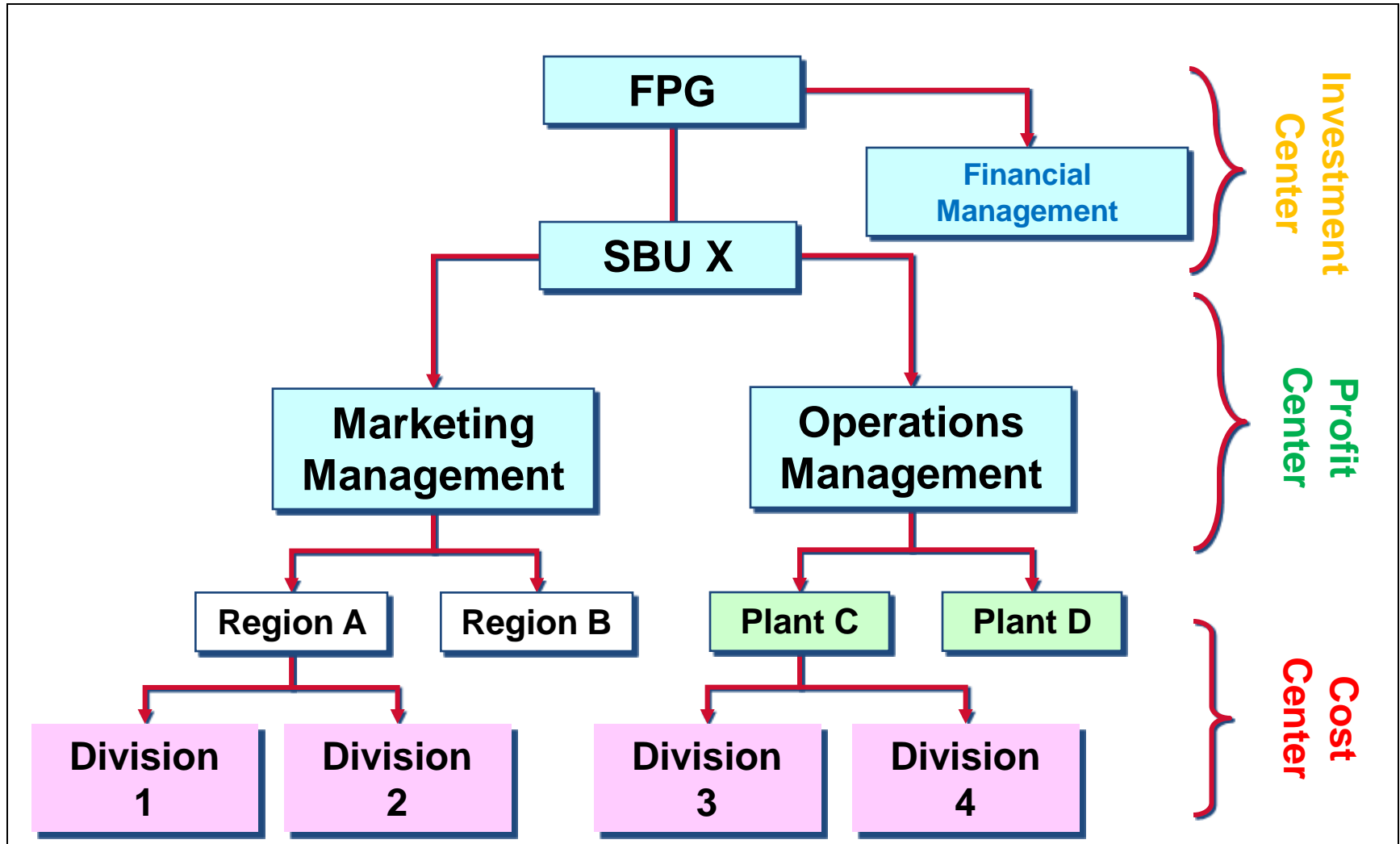


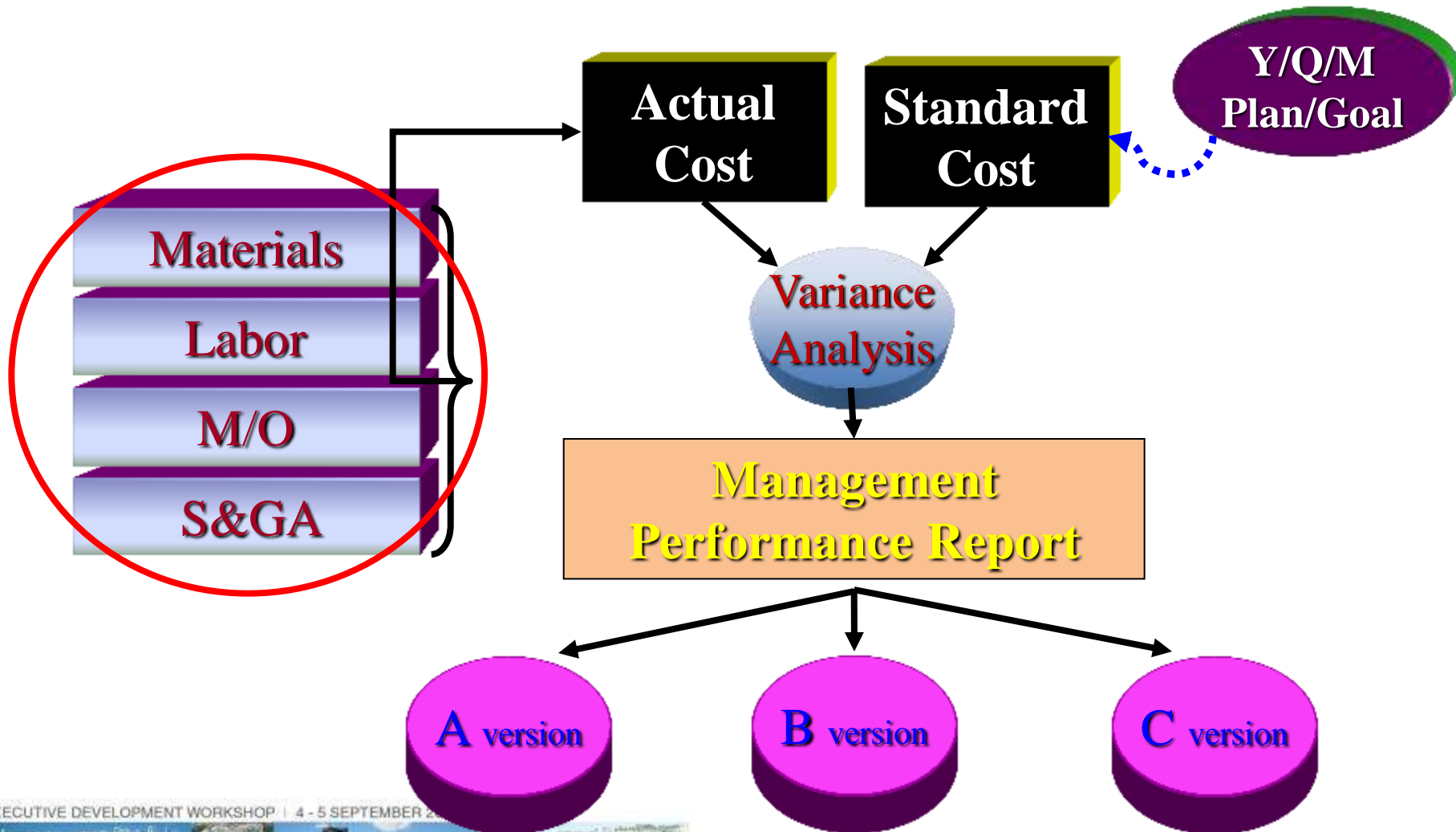
# Application of ABC in FPG

Dr. Yih-Wen Shyu (Peter)  
College of Management  
Chang Gung University, Taiwan

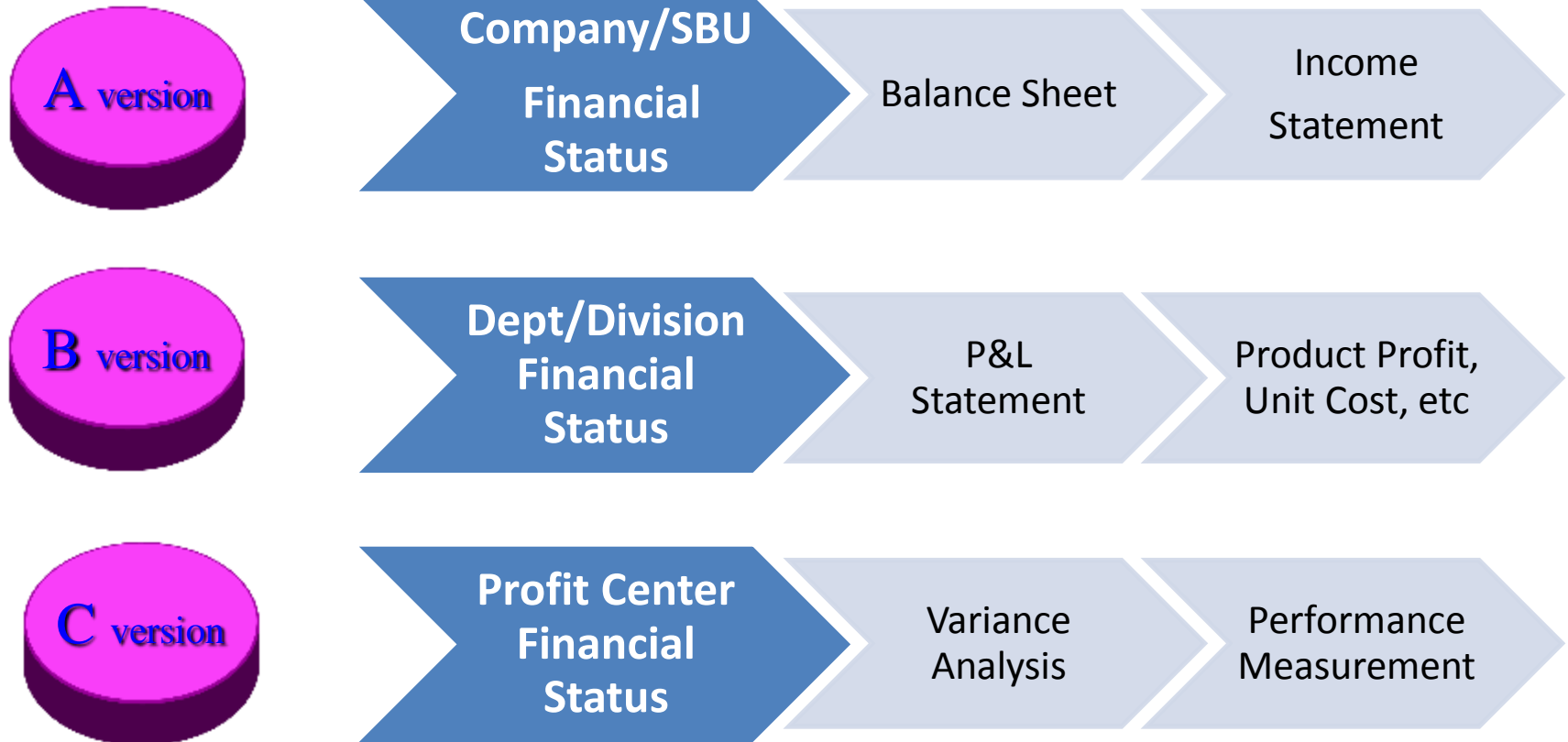
# Responsibility Accounting



# Look For Differences ?

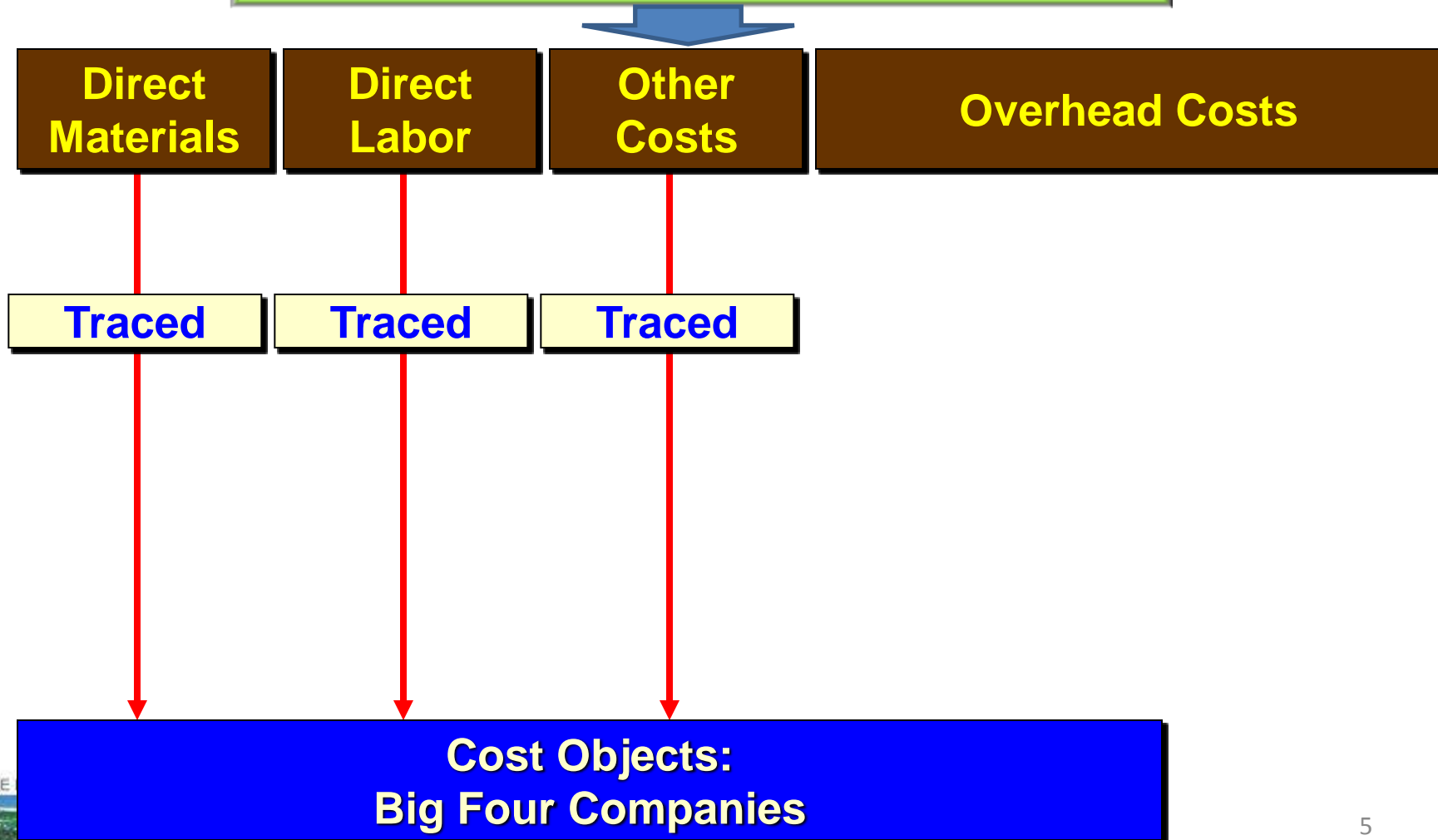


# Content of ABC: Part I



# Content of ABC: Part II

All the Costs of GMO



