

University of Rome



DEPT. MANAGEMENT & LAW

BACHELOR DEGREE IN BUSINESS ADMINISTRATION & ECONOMICS

***COURSE***

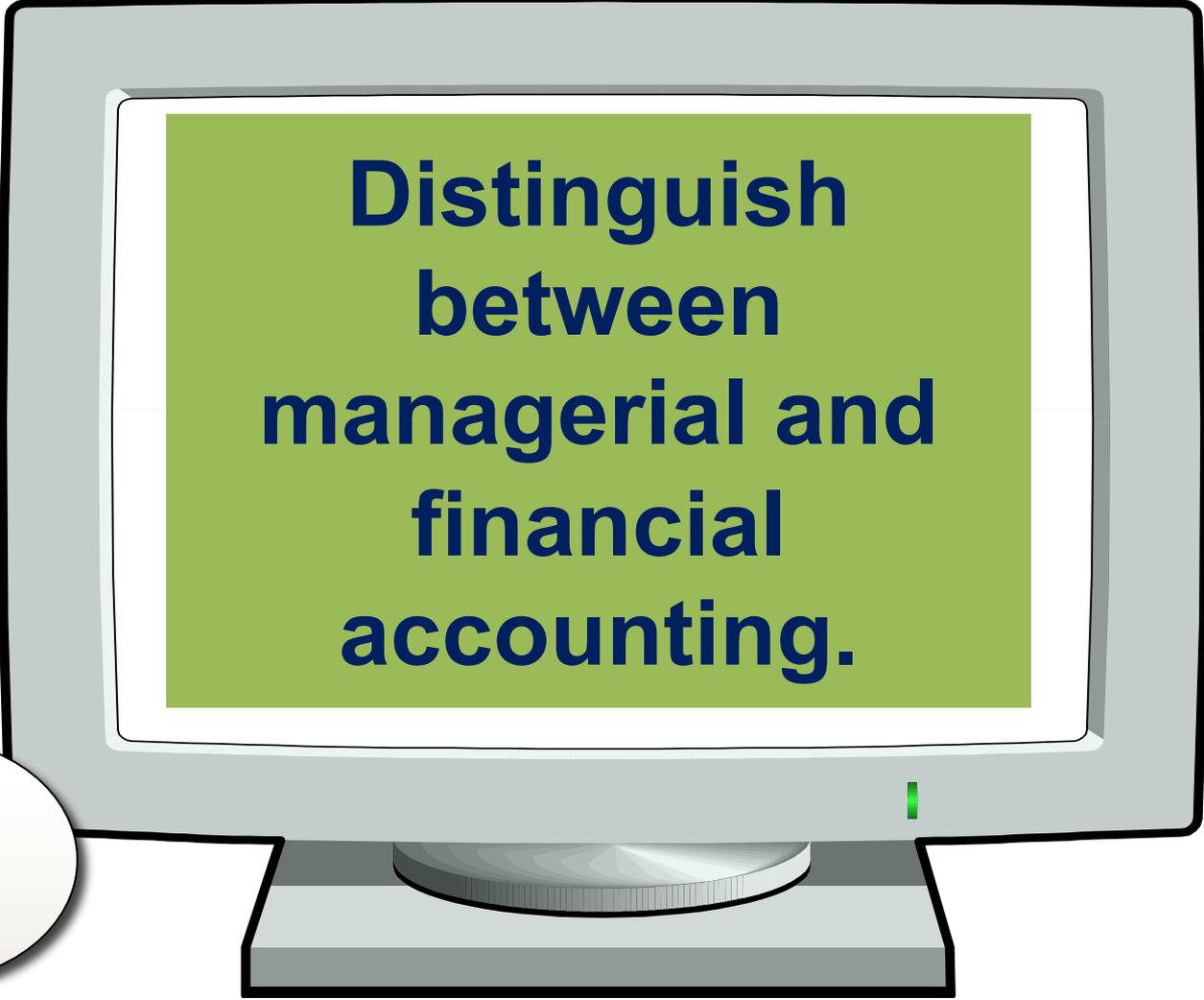
***Cost Analysis for Business Decisions***

# **Managerial Accounting, Planning & Control**

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# Learning Objective



**Distinguish  
between  
managerial and  
financial  
accounting.**

**L01**

# 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	←
	\$ 8,500	
Gross margin .....	4,300	
Marketing and administrative costs .....	\$ 4,200	←
Operating profit .....	\$ 4,200	

**Cost of  
billable  
hours**

**The excess of operating revenue over costs  
necessary to generate those revenues  
related to services provided**

# 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) .....	<u>1,775</u>
Gross margin .....	\$1,450
Marketing and administrative costs .....	<u>825</u>
Operating profit .....	<u>\$ 625</u>

**Expense assigned  
to products sold  
during a period**

**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 .....	<u>90</u>	
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>

# Presentation of Costs in Financial Statements

Cost incurred to manufacture  
the product sold

Product costs recorded as  
"inventory" when cost is incurred

Expense when sold

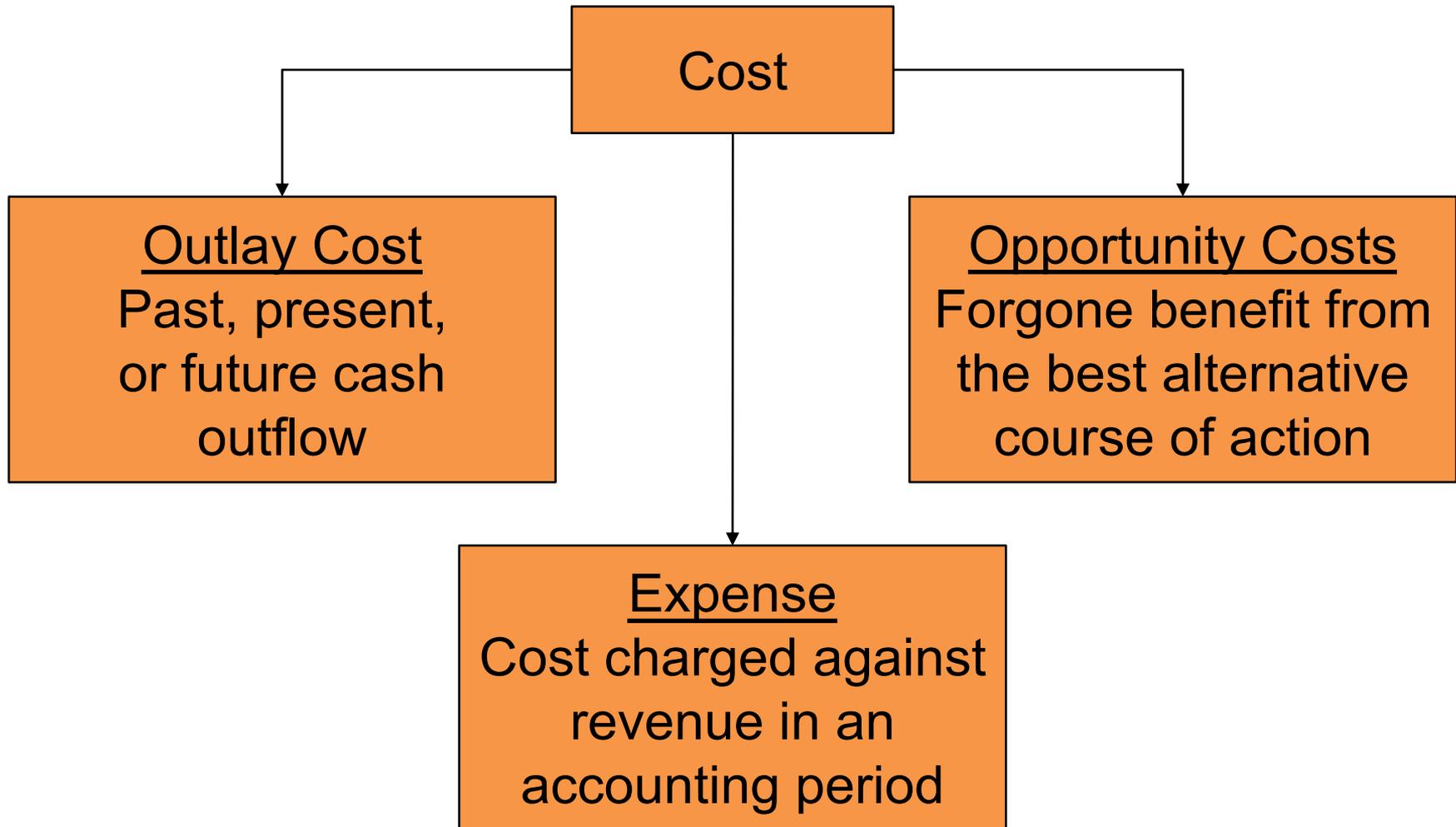
## JACKSON GEARS Income Statement

For the Year Ending December 31, Year 2  
(\$000)

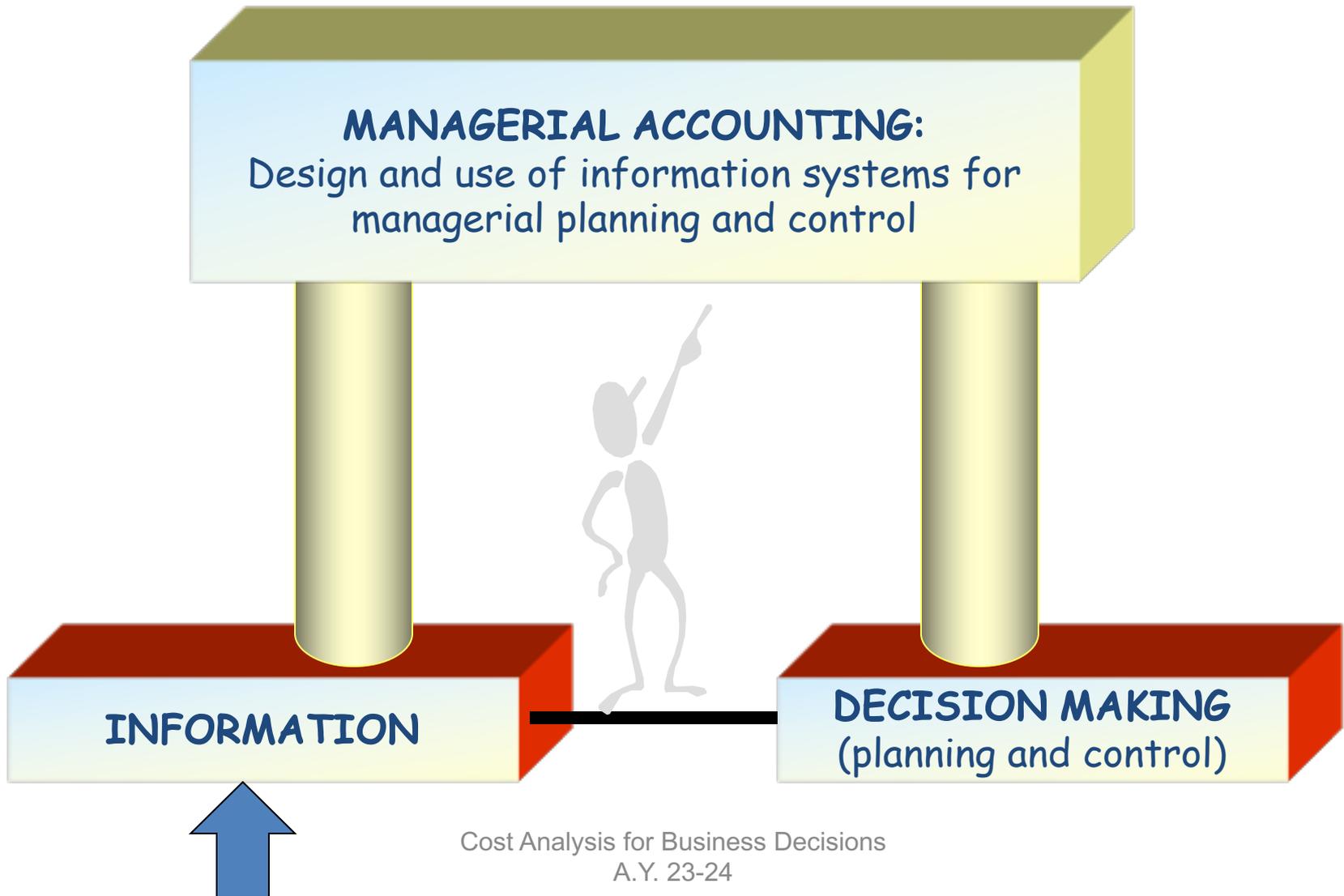
Sales revenue . . . . .		\$20,450
Cost of goods sold		<u>13,100</u>
Gross margin . . . . .		\$ 7,350
Less marketing and administrative costs . . . . .		<u>3,850</u>
Operating profit before taxes . . . . .		<u>\$ 3,500</u>

