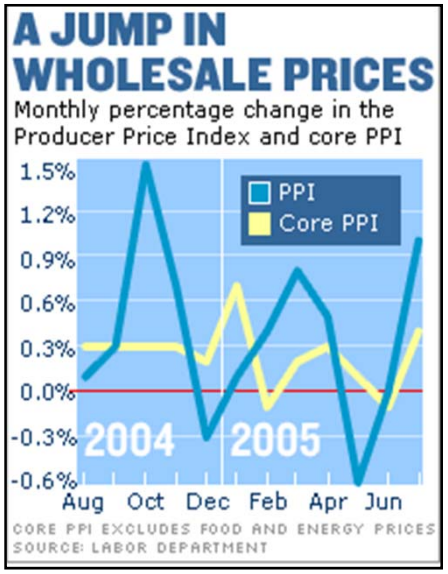
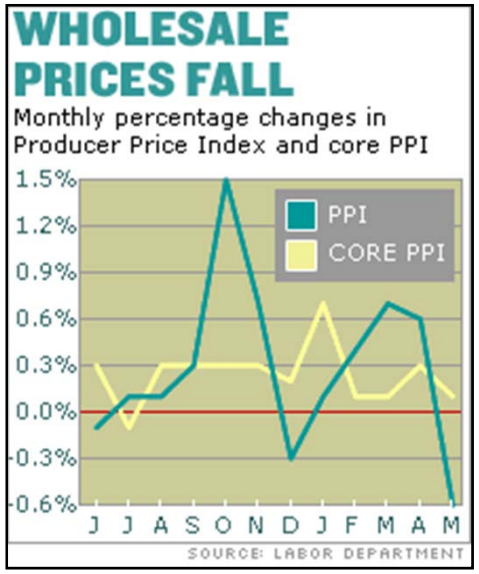
Cost Accounting





LESE 306

Fall 2010

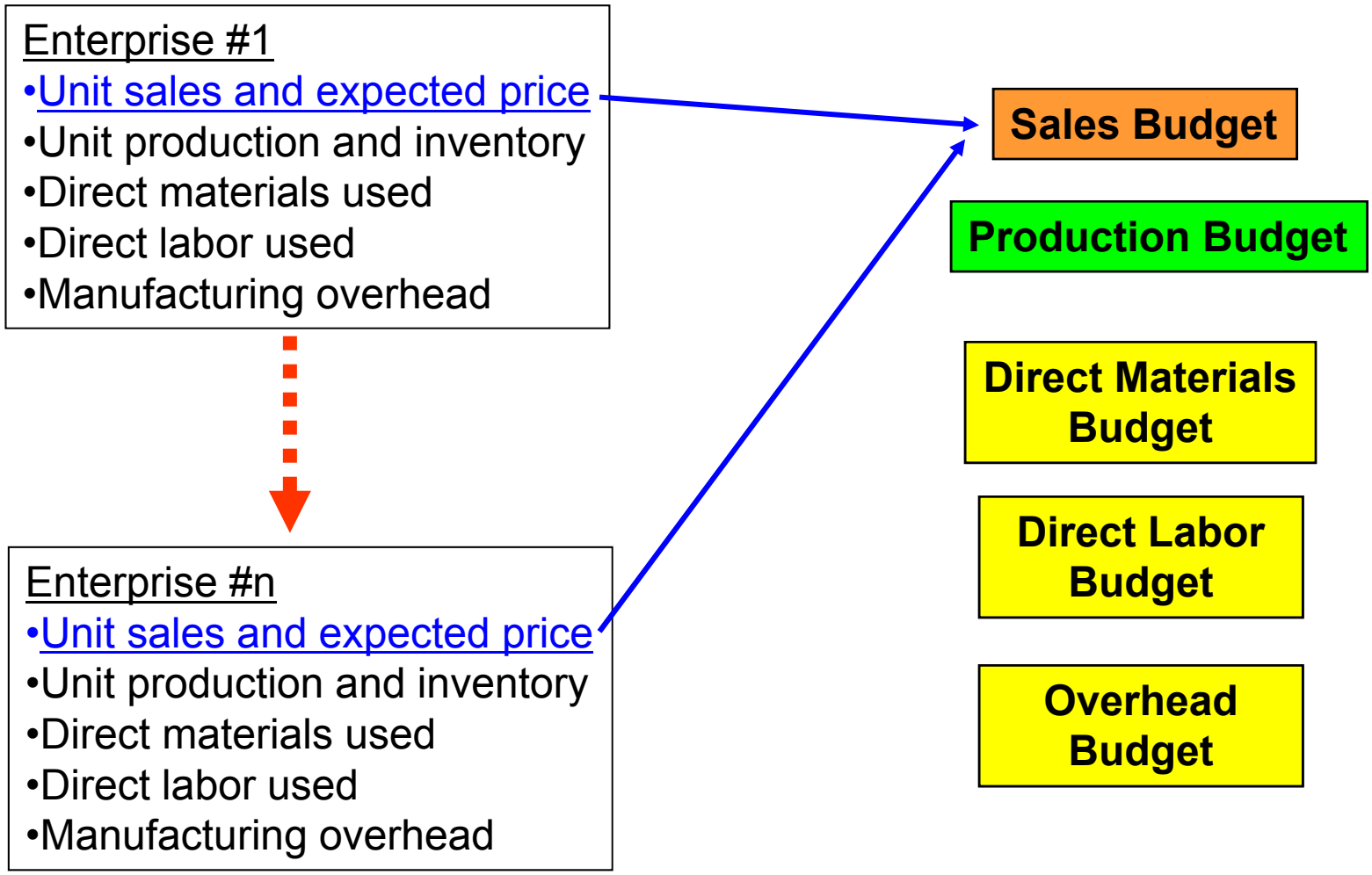
Managerial Cost Concepts

1. **Direct materials**: raw materials physically associated with the final product
2. **Direct labor**: employees physically and directly associated with the final product
3. **Overhead**: costs indirectly associated with the final product