# All the Costs of GMO

**Direct  
Materials**

**Direct  
Labor**

**Other  
Costs**

**Overhead Costs**

First-Stage Allocation

Activity  
Cost Pool

**Operation**

**Finance**

**Marketing**

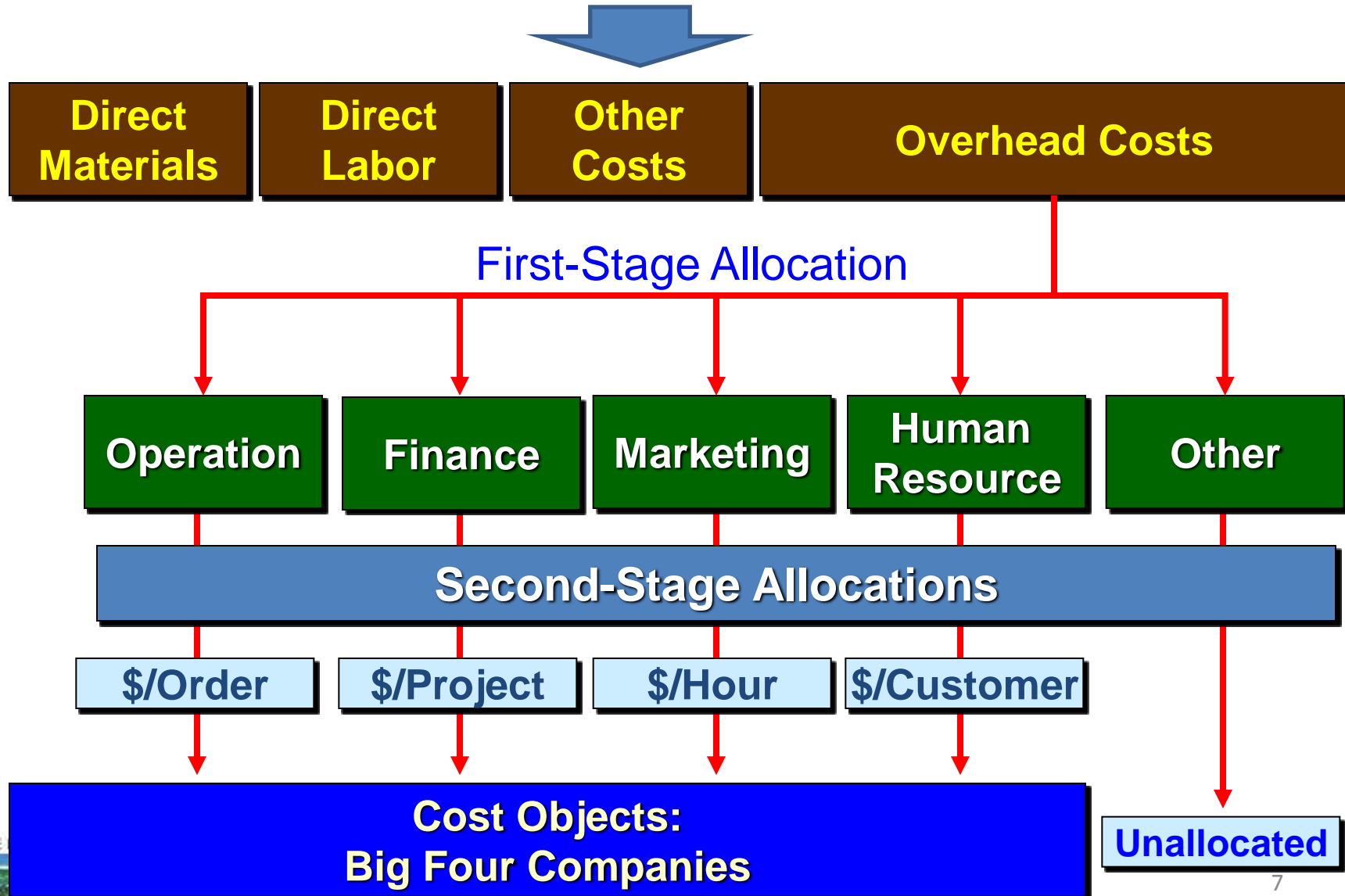
**Human  
Resource**

**Other**

**Try to Assign Non-manufacturing Costs to  
Cost Objects**

**Cost Objects:  
Big Four Companies**

# All the Costs of GMO



# Our Focus: 2<sup>nd</sup> Stage Allocation

- The