Period costs recorded as  
an expense in the period  
the cost is incurred

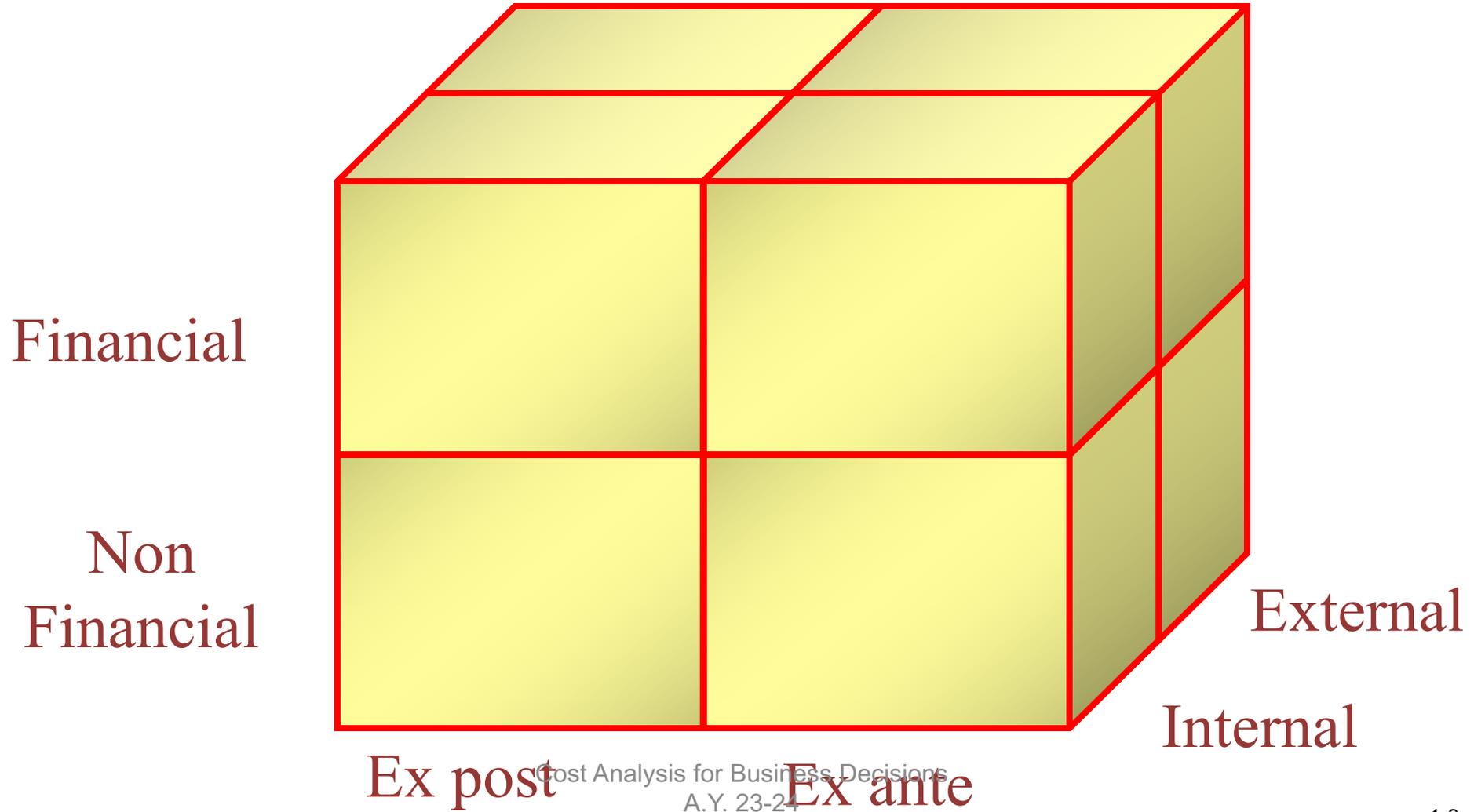
# Cost versus Expenses



# Managerial Accounting

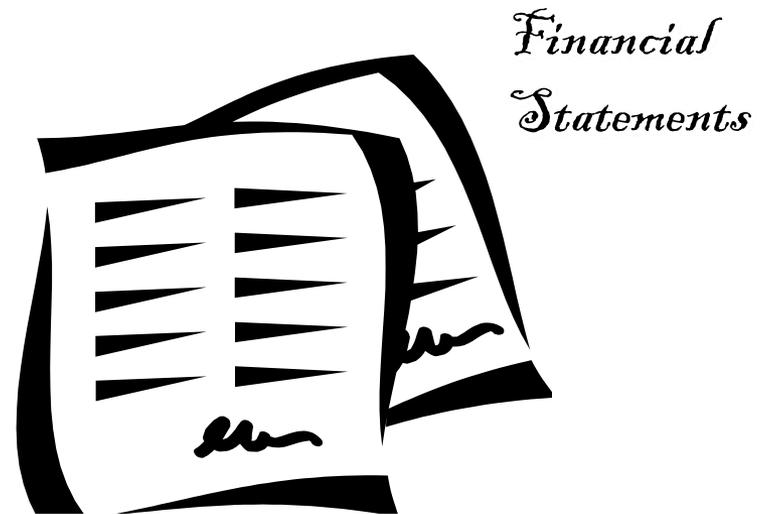


# Three-Way Classification Scheme of Information



# Accounting Information System

Process of gathering, organizing, and  
Communicating financial information



# Users of Accounting Information

Managerial Accounting

Internal managers

**Day-to-day operating decisions**  
**Long-range strategic decisions**

Financial Accounting

External Users

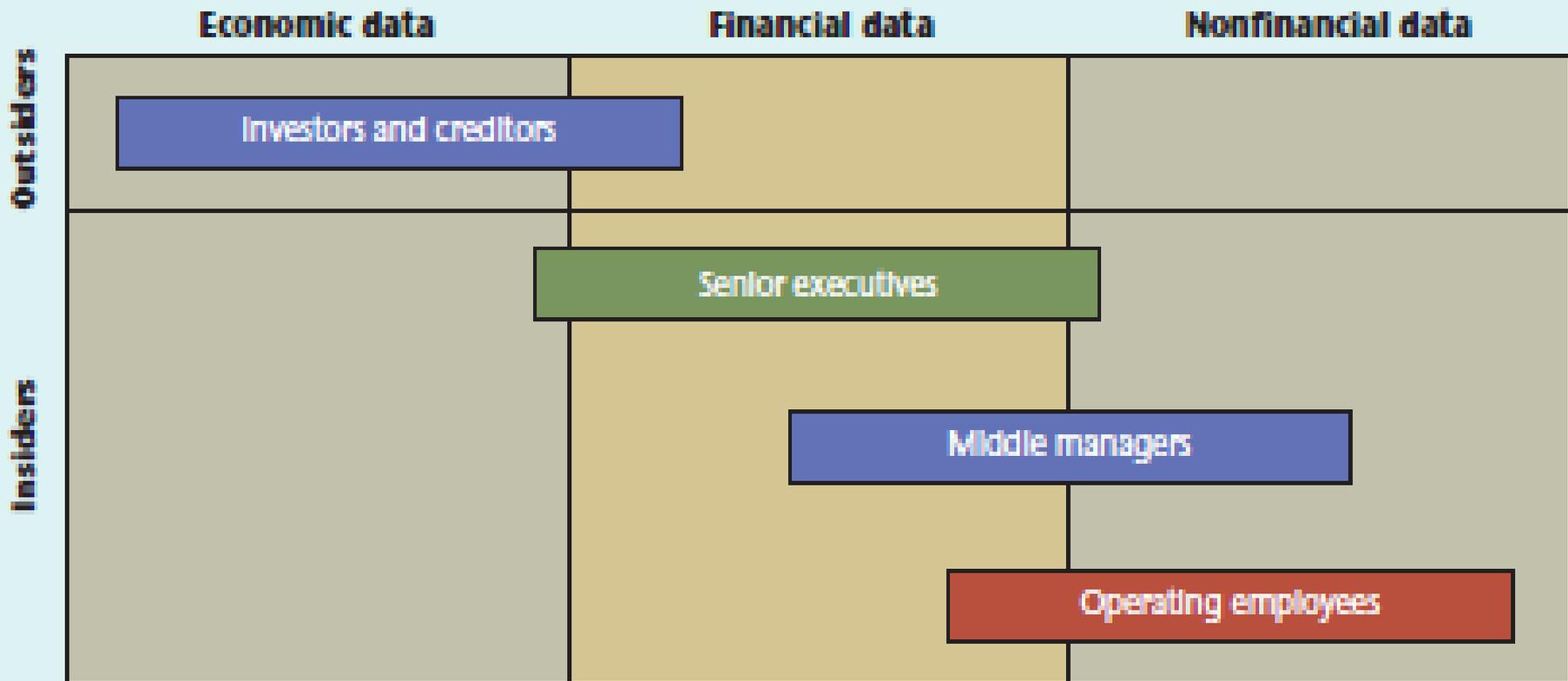
Investors: Stockholders

Creditors:  
Suppliers  
Bankers

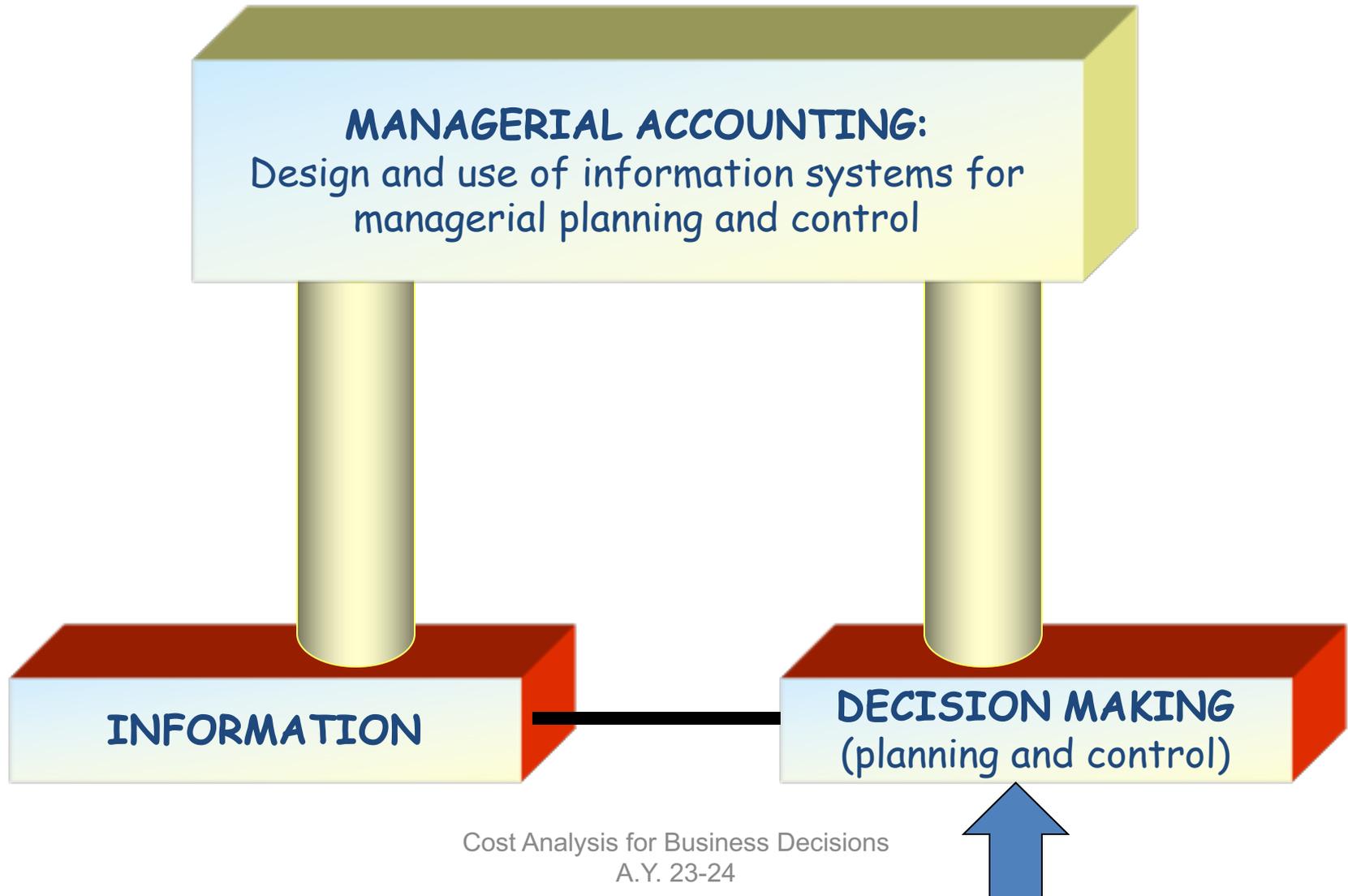
Government Authorities