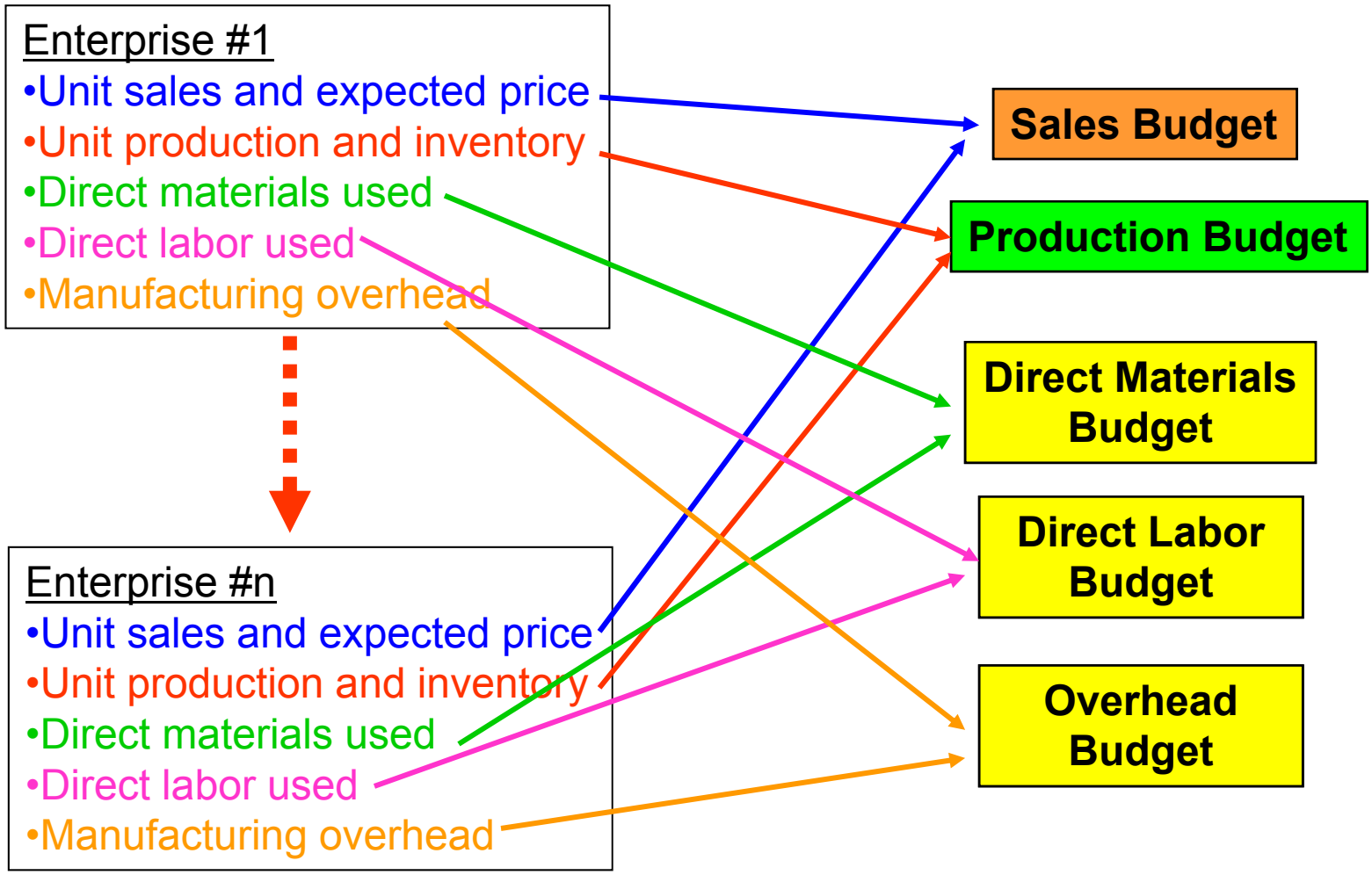
More Concepts

1. **Period costs**: costs matched with revenue for a specific time period. (i.e., net income for a specific period (i.e., quarterly, annual).
2. **Product costs**: costs associated with producing the final product. Not considered an expense until the product is sold.
3. **Total costs**: equals direct materials, direct labor and manufacturing overhead plus indirect costs (selling and administrative expenses).

The Master Budget and Pro Forma Financial Statements



The Master Budget and Pro Forma Financial Statements



The Master Budget and Pro Forma Financial Statements

Enterprise #1
- Unit sales and expected price
- Unit production and inventory
- Direct materials used
- Direct labor used
- Manufacturing overhead

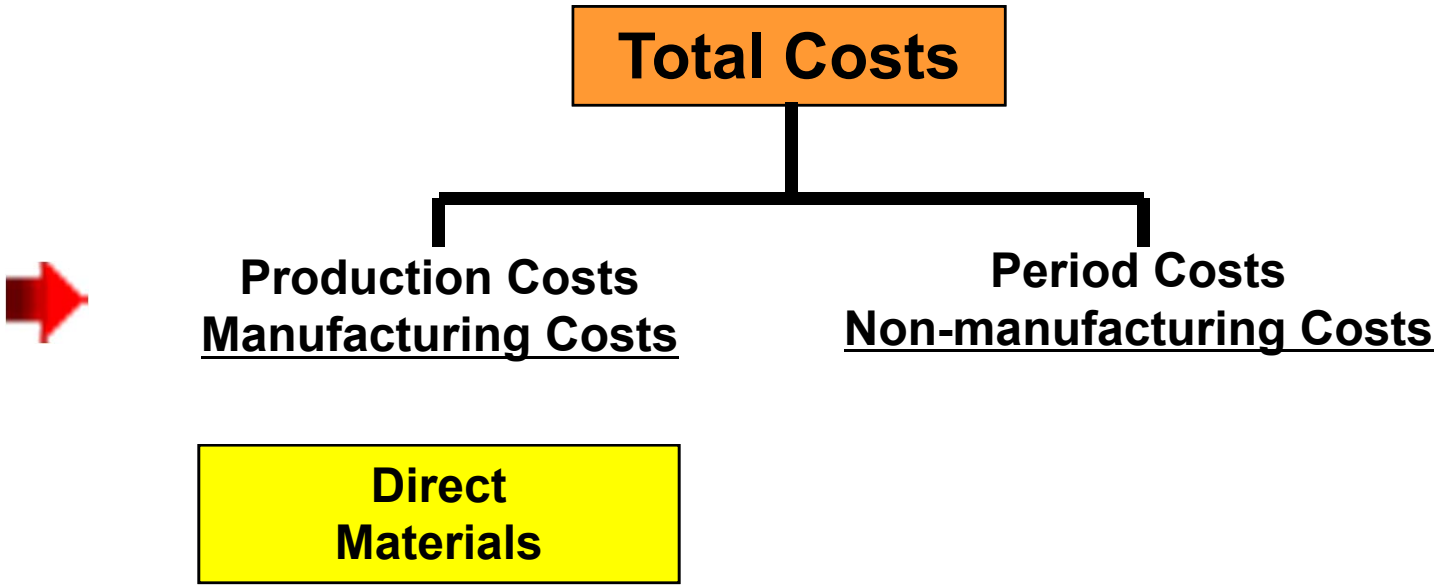
Examples of direct materials:
- Purchase of corn.
- Purchase of natural gas.
- Purchase of other inputs used in the production process.

