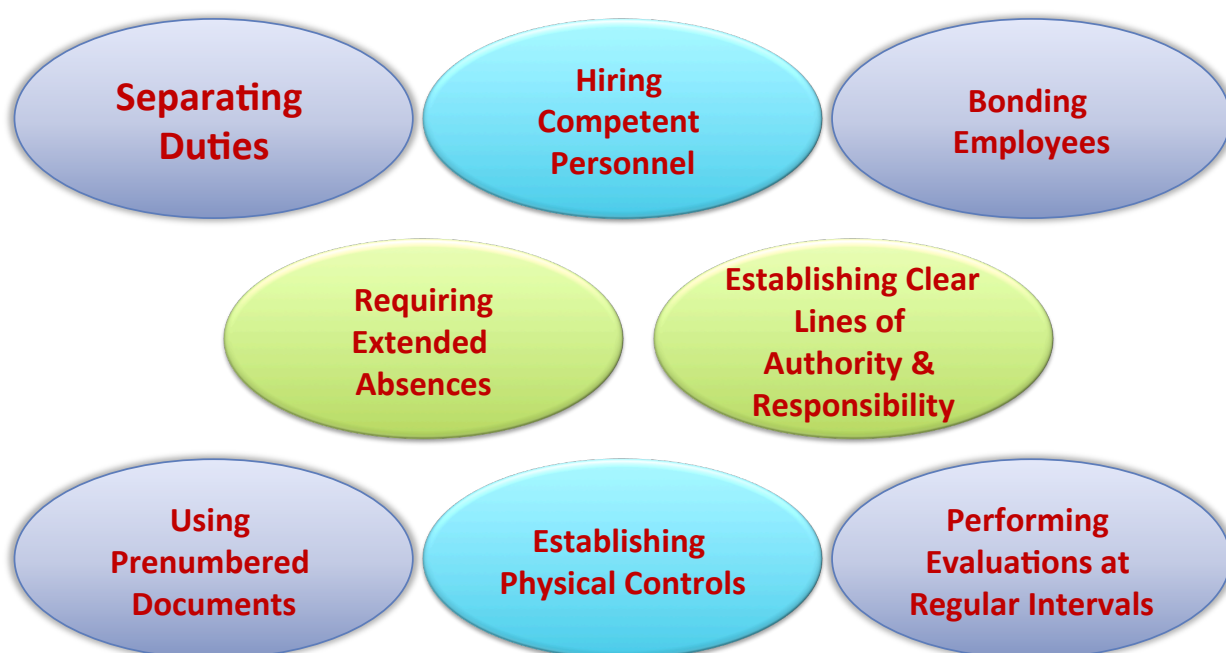
Common Features of Criminal and Ethical Misconduct



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Internal Control Practices



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Exercise: Demonstration Problem 2



Klyn Manufacturing Company experienced the following accounting events during its first year of operation.

Except for the depreciation adjusting entries, all transactions are cash transactions.

1. Acquired \$50,000 cash from the issue of common stock.
2. Paid \$6,800 for the materials that were used to make its products. All products started were completed during the period.
3. Paid salaries of \$4,300 to selling and administrative employees.
4. Paid wages of \$7,200 to production workers.
5. On January 1, paid \$9,000 to buy furniture used in selling and administrative offices.
6. Recorded annual depreciation on the furniture referred to in Event 5. The furniture had a \$1,000 estimated salvage value and a 5-year useful life.

..continue..

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Exercise: Demonstration Problem 2



..continue..

7. On January 1, paid \$23,000 to buy manufacturing equipment.
8. Recorded annual depreciation on the equipment referred to in Event 7. It had a \$3,000 estimated salvage value and a 4-year useful life.
9. Completed 4,000 units of product. Determine the cost per unit and the sales price per unit assuming the sales price is cost plus 60% of cost. Record the sale of 3,000 units of product.
10. Code the recognition of cost of goods sold for the units sold in Event 9.

Required

Show how these events would affect the balance sheet and income statement by recording them in a horizontal financial statements model like the one shown below. The first event is recorded as an example.

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