# Comparison of Financial and Managerial Accounting

## Relationship Between Type of User and Type of Information



# Managerial Accounting



# 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

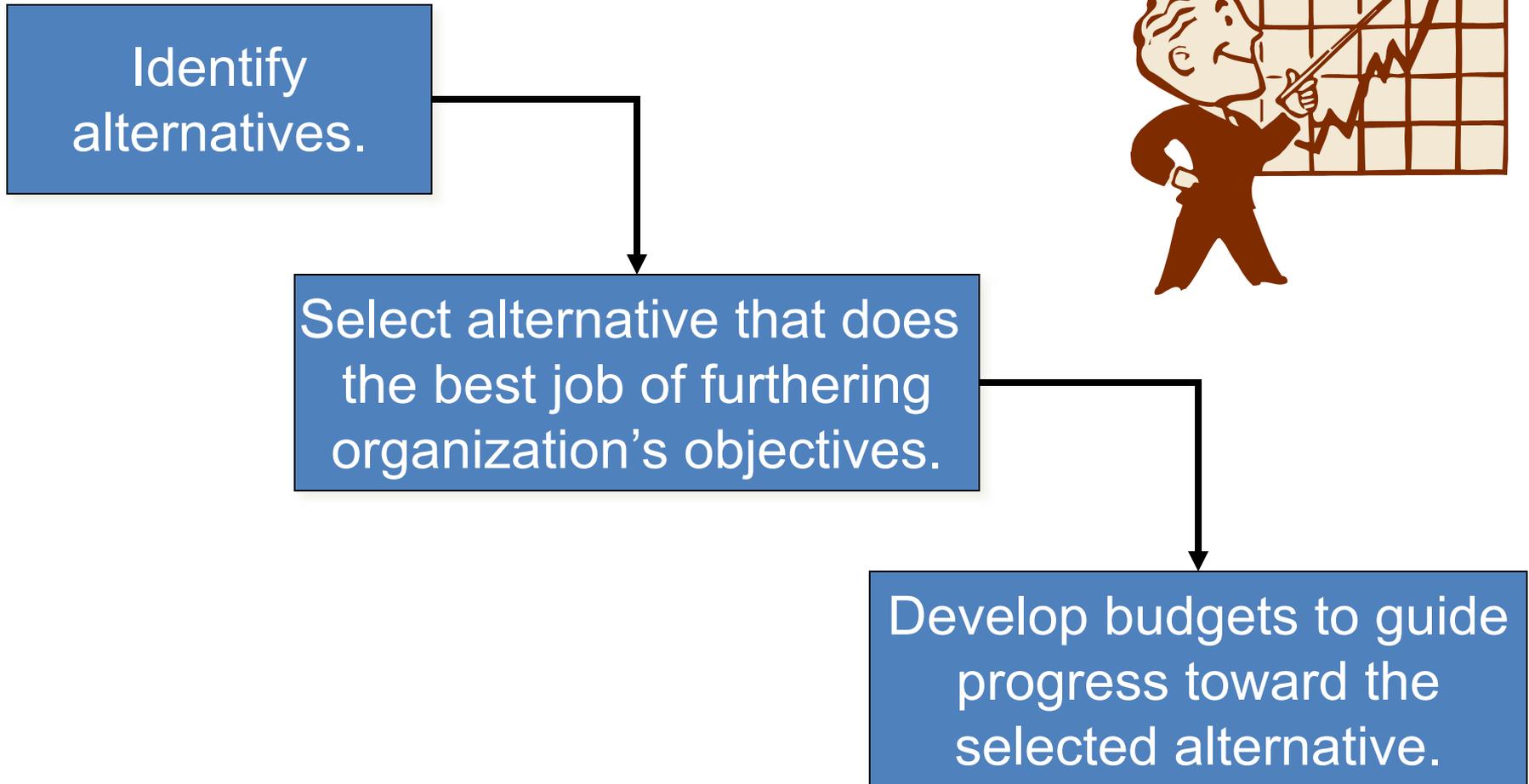
**Planning**

**Directing and  
Motivating**

**Controlling**



# Planning



# 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.



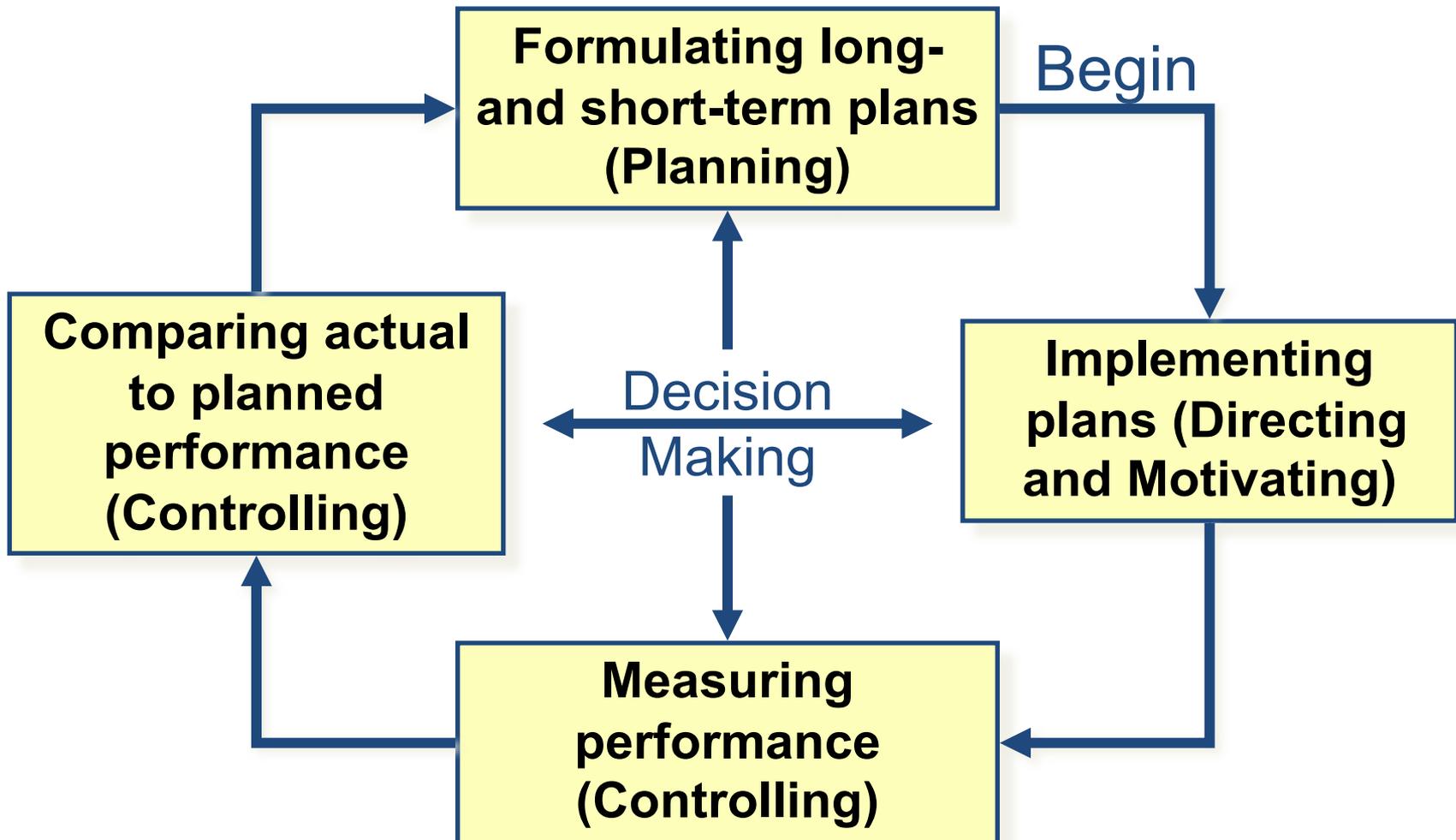
# Controlling

**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.**



# Planning and Control Cycle



# 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

**Exercise 1-1A** *Identifying financial versus managerial accounting items*

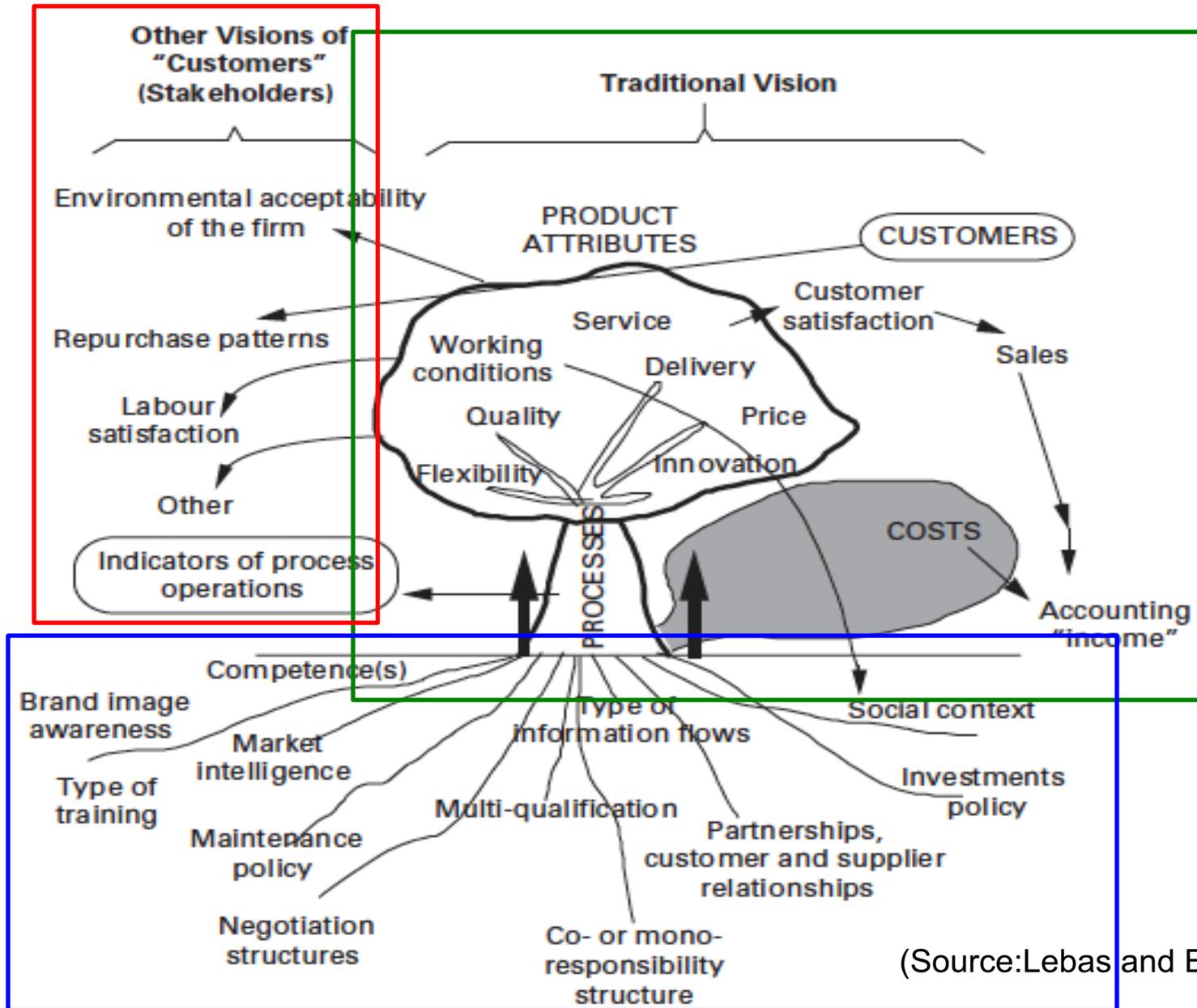
**Required**

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

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

MA	FA
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# The Performance Tree



(Source: Lebas and Euske, 2002)