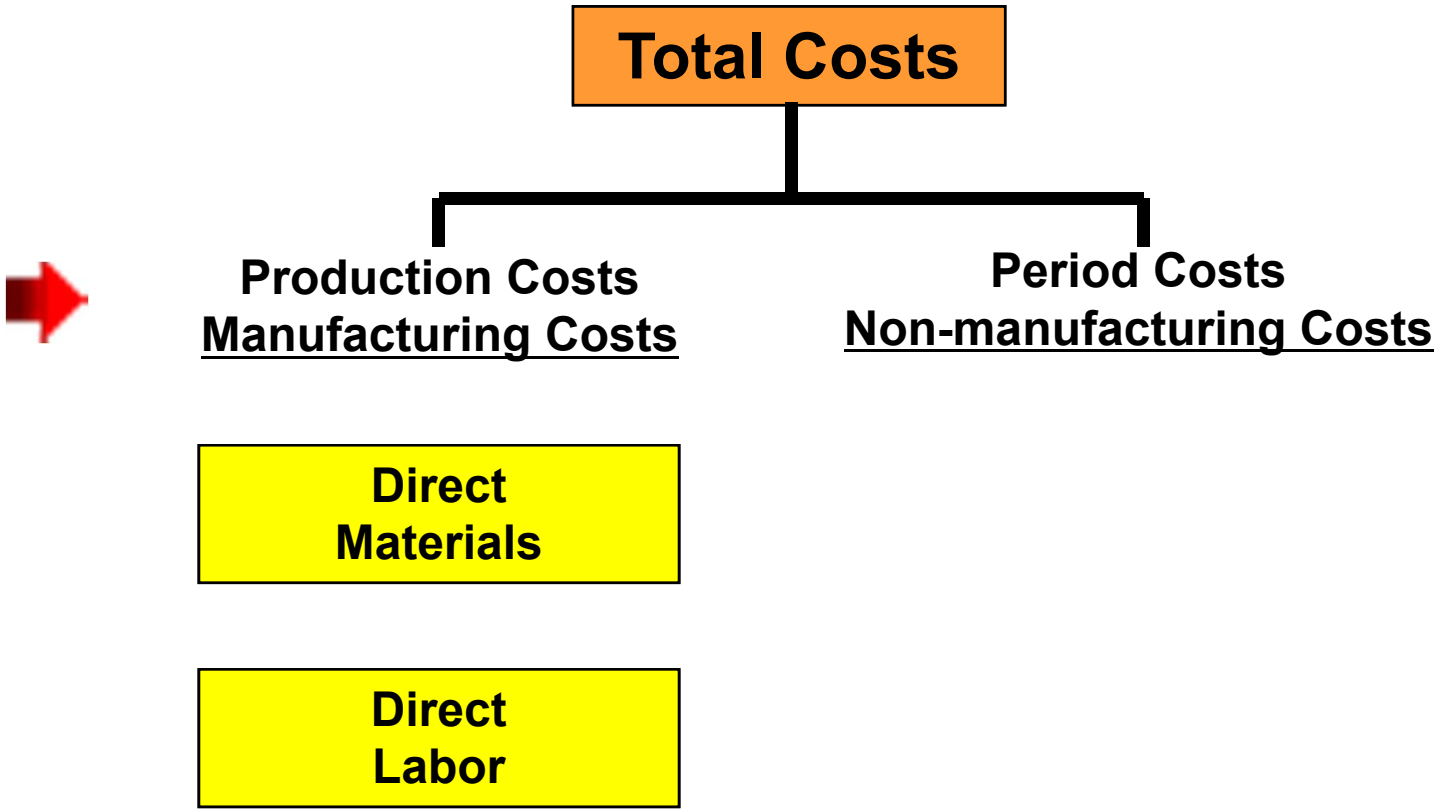
Examples of manufacturing overhead:
- Other expenses directly related to production of a specific product.
- Examples include rent and depreciation of machinery and equipment.

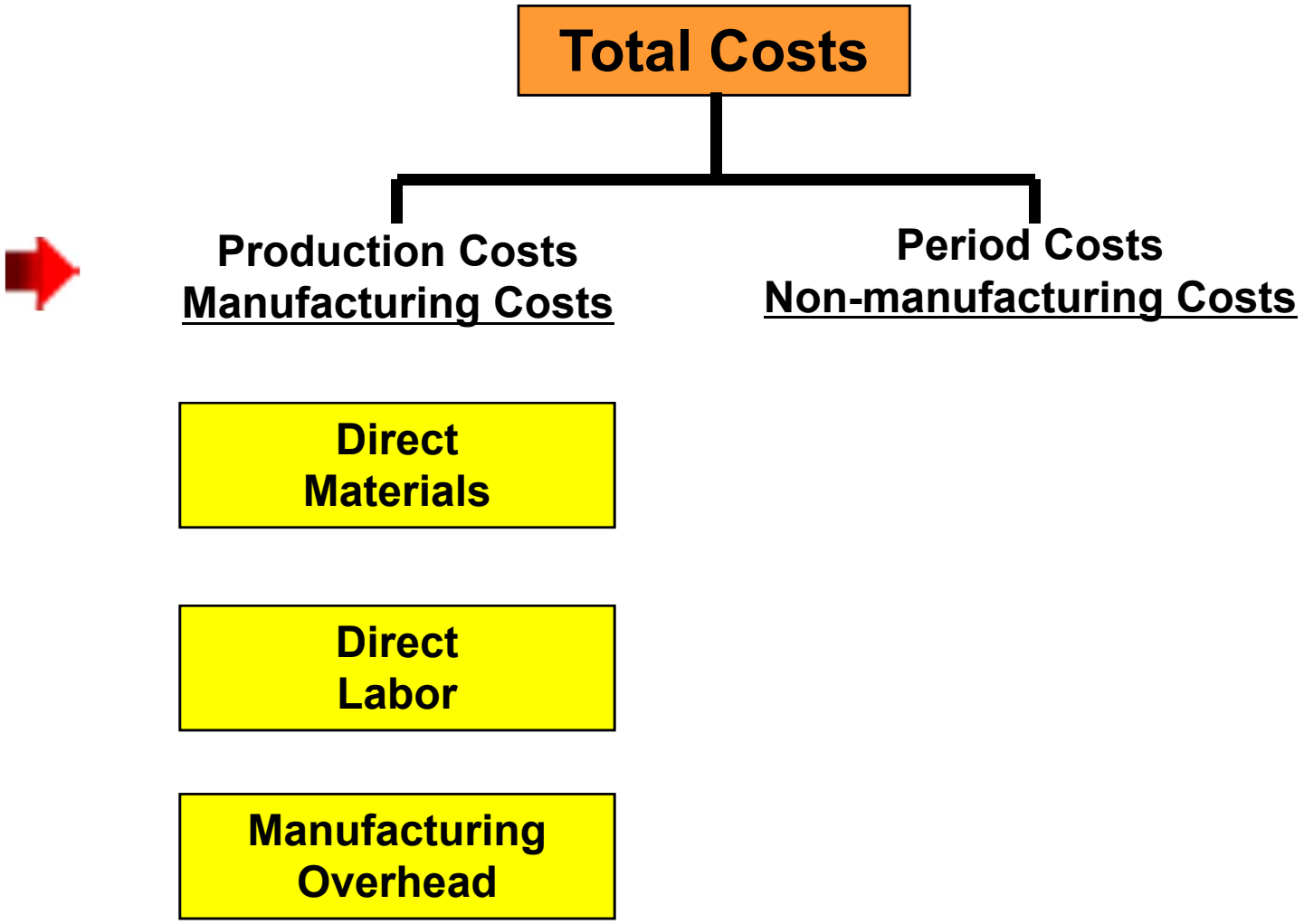
The Master Budget and Pro Forma Financial Statements