duly basis is determined and used for factory overhead proration (sharing) rate exclusively according to cause and effect relations.
- Financial and **non-financial bases** are utilized for sharing overhead costs.
- All costs are considered as product related cost and this system considers all costs as variable types with respect to long run perspective.





# Target Costing: General Concept

- Target cost is the cost that can be incurred while still earning the desired profit
  - Selling price – desired profit = target cost
- The customer sets the price
  - Profit must be achieved through cost control



# Target Costing Characteristics

- Contradicts the traditional approach: design product, determine cost, set price
- Intense customer focus
  - What do they want?
  - How much will they pay for it?
- Can we make a profit on it?
- Want answers to these questions before committing to the project



# Target Costing Characteristics

- Cost control from the beginning
  - 70-90% of costs are committed to at the design stage
  - Focus on product and process design to engineer out costs from the beginning
    - Saves costly changes later on



# Comparison Between FPG Costing and Target Costing

Factors of waste materials  
and inefficiency are  
addressed for lowering costs

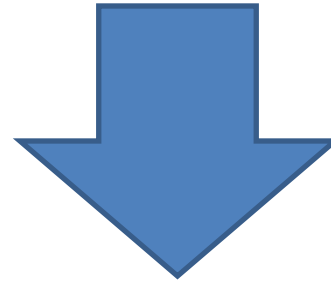
Design of product is an  
important and essential in  
lowering of costs

Costs determine sale price

Sale price determines  
production costs



# Benchmark



## **Quantity standards**

specify how much of an input should be used to make a product or provide a service.

## **Price standards**

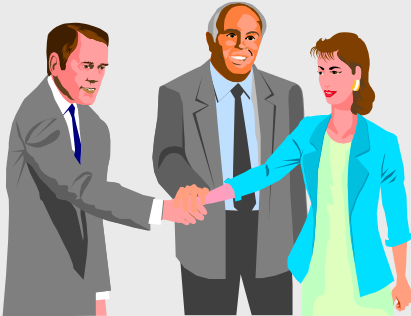
specify how much should be paid for each unit of the input.