# Learning Objective



**Identify the cost of manufacturing a product and show how these costs affect financial statements.**

**L02**

# Traditional Manufacturing Company



Forecast Sales



Order components



Store Inventory



Make Sales from  
Finished Goods  
Inventory



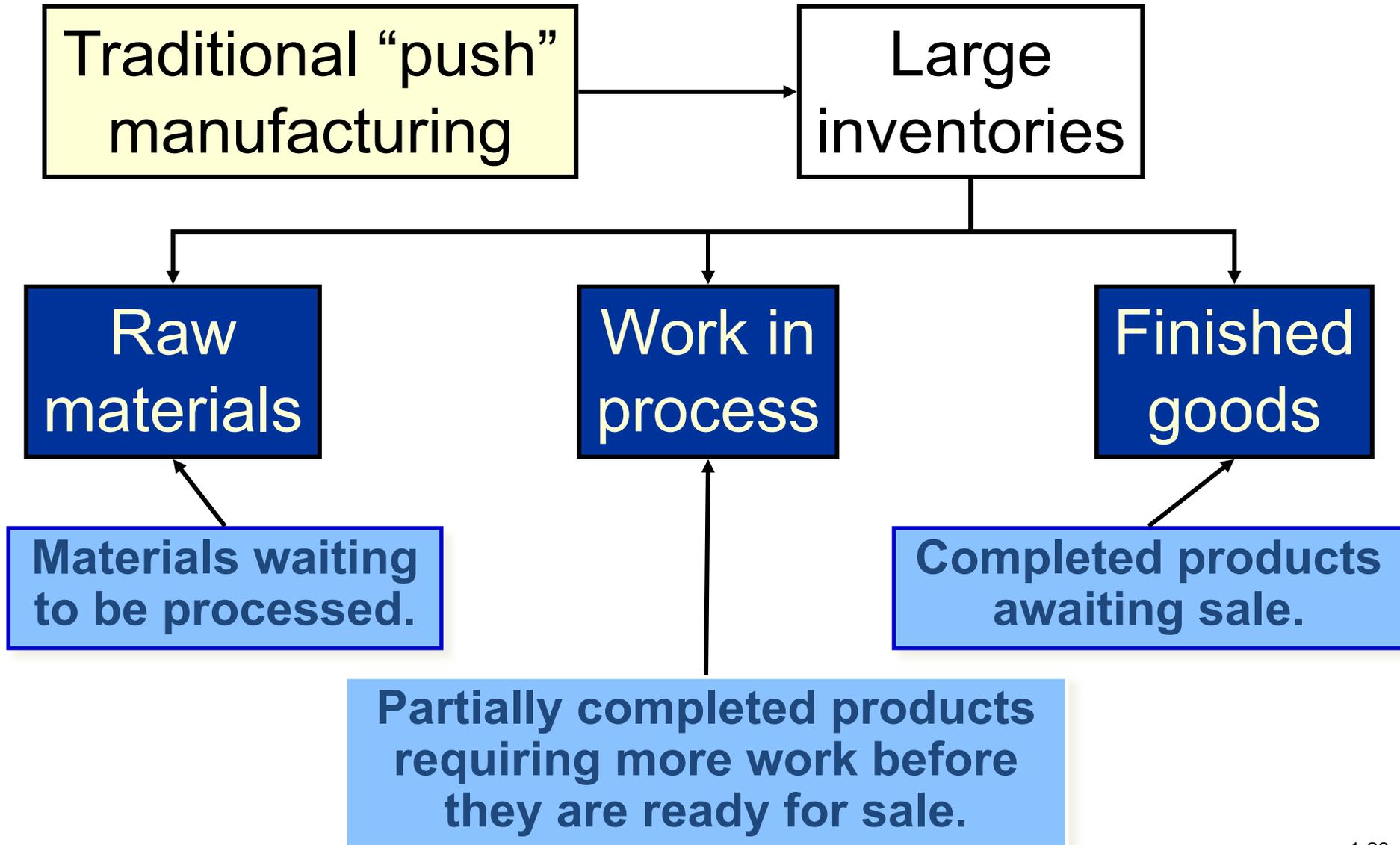
Store  
Inventory



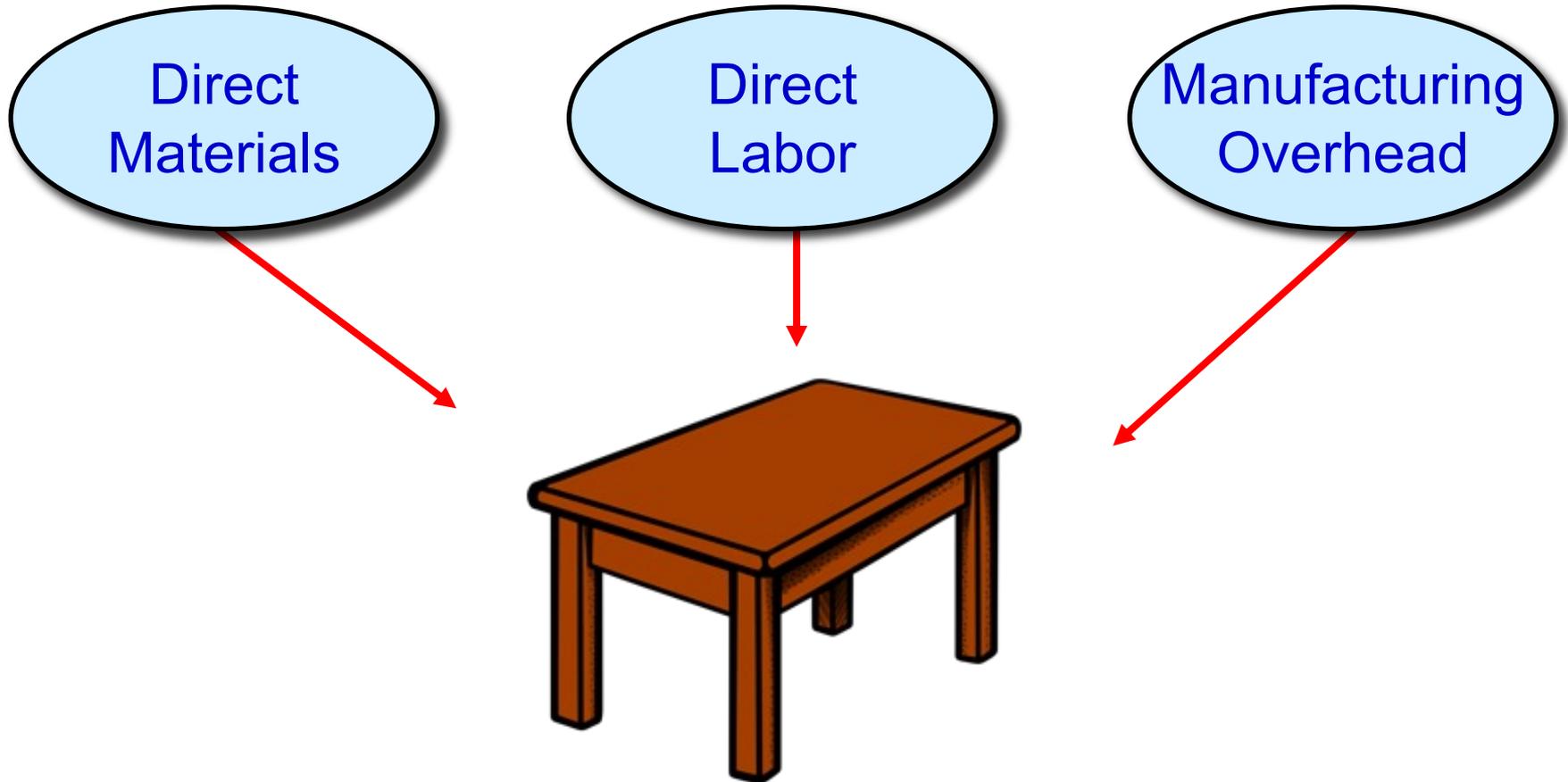
Produce goods in  
Anticipation of Sales



# Traditional Manufacturing Company



# Manufacturing Costs



**The Product**

# 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**

# Direct Labor

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



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

# Manufacturing Overhead

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

**Examples: Indirect labor and indirect materials**

Wages paid to employees who are not directly involved in production work.

**Examples:** maintenance workers, janitors and security guards.

Materials used to support the production process.

**Examples:** polish and cleaning supplies used in the table assembly plant.

# Non-manufacturing Costs

## Selling Costs

Costs necessary to get the order and deliver the product.

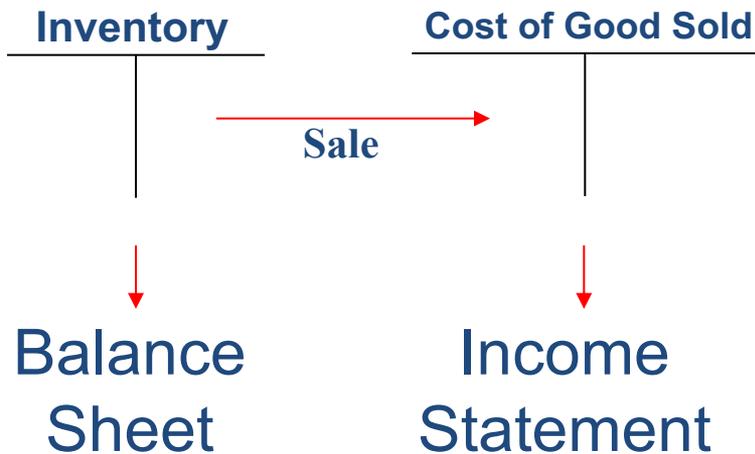
## Administrative Costs

All executive, organizational, and clerical costs.