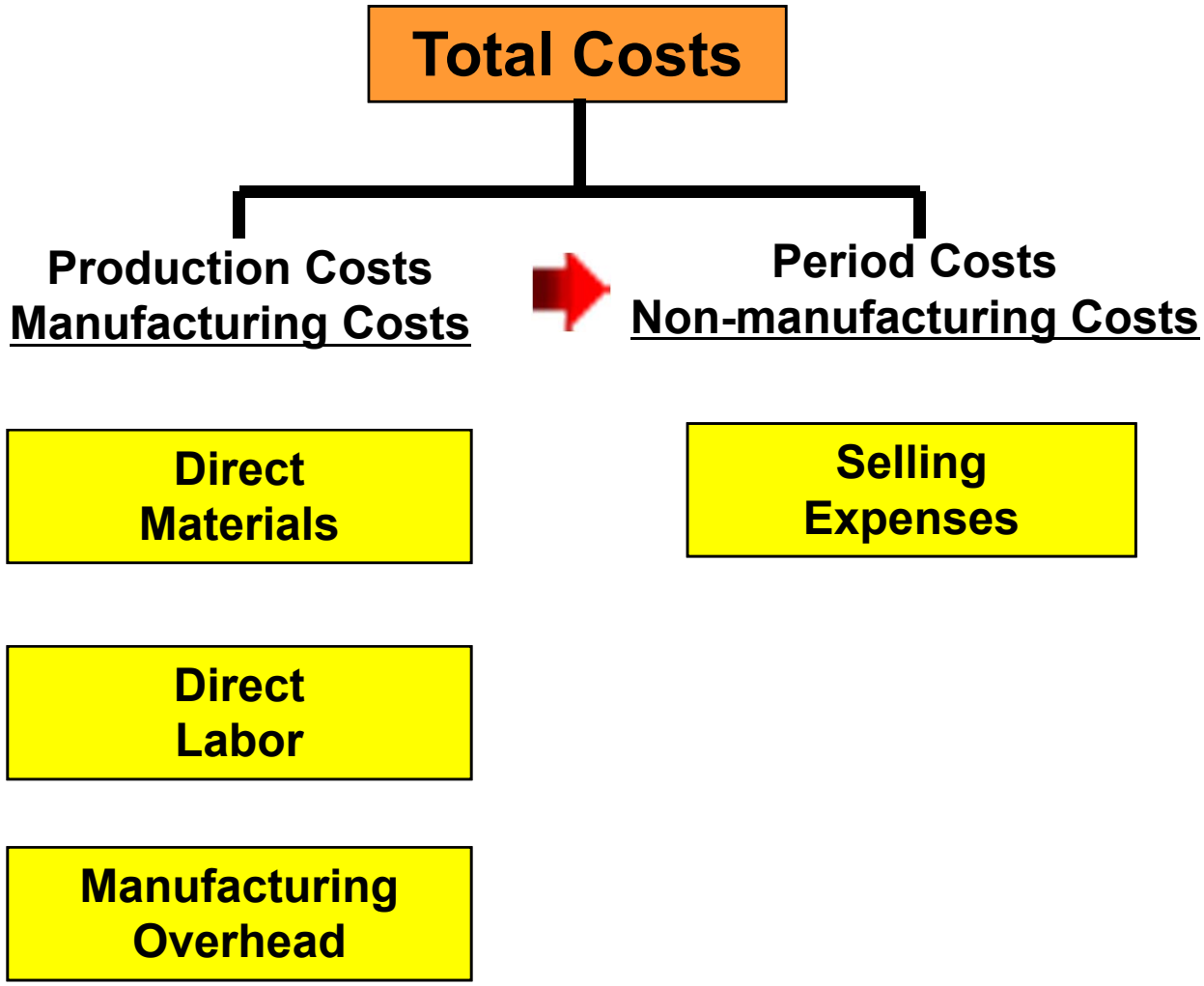
Indirect expenses are those expenses not associated with manufacturing a product or providing a service. Some examples include:

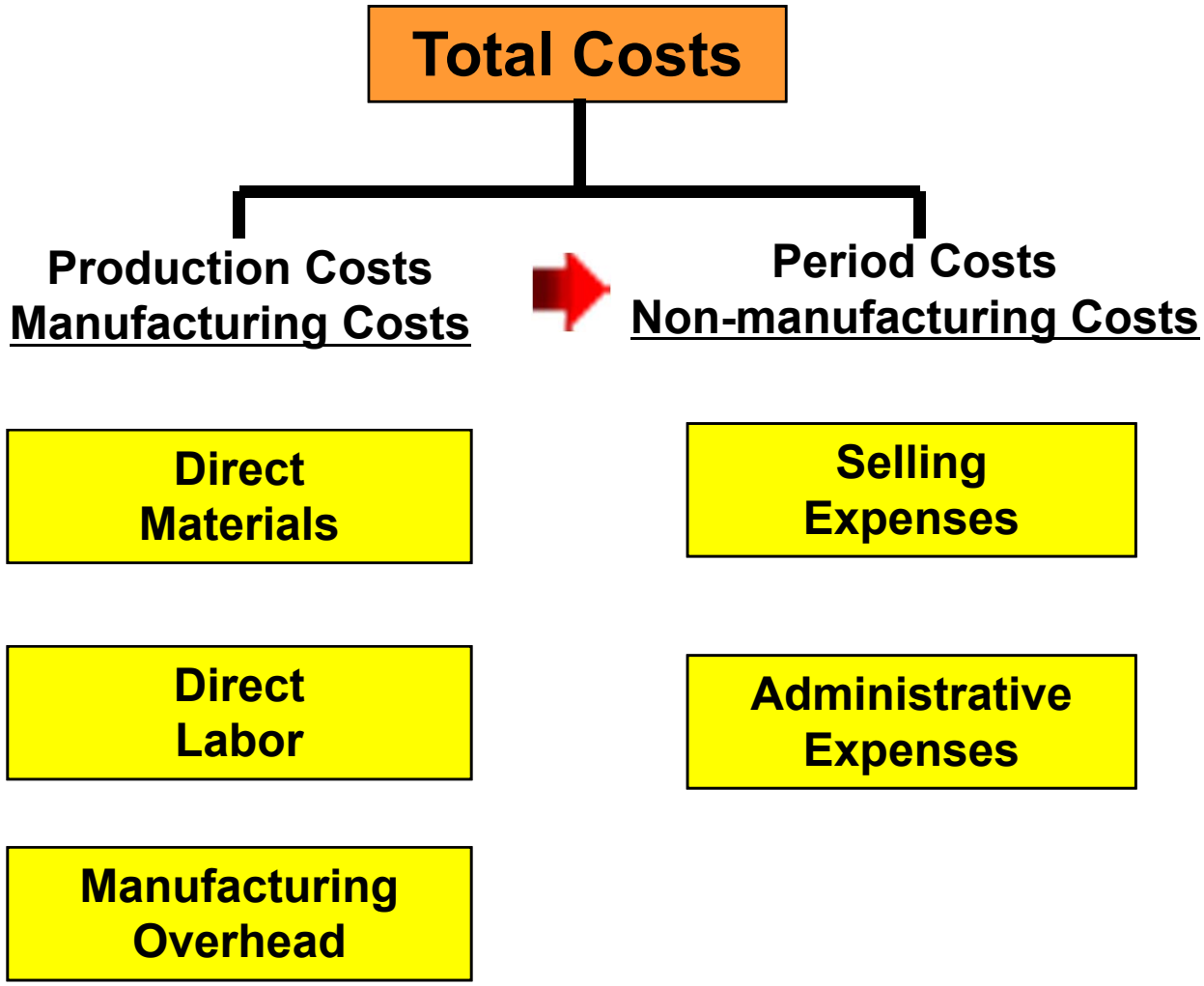
- ✓ **Marketing and selling expenses**
- ✓ **Transportation expenses outside the factory**
- ✓ **Management salaries and other administrative expenses**