# Setting Direct Material Standards

**Price Standards**

**Final, delivered cost of materials, net of discounts.**



**Quantity Standards**

**Summarized in a Bill of Materials.**



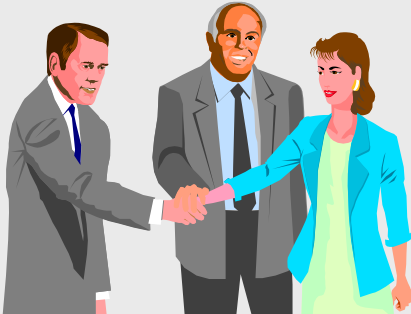
# Setting Direct Material Standards

**Price Standards**



**Quantity Standards**

**Final, delivered cost of materials, net of discounts.**

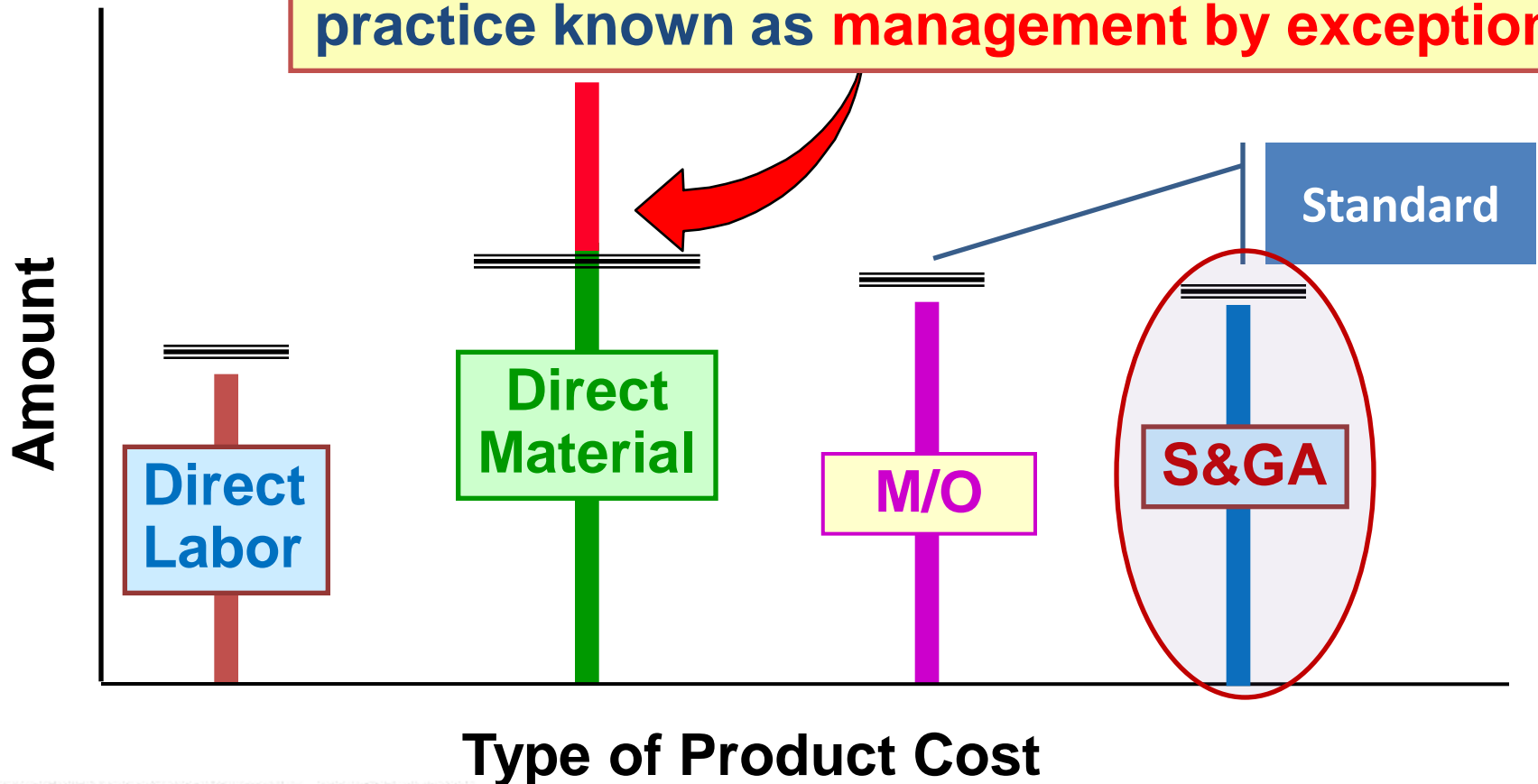


**Summarized in a Bill of Materials.**



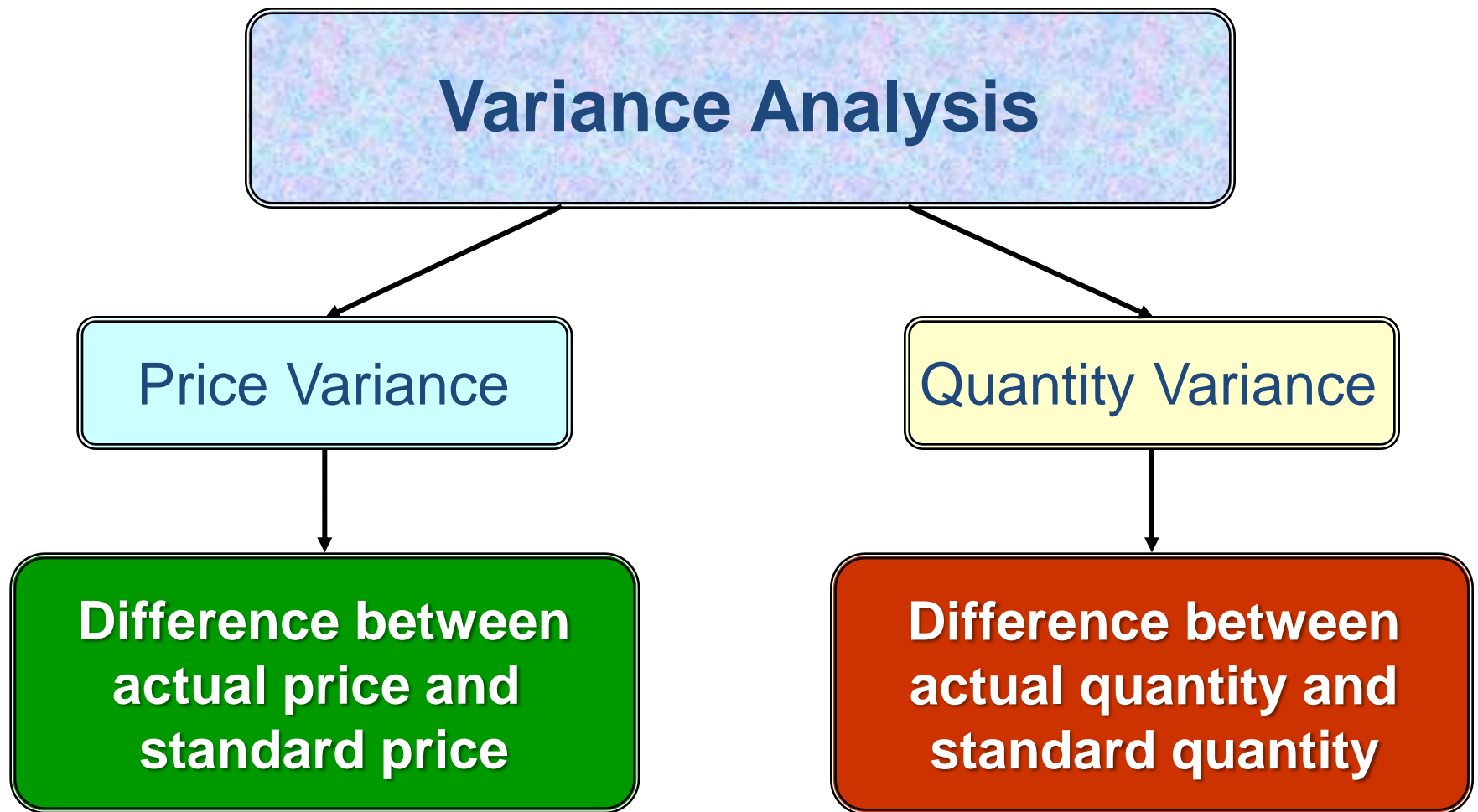
# Standard Costs

Deviations from standards deemed significant are brought to the attention of management, a practice known as **management by exception**.