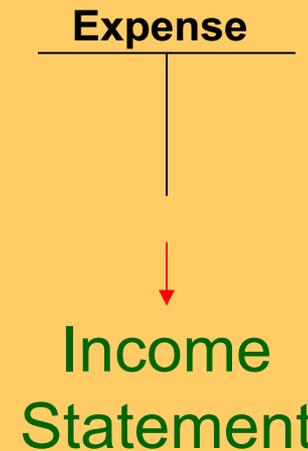


# Product Costs Versus Period Costs

**Product costs** include direct materials, direct labor, and manufacturing overhead.

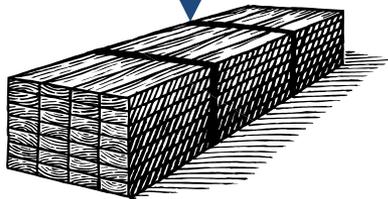


**Period costs** include all selling costs and administrative costs.



# Components of Product Cost

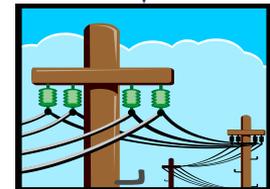
Materials



Labor

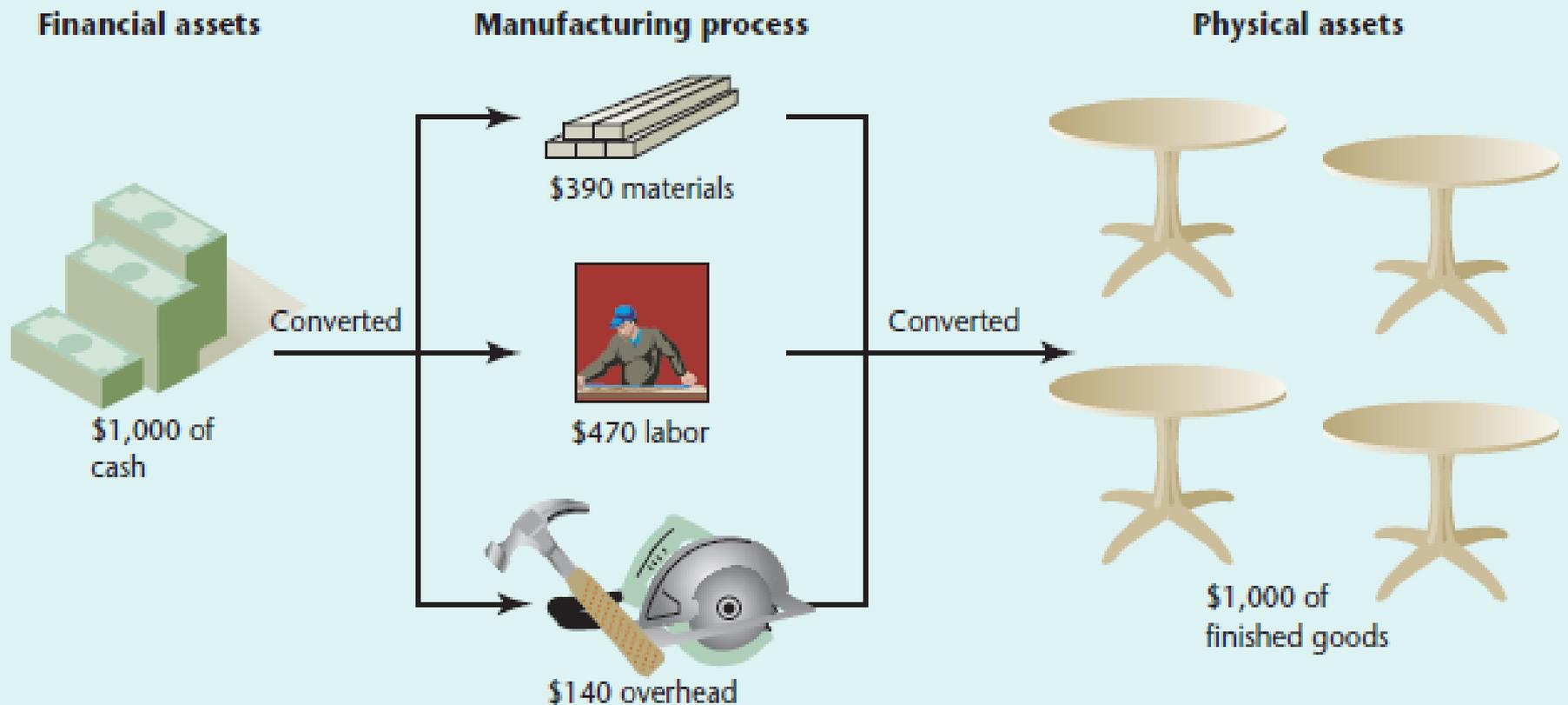


Overhead



# Components of Product Cost

## Transforming the Asset Cash Into the Asset Finished Goods Inventory



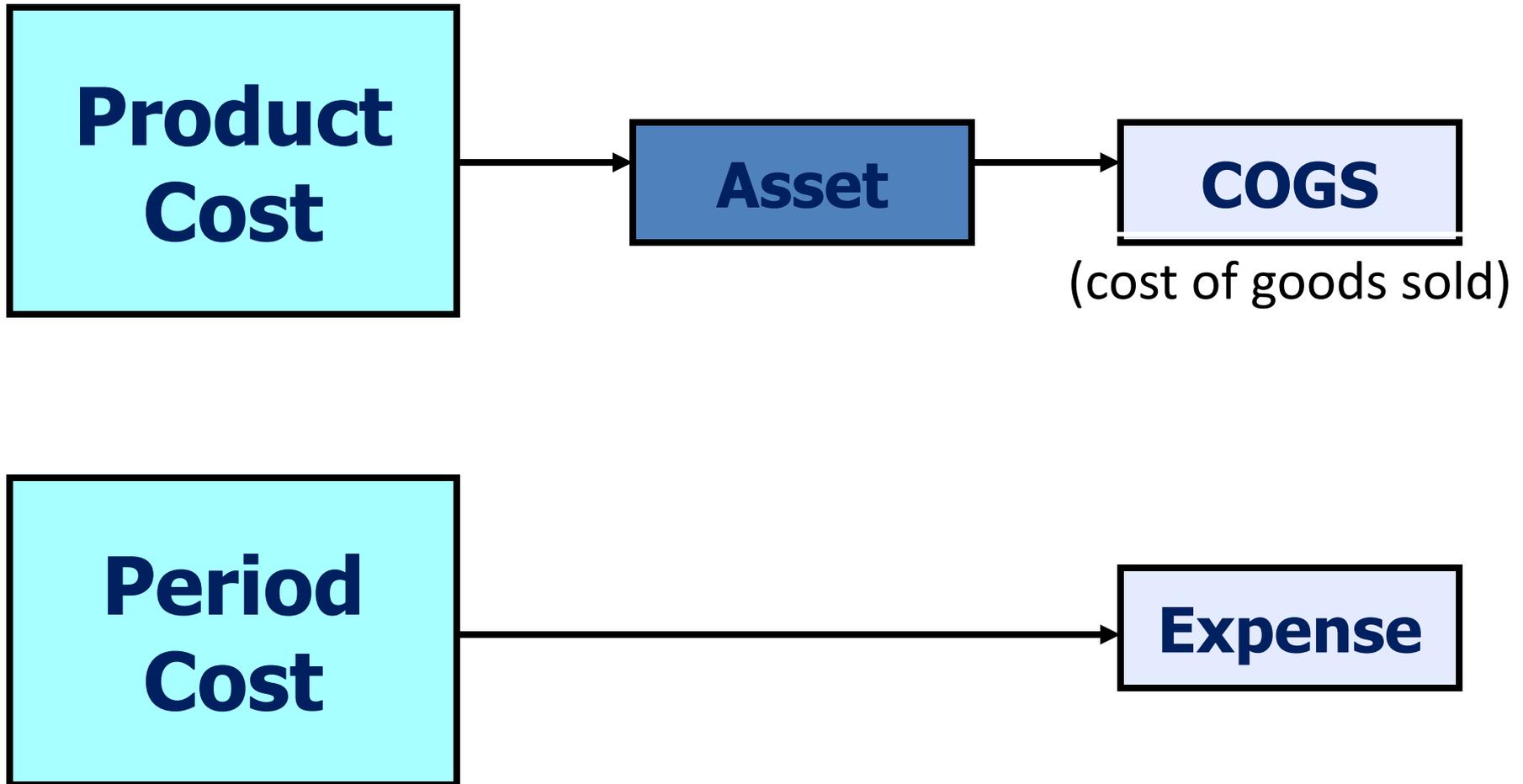
# Average Cost per Unit

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

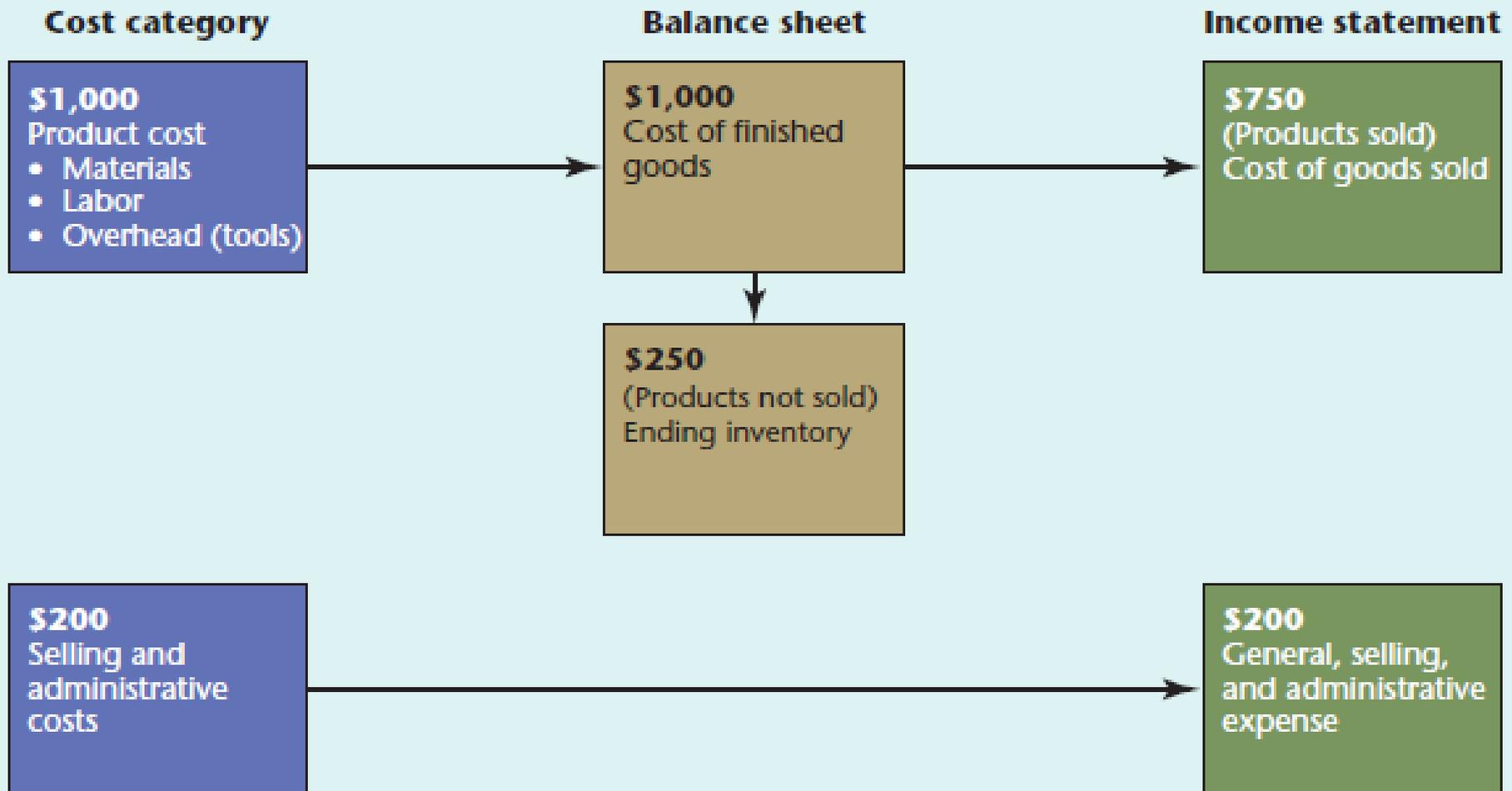
For example, Average Cost Per Unit

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

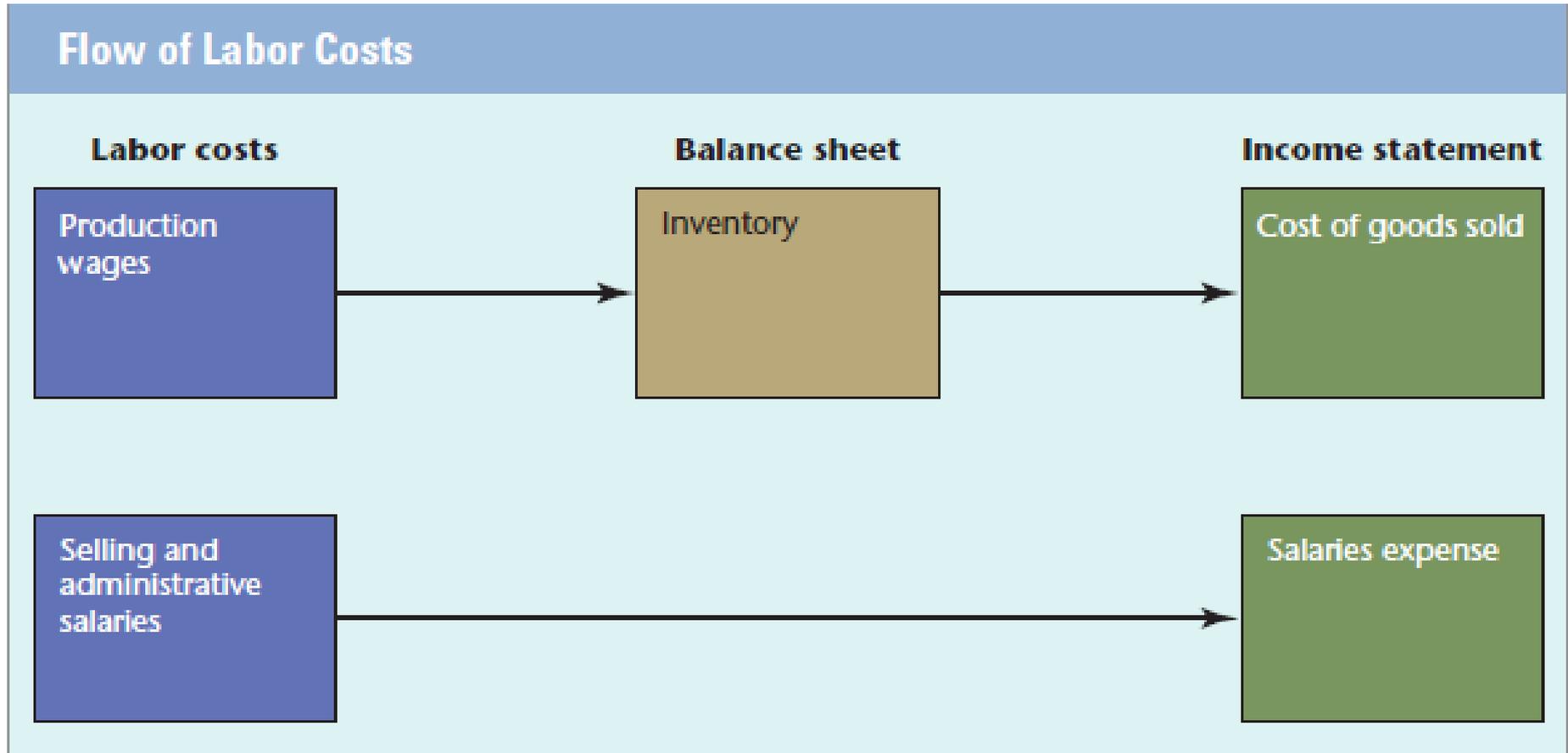
# Remember that cost can be: Assets or Expenses



## Cost Classification for Tabor Manufacturing Company



# Labor 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.

# 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.*	=					
1	15,000							=	15,000				
2	(2,000)	+	2,000										
3	(1,200)							=			(1,200)		
4	(3,000)	+	3,000										
5	(2,800)	+				2,800							
6						(600)		=			(600)		
7	(4,500)	+									4,500		
8			1,000	+							(1,000)		
9	7,500							=			7,500		
10			(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

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

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

# PATILLO MANUFACTURING COMPANY

## Financial Statements



### Income Statement for 2016

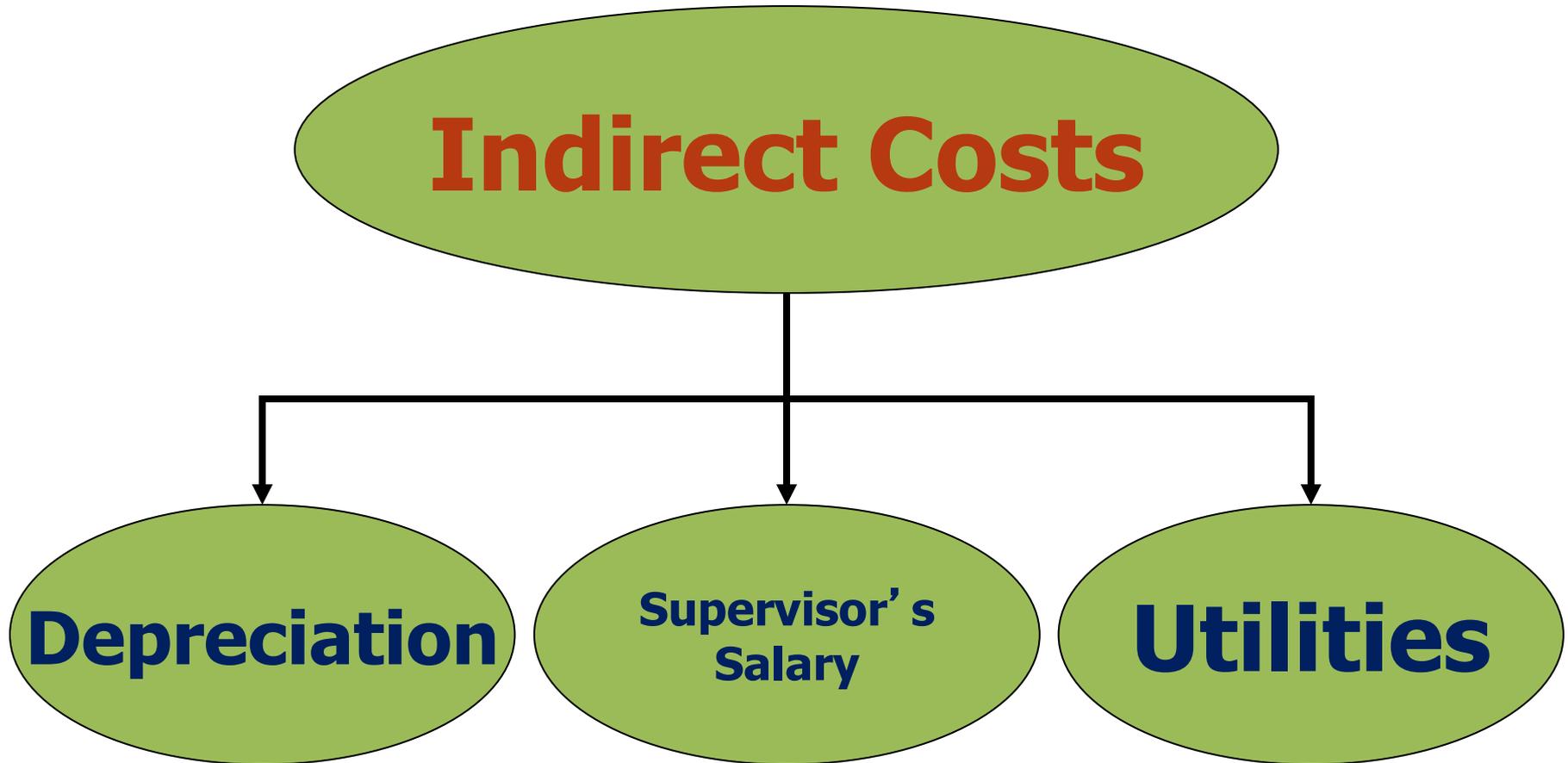
Sales revenue		\$ 7,500
Cost of goods sold		<u>(4,000)</u>
Gross margin		3,500
SG&A expenses		
Salaries expense		(1,200)
Depreciation expense—office furniture		<u>(600)</u>
Net income		<u>\$ 1,700</u>

### 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>

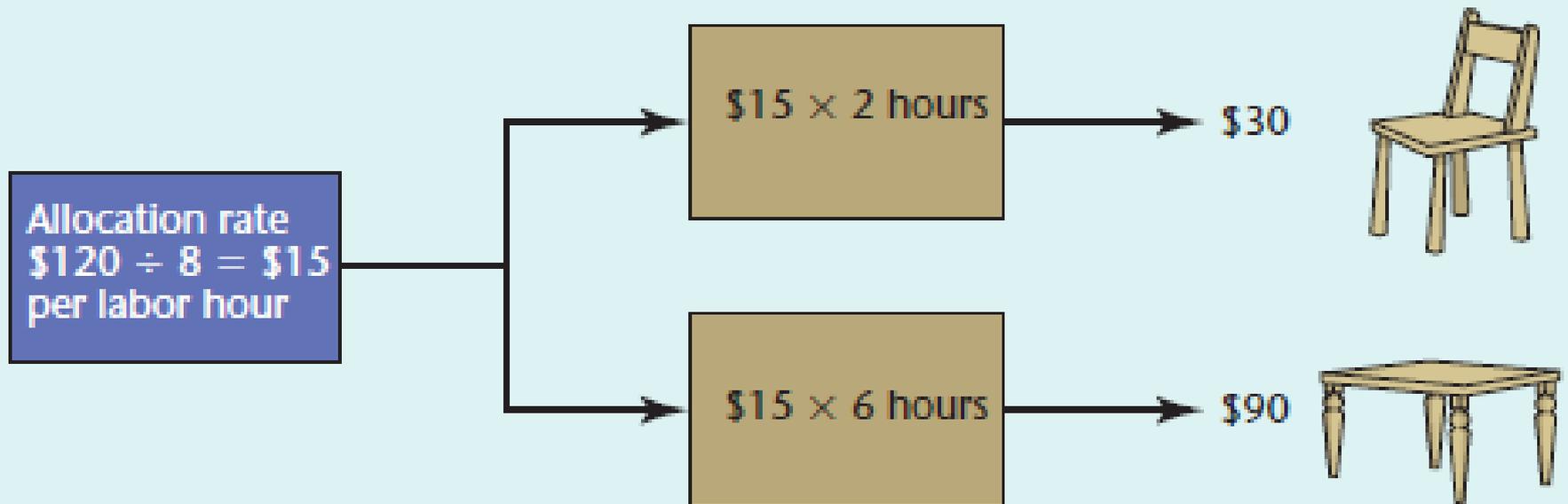
Cost Analysis for Business Decisions  
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# Overhead Costs: A Closer Look