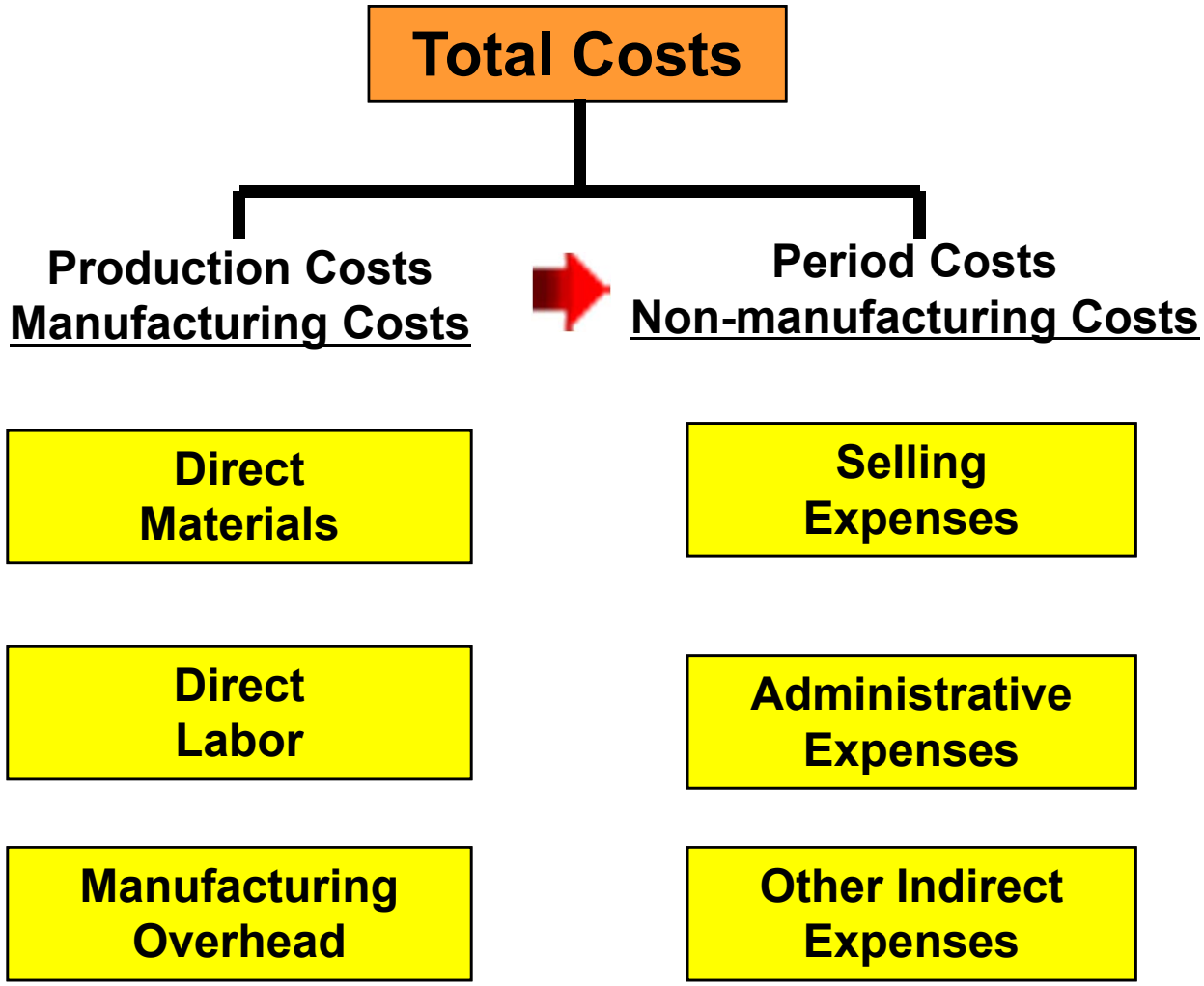

Total Costs
Production Costs
Manufacturing Costs
Period Costs
Non-manufacturing Costs
Direct
Materials


Total Costs
Production Costs
Manufacturing Costs
Period Costs
Non-manufacturing Costs
Direct
Materials
Direct
Labor


Total Costs
Production Costs
Manufacturing Costs
Period Costs
Non-manufacturing Costs
Direct
Materials
Direct
Labor
Manufacturing
Overhead


Total Costs
Production Costs
Manufacturing Costs
Period Costs
Non-manufacturing Costs
Direct Materials
Direct Labor
Manufacturing Overhead
Selling Expenses


Total Costs
Production Costs
Manufacturing Costs
Period Costs
Non-manufacturing Costs
Direct Materials
Direct Labor
Manufacturing Overhead
Selling Expenses
Administrative Expenses


Total Costs
Production Costs
Manufacturing Costs
Period Costs
Non-manufacturing Costs
Direct Materials
Direct Labor
Manufacturing Overhead
Selling Expenses
Administrative Expenses
Other Indirect Expenses

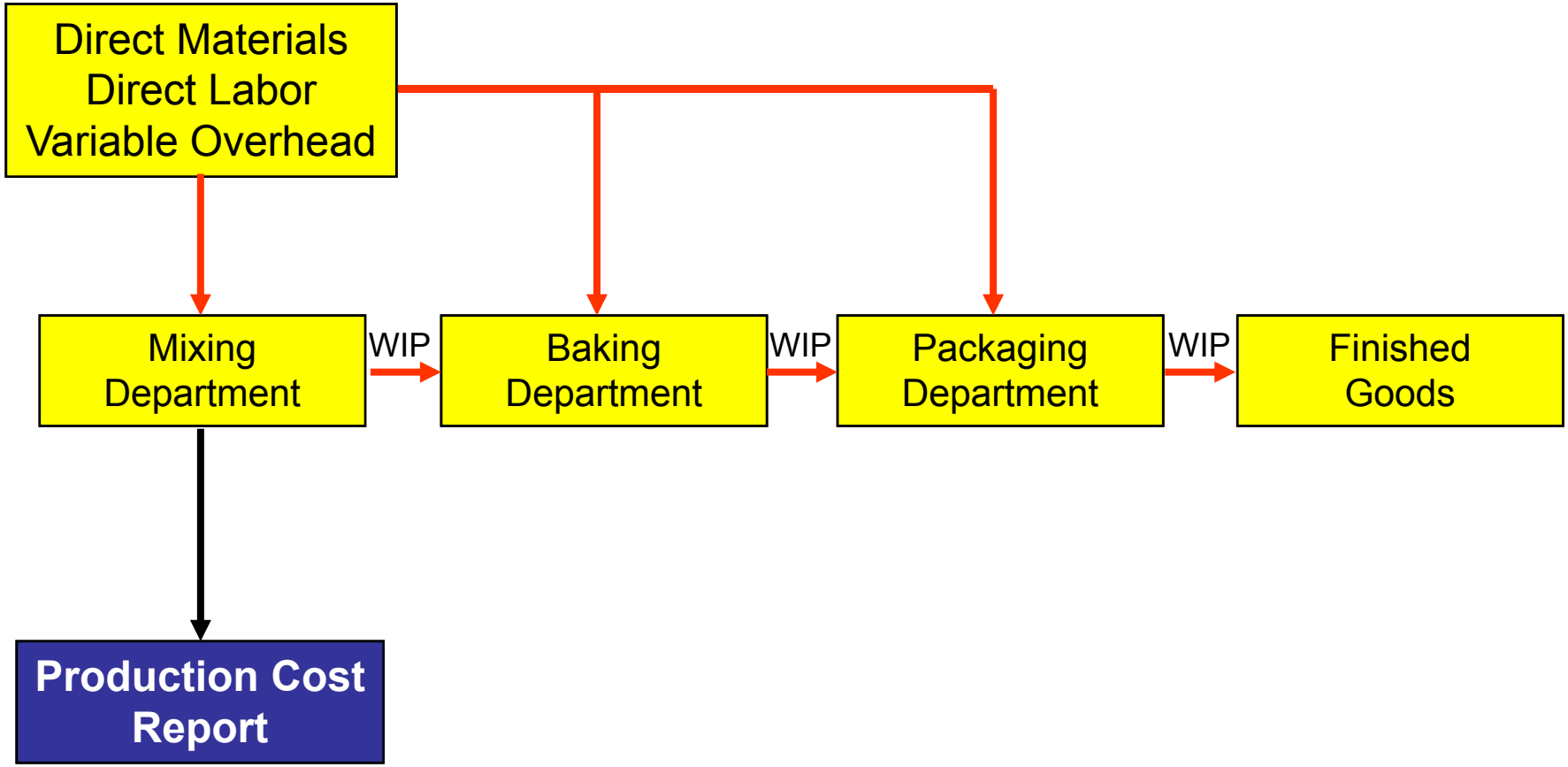
Three Cost Accounting Concepts

1. Process cost accounting
2. Job order cost accounting
3. Activity based cost accounting

1. Process Cost Accounting

- ✓ Tracking costs associated with ***a specific process***
- ✓ Direct materials and labor associated with the specific process
- ✓ Manufacturing overhead costs associated with the specific process

Example: Process Costs in Making Bread



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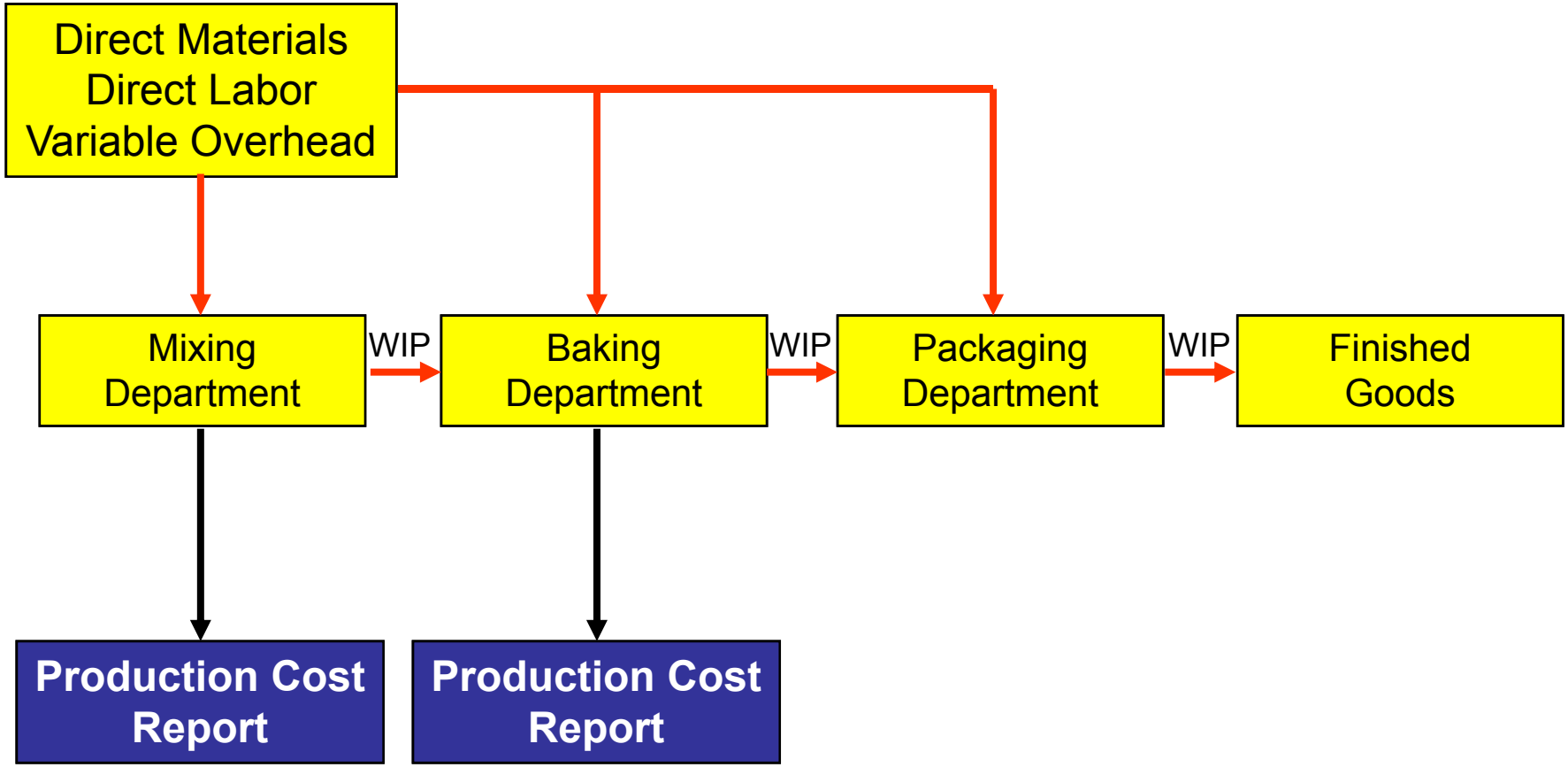