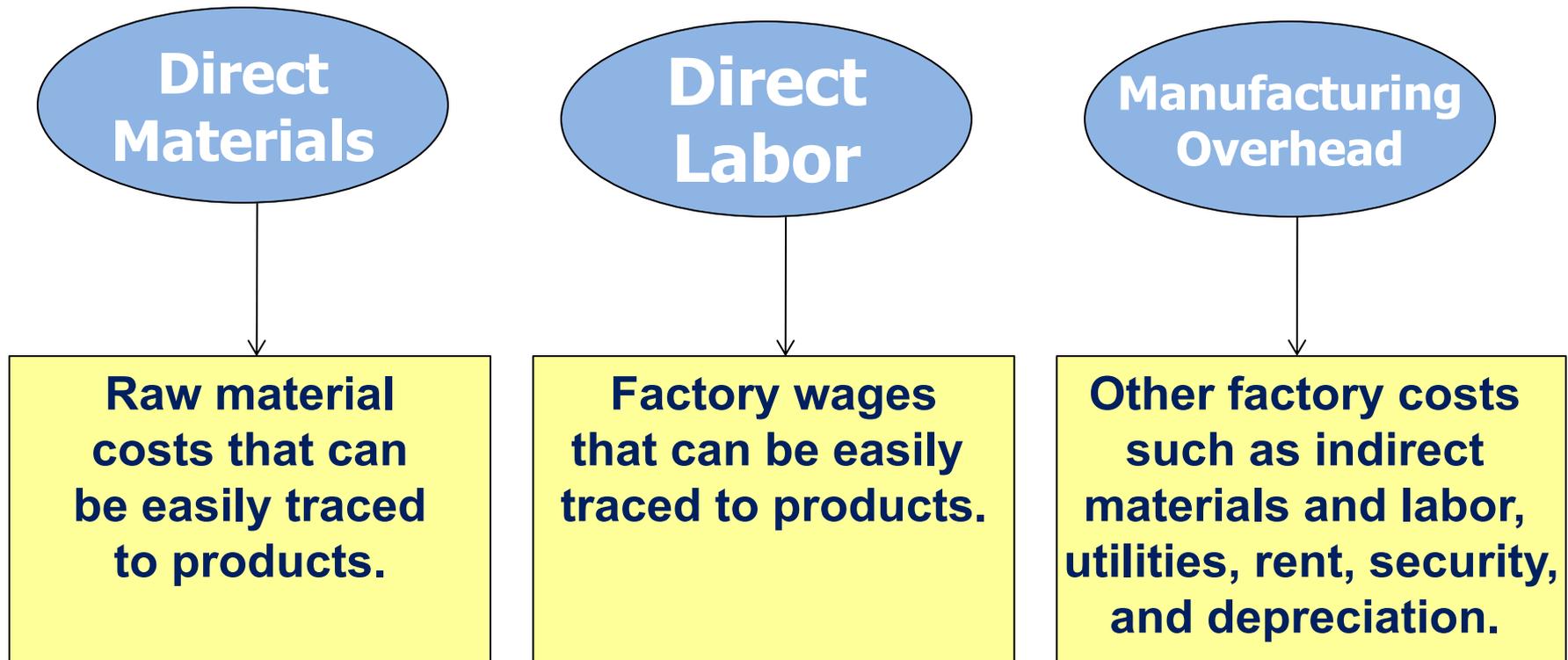


# Indirect Cost Allocation

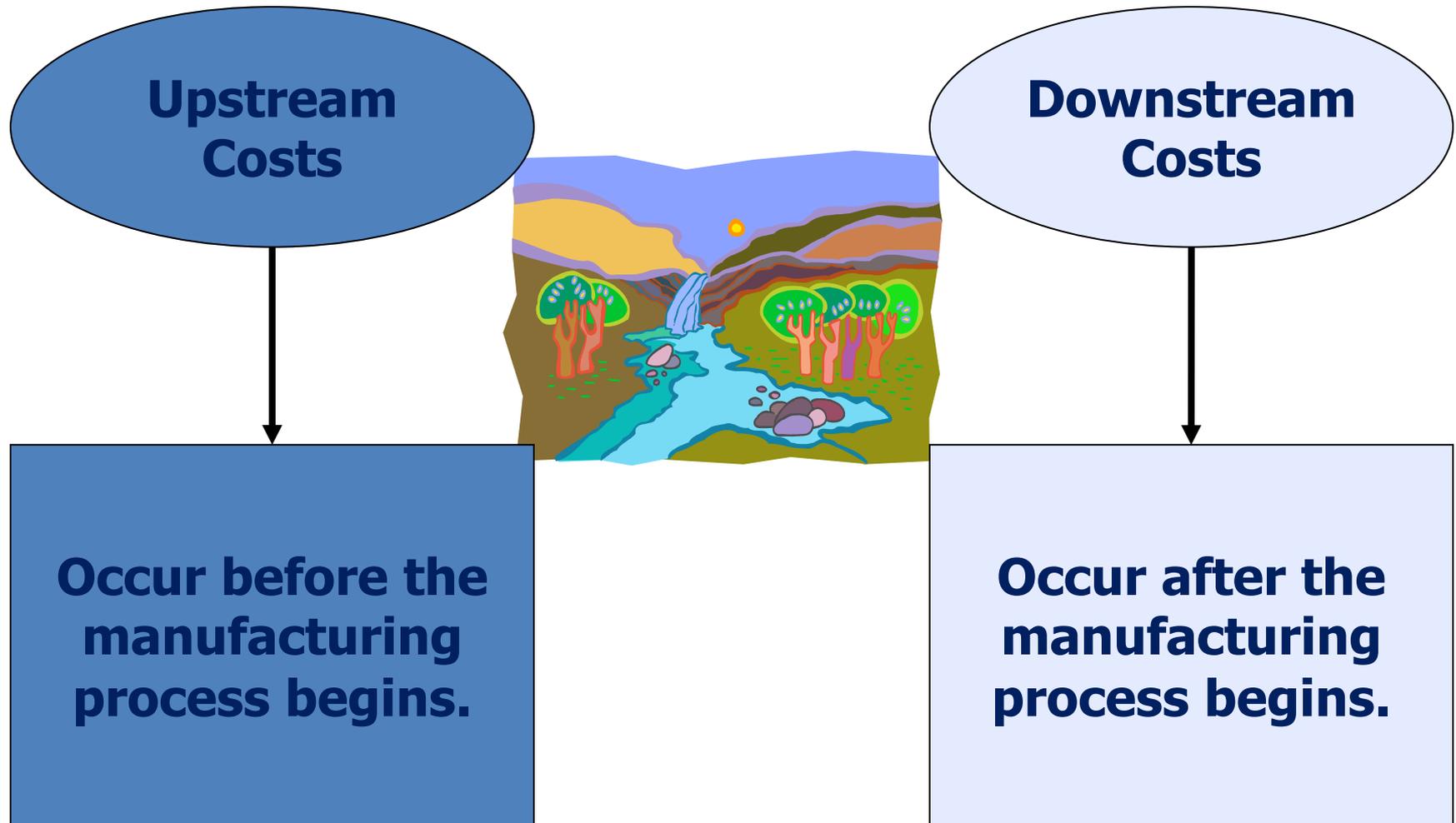
## Cost Allocation



# Manufacturing Product Cost Summary



# Upstream and Downstream Costs



# Product Costing in Service and Merchandising Companies

**Service  
Companies**

**Provide products to  
customers that are  
consumed immediately**

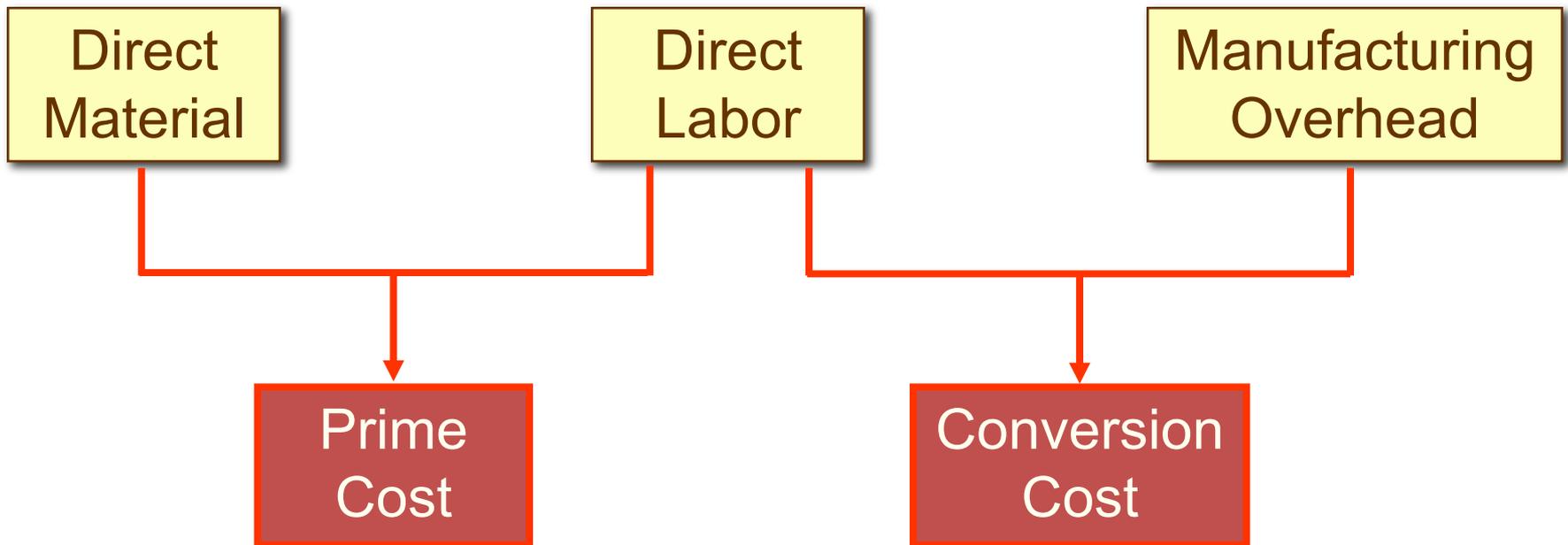
**Merchandising  
Companies**

**Sell products other  
companies make**

**Service and merchandising companies also incur labor and overhead costs. However, these costs are normally treated as general, selling and administrative expenses rather than accumulated in inventory accounts.**

# Classifications of Costs

Manufacturing costs are often classified as follows:



# Comparing Merchandising and Manufacturing Activities

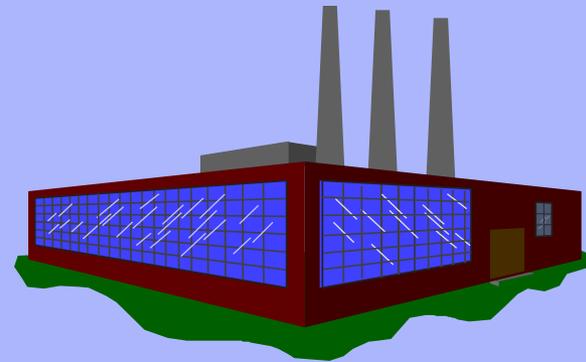
## Merchandisers . . .

- Buy finished goods.
- Sell finished goods.



## Manufacturers . . .

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



# 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

## Merchandiser

### Current assets

- ◆ Cash
- ◆ Receivables
- ◆ Prepaid Expenses

Partially complete products – some material, labor, or overhead has been added.

## Manufacturer

### Current Assets

- ◆ Cash

Materials waiting to be processed.

- ◆ Inventories

- Raw Materials
- Work in Process
- Finished Goods

Completed products awaiting sale.

# The Income Statement

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

## Merchandising Company

<b>Cost of goods sold:</b>	
Beg. merchandise inventory	\$ 14,200
<b>+ Purchases</b>	<u>234,150</u>
Goods available for sale	\$ 248,350
- Ending merchandise inventory	<u>(12,100)</u>
<b>= Cost of goods sold</b>	<u><u>\$ 236,250</u></u>

## Manufacturing Company

<b>Cost of goods sold:</b>	
Beg. finished goods inv.	\$ 14,200
<b>+ Cost of goods manufactured</b>	<u>234,150</u>
Goods available for sale	\$248,350
- Ending finished goods inventory	<u>(12,100)</u>
<b>= Cost of goods sold</b>	<u><u>\$236,250</u></u>

# Basic Equation for Inventory Accounts

**Beginning  
balance**

+

**Additions  
to inventory**

=

**Ending  
balance**

+

**Withdrawals  
from  
inventory**



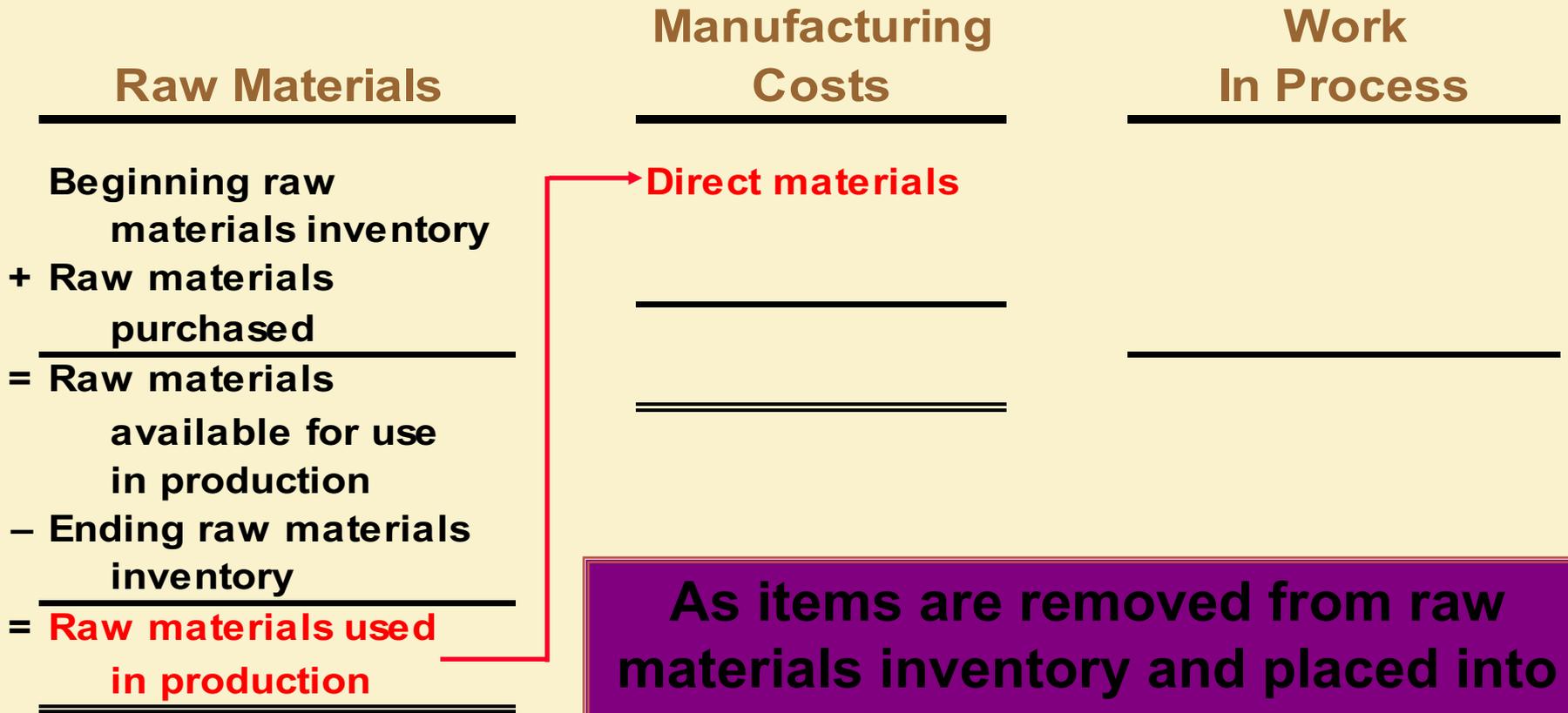
# Schedule of Cost of Goods Manufactured

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.

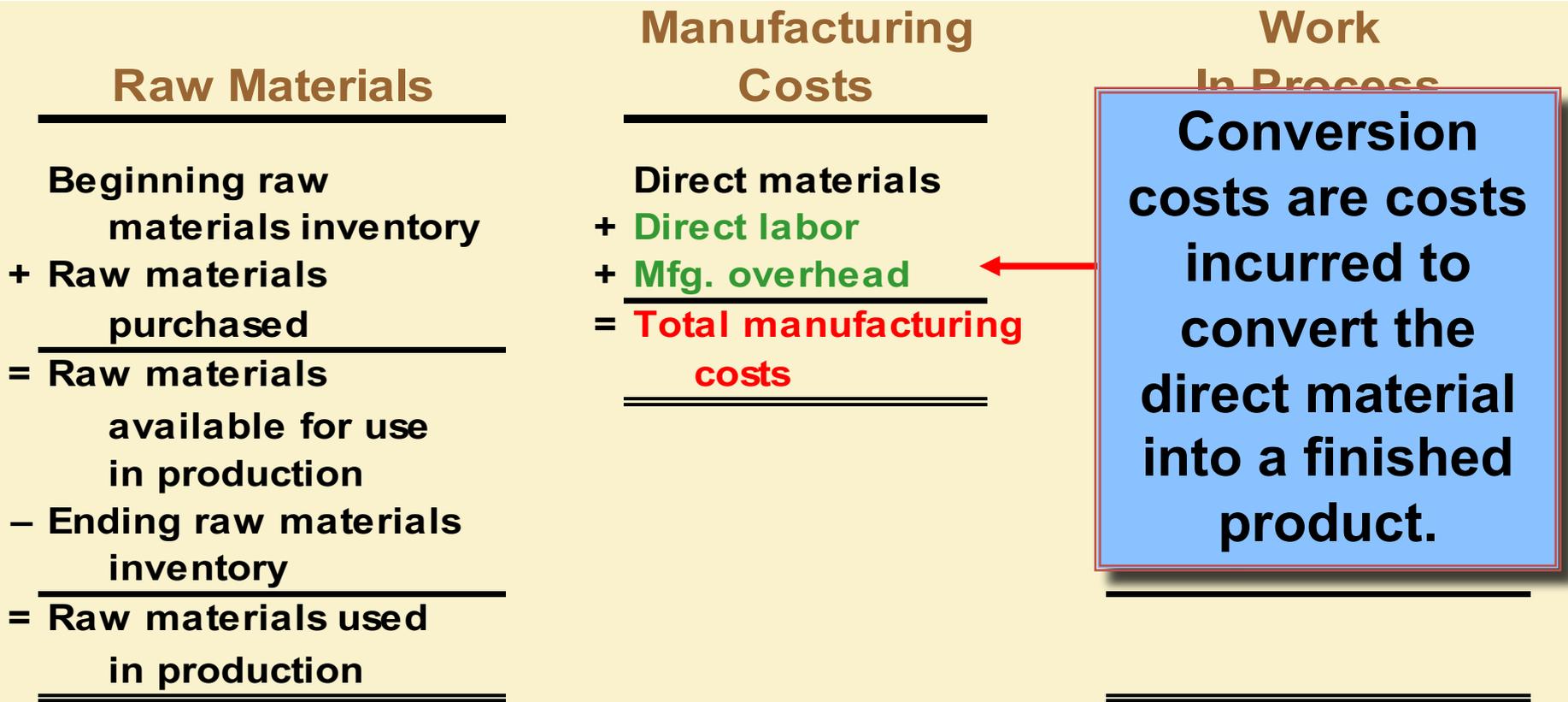


# Product Cost Flows



**As items are removed from raw materials inventory and placed into the production process, they are called direct materials.**

# Product Cost Flows



# 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	+ <b>Total manufacturing costs</b>
<u>= Raw materials available for use in production</u>	+ Mfg. overhead	<u>= Total work in process for the period</u>
- Ending raw materials inventory	<u>= <b>Total manufacturing costs</b></u>	
<u>= Raw materials used in production</u>		

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

# Product Cost Flows

## Raw Materials

Beginning raw materials inventory  
 + Raw materials purchased  
 = Raw materials available for use in production  
 – Ending raw materials

## Manufacturing Costs

Direct materials  
 + Direct labor  
 + Mfg. overhead  
 = Total manufacturing costs

## Work In Process

Beginning work in process inventory  
 + Total manufacturing costs  
 = Total work in process for the period  
 – Ending work in process inventory  
 = Cost of goods manufactured

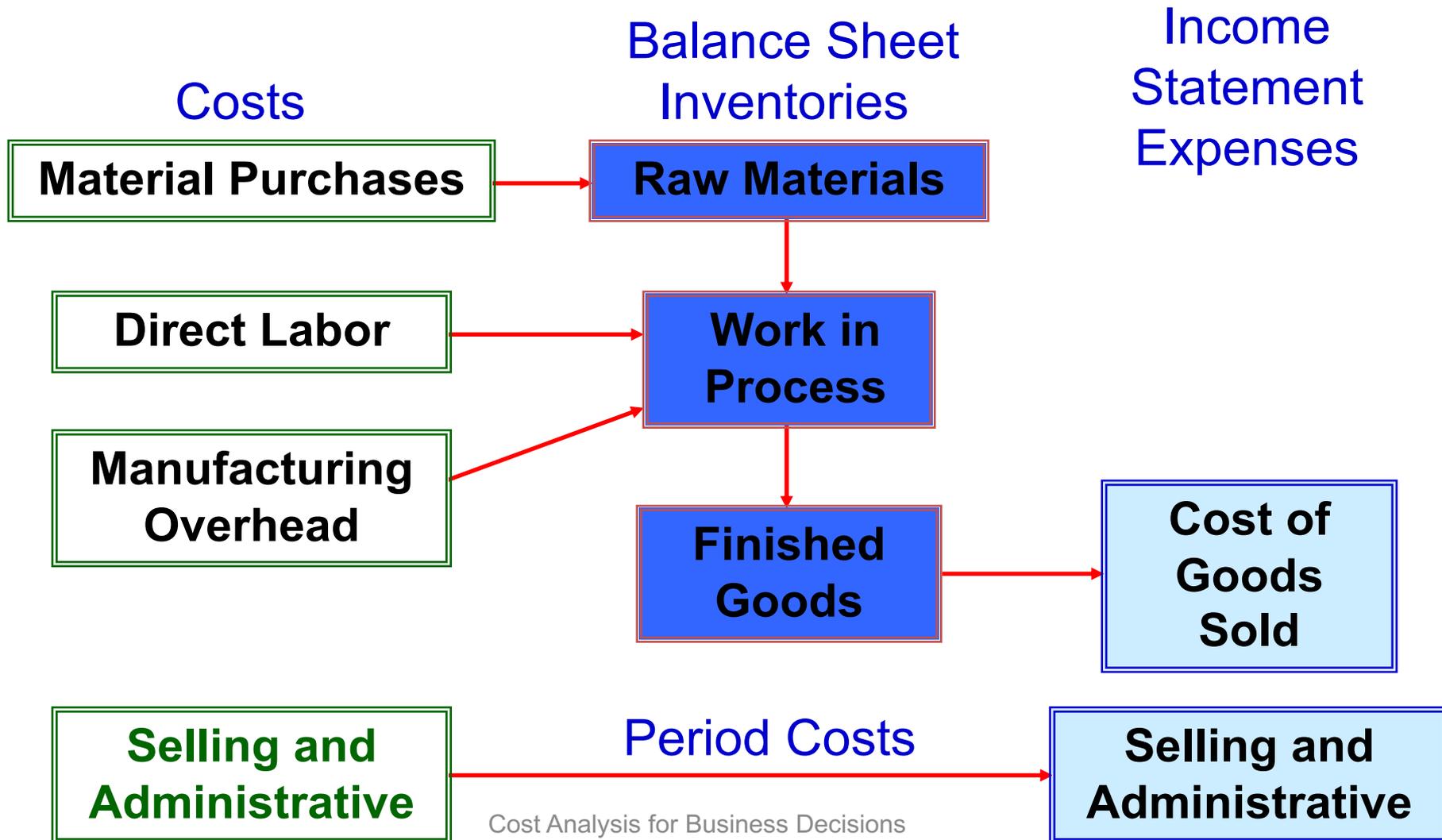
**Costs associated with the goods that are completed during the period are transferred to finished goods inventory.**



# Product Cost Flows

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

# Manufacturing Cost Flows



# Exercise: Demonstration Problem 1

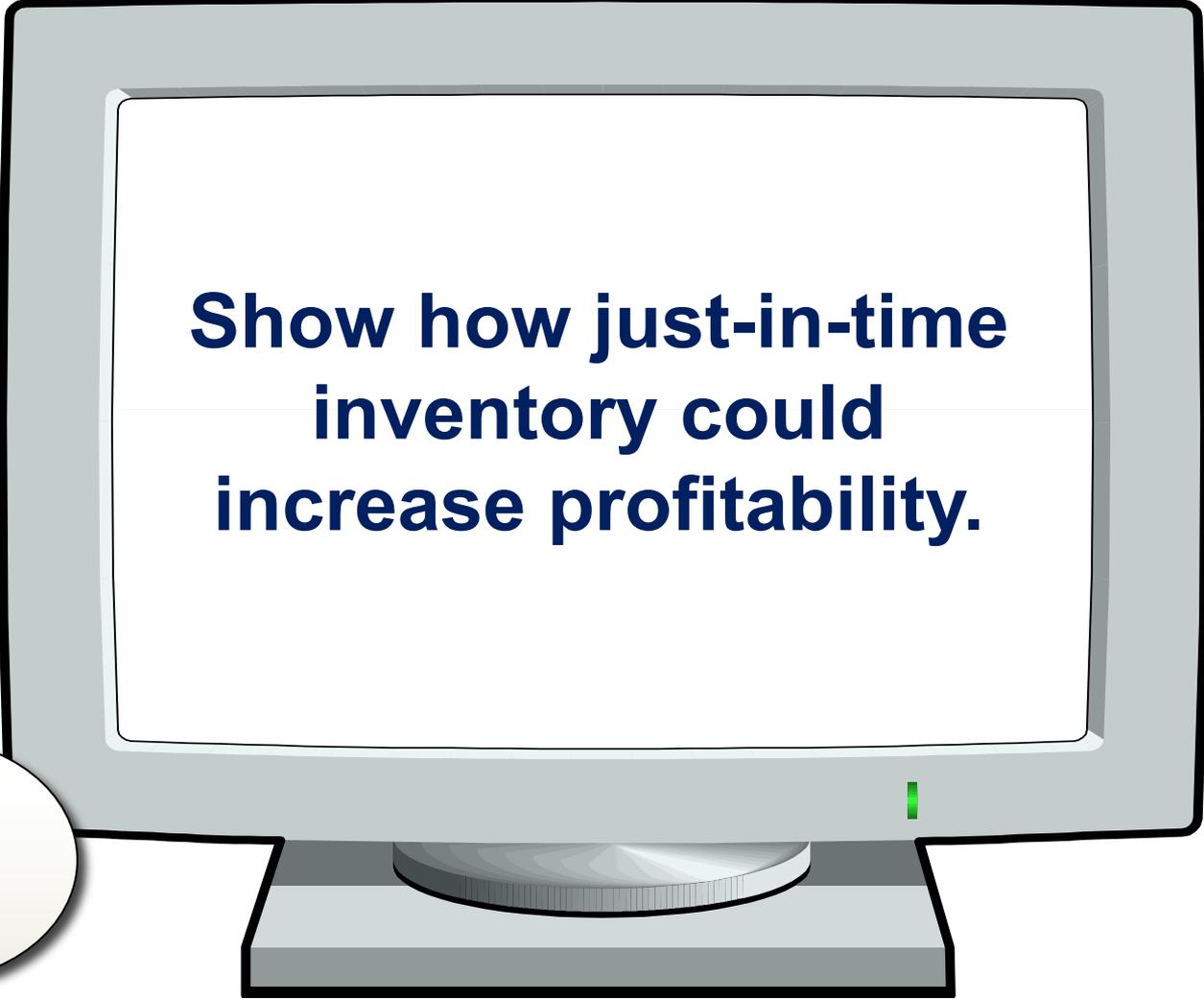


Eiffel Manufacturing Company makes small replicas of major landmarks that it sells to souvenir shops. The company was started on January 1, 2014, when it acquired \$60,000 cash from the issue of common stock. During 2014, the company purchased and used raw materials that cost \$16,000 cash. It paid wages 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