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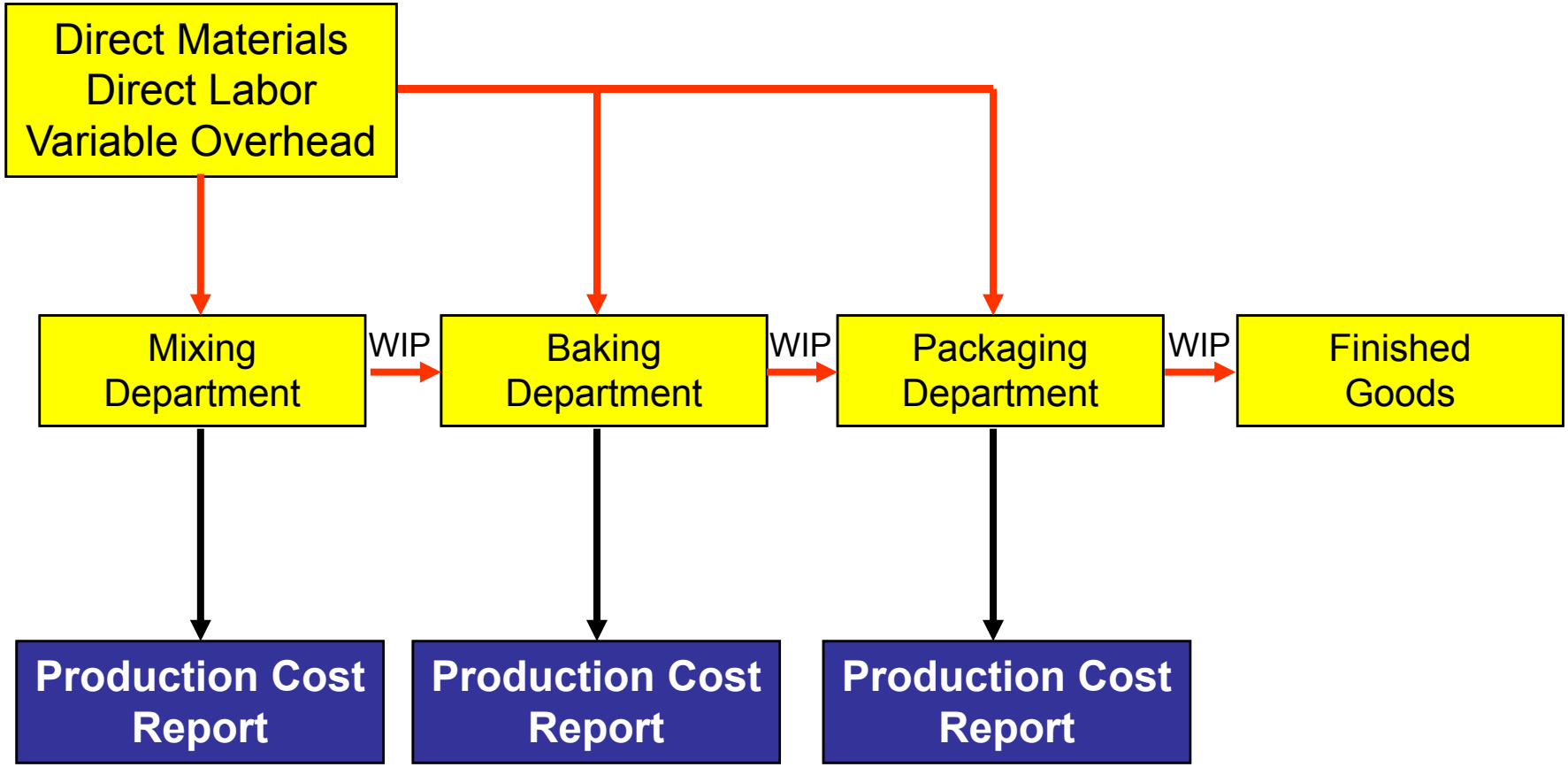


Comparison of Cost Systems

Features	Process Cost System
Work in process accounts	Multiple work in process accounts
Documents used	Production cost reports
Determination of total manf. costs	Each period
Unit-cost computations	Total manf. costs/ units produced during the period

2. Job Order Cost Accounting

- ✓Tracking costs associated with a ***specific order or job***
- ✓Direct materials and labor associated with a specific order or job
- ✓Manufacturing overhead costs associated with a specific order or job

Comparison of Cost Systems

Features	Process Cost System	Job Order Cost System
Work in process accounts	Multiple work in process accounts	One work in process account
Documents used	Production cost reports	Job cost sheets
Determination of total manf. costs	Each period	Each job
Unit-cost computations	Total manf. costs/ units produced during the period	Cost of each job/ units produced for the job

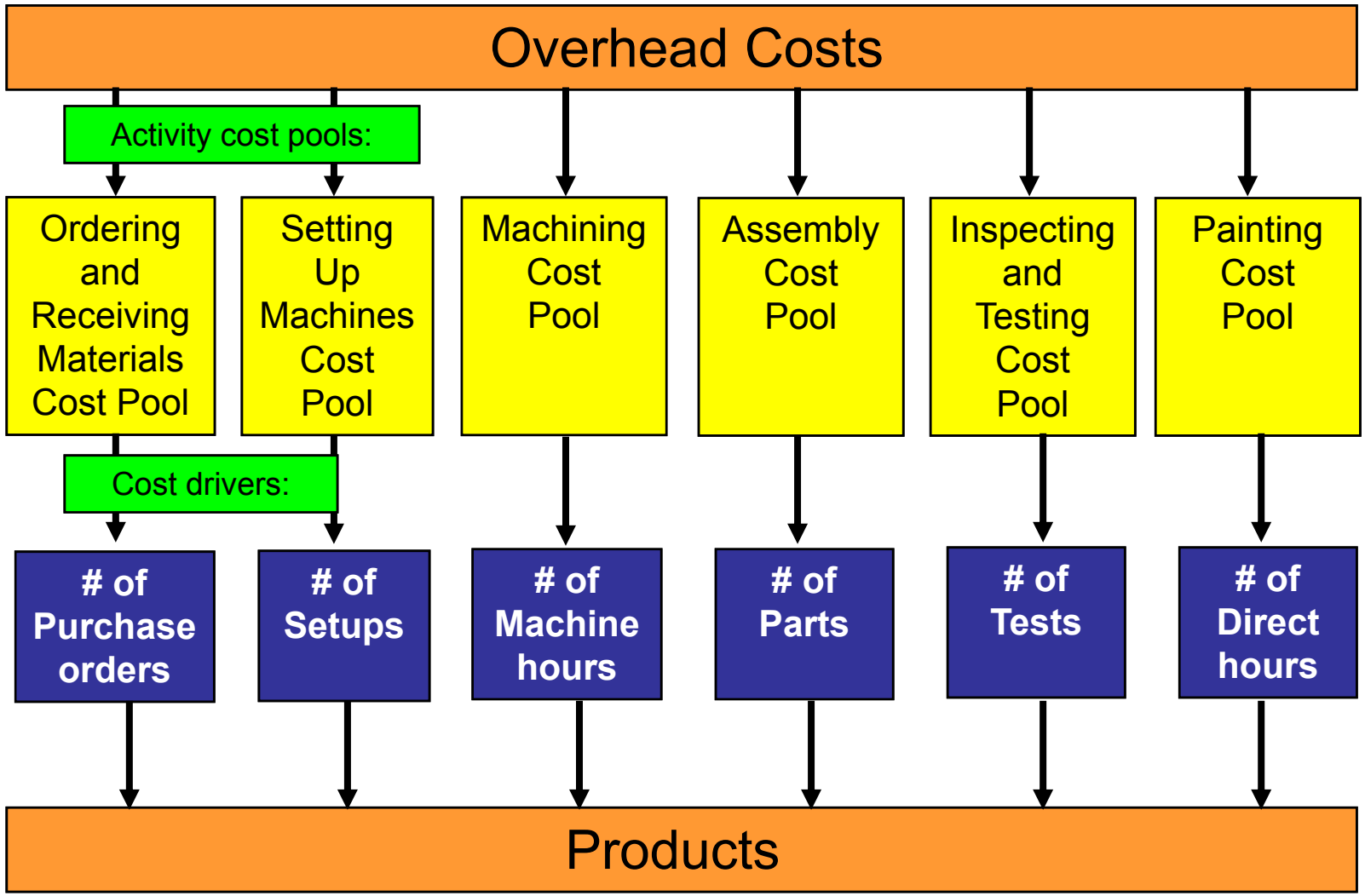
3. Activity Based Cost Accounting

- An approach for allocating overhead for firms ***with multiple enterprises***.
- An activity is any event, action, transaction or work sequence that incurs when producing a product or providing a service.
- An activity cost pool is a distinct type of activity (e.g., product assembly).
- A cost driver is any factor or activity that has a direct cause-effect relationship with resources consumed (e.g., machine hours).