# Learning Objective



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



**LO3**

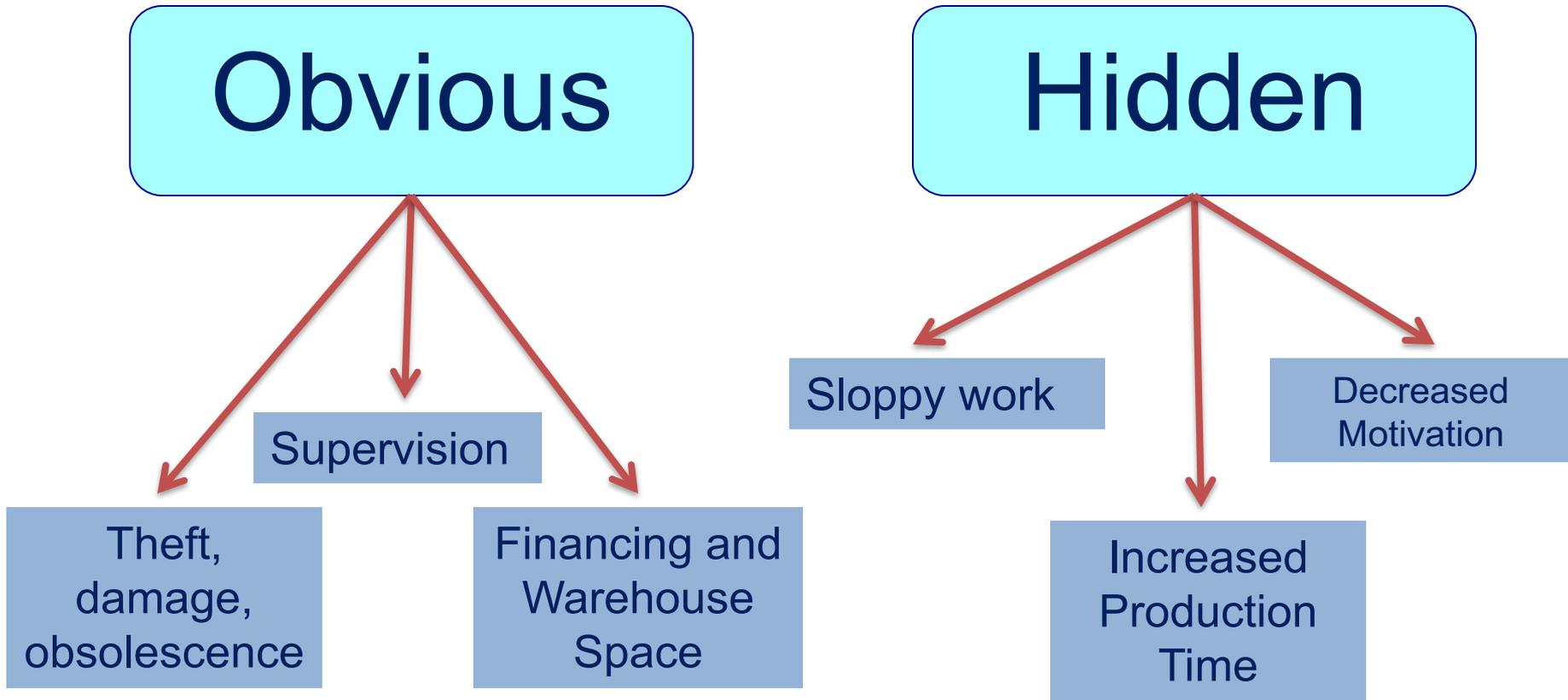
# Just-in-Time

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.

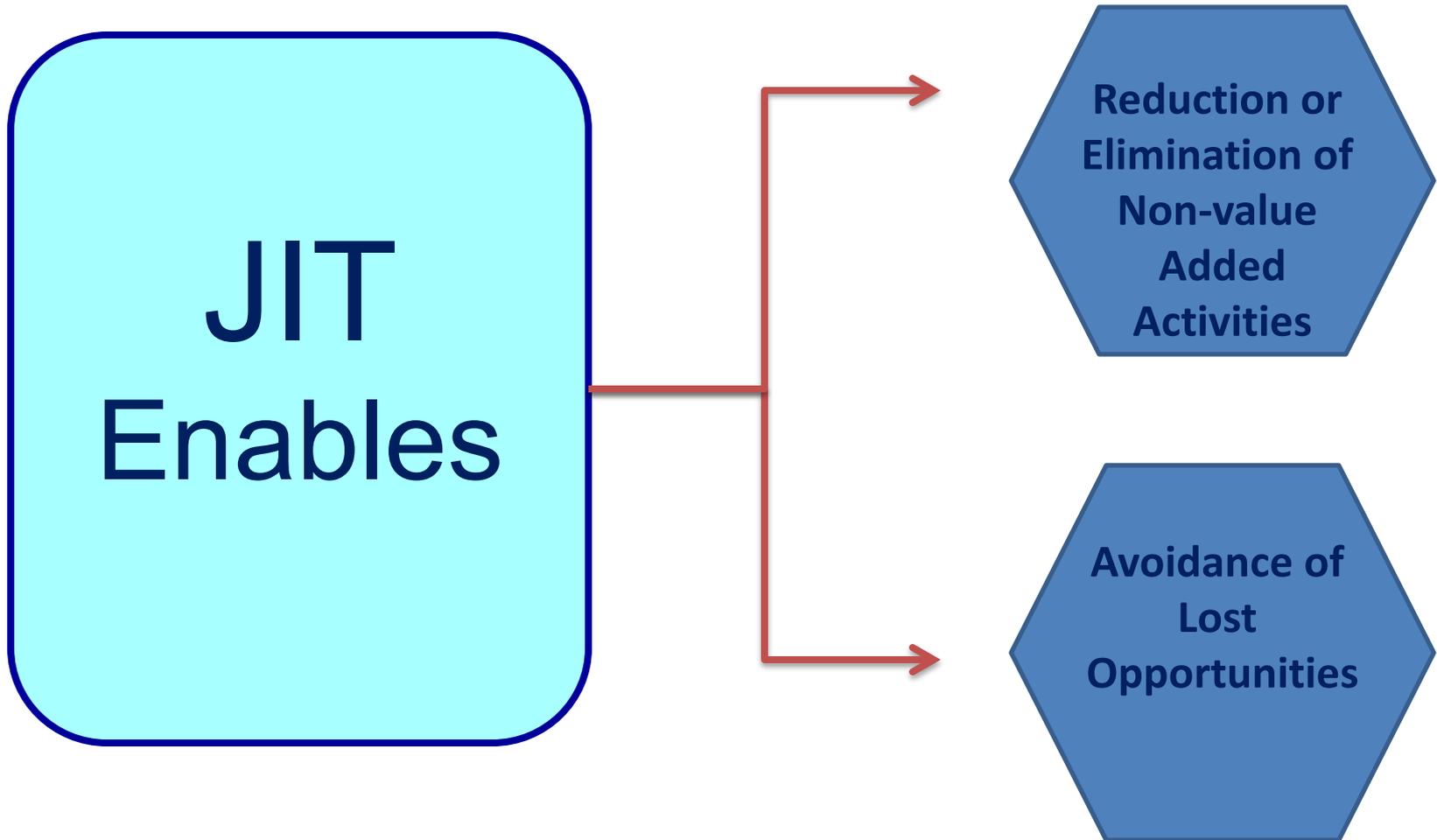
**For example, hamburgers that are cooked to order are fresher and more individualized than those that are prepared in advance and stored until a customer orders one.**



# Inventory Holding Costs



# Just-in-Time Inventory



# Learning Objective



**Identify the key  
components of  
corporate  
governance.**



**LO4**

# 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**

# The Motive to Manipulate

## Strong Financials



Promotions  
Pay raises  
Bonuses  
Stock options

## Weak Financials



Passed over for promotions  
Demoted  
Fired

# 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.

# 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 × \$18)	\$12,600	\$12,600
Cost of goods sold	<u>(5,600)<sup>1</sup></u>	<u>(8,400)<sup>3</sup></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>

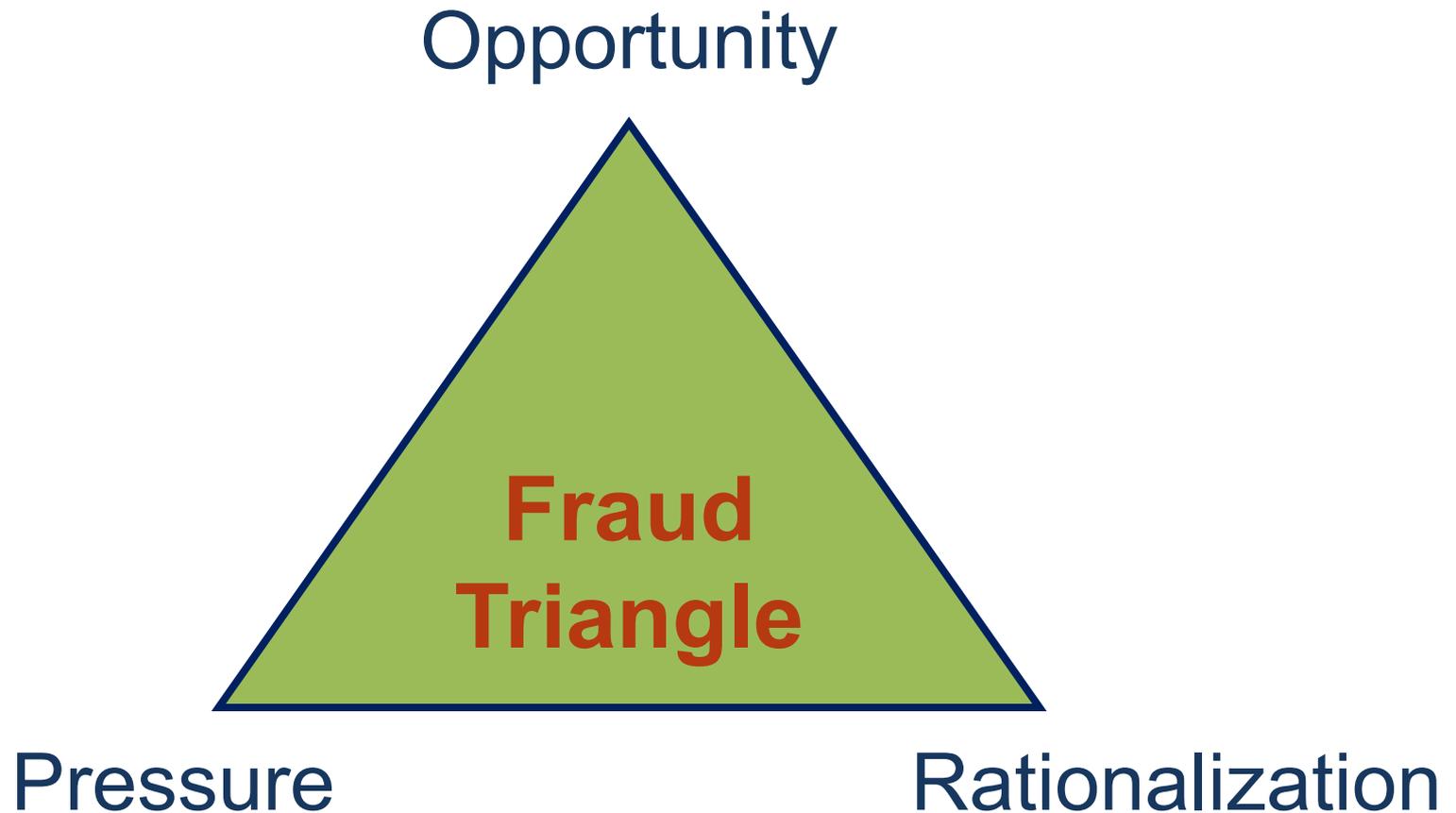
## Balance Sheets

<b>Assets</b>		
Cash	\$12,600	\$12,600
Inventory	<u>2,400<sup>2</sup></u>	<u>3,600<sup>4</sup></u>
Total assets	<u>\$15,000</u>	<u>\$16,200</u>
<b>Stockholders' equity</b>		
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>

# 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

# Common Features of Criminal and Ethical Misconduct



# Internal Control Practices

**Separating  
Duties**

**Hiring  
Competent  
Personnel**

**Bonding  
Employees**

**Requiring  
Extended  
Absences**

**Establishing Clear  
Lines of  
Authority &  
Responsibility**

**Using  
Prenumbered  
Documents**

**Establishing  
Physical Controls**

**Performing  
Evaluations at  
Regular Intervals**

# 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..

# 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 (by equation method).