Steps in ABC Accounting

1. Identify and classify activities and allocate overhead to cost pools.
2. Identify cost drivers – correlation between driver and use.
3. Compute overhead rates – ABC rate.
4. Assign overhead costs to products – use of cost drivers.
5. Comparison of unit costs across products.

Activity Based Cost Allocation



Example of ABC Accounting

ABC Overhead rate = Overhead per activity ÷ Cost driver per activity

Initial status:

Activity Cost Pool	Process overhead	Driver activity	ABC overhead rate
Setting up machines	$300,000	1,500 setups	$200/setup
Machining	$500,000	50,000 hours	$10/hour
Inspecting	$100,000	2,000 inspection	$50/inspection
Total	$900,000		

Step 1: Assigning overhead driver activity to products:

Activity Cost Pool	Cost driver	Driver activity		Product 1 activity		Product 2 activity
Setting up machines	# setups	1,500	=	500	+	1,000
Machining	Hours	50,000	=	30,000	+	20,000
Inspecting	# inspections	2,000	=	500	+	1,500

Example of ABC Accounting

Step 1: Assigning overhead driver activity to products:

Activity Cost Pool	Cost driver	Driver activity	Product 1 activity	Product 2 activity
Setting up machines	# setups	1,500	500	1,000
Machining	Hours	50,000	30,000	20,000
Inspecting	# inspections	2,000	500	1,500

Step 2: Partitioning of process overhead:

	Overhead	Product 1	Product 2
Setting up machines	$300,000	(33%) $100,000	(67%) $200,000
Machining	$500,000	(60%) $300,000	(40%) $200,000
Inspecting	$100,000	(25%) $25,000	(75%) $75,000

500/1,500 x $300,000 or 500 units x $200/setup

Example of ABC Accounting

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1,000/1,500 x $300,000 or 1,000 x $200/setup

Example of ABC Accounting

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30,000/50,000 x $500,000 or 30,000 x $10/hour

Example of ABC Accounting

Step 1: Assigning overhead driver activity to products:

Activity Cost Pool	Cost driver	Driver activity	Product 1	Product 2
Setting up machines	# setups	1,500	500	1,000
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500/2,000 x $100,000 or 500 x $50/inspection

Example of ABC Accounting

Step 1: Assigning overhead driver activity to products:

Activity Cost Pool	Cost driver	Driver activity	Product 1	Product 2
Setting up machines	# setups	1,500	500	1,000
Machining	Hours	50,000	30,000	20,000
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1,500/2,000 x $100,000 or 1,500 x $50/inspection

Example of ABC Accounting

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	Overhead	Product 1	Product 2
Setting up machines	$300,000	$100,000	$200,000
Machining	$500,000	$300,000	$200,000
Inspecting	$100,000	$25,000	$75,000
Total	$900,000	$425,000	$475,000

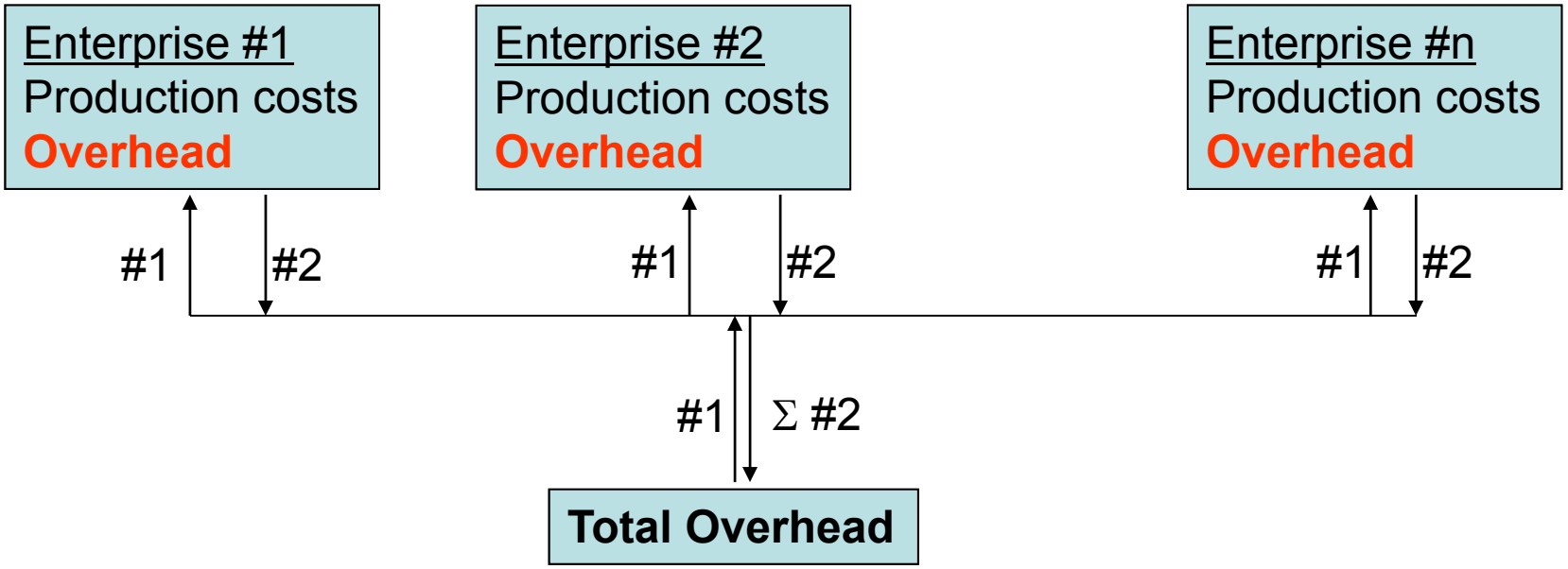
Step 3: Process overhead costs per unit:

Total number of units produced	25,000	5,000
Process overhead cost per unit	**$17**	**$95**
Traditional process overhead cost per unit*	**$30**	**$30**

* $900,000 divided by 30,000 units

Avoids overstating profitability of some enterprises and understating profitability of others

Building up from Enterprise Level



Two approaches:

1. Allocate total overhead using ABC accounting procedures
2. Sum the budgeted overhead at the enterprise level and check for consistency at the firm level (e.g., do these two approaches give approximately the same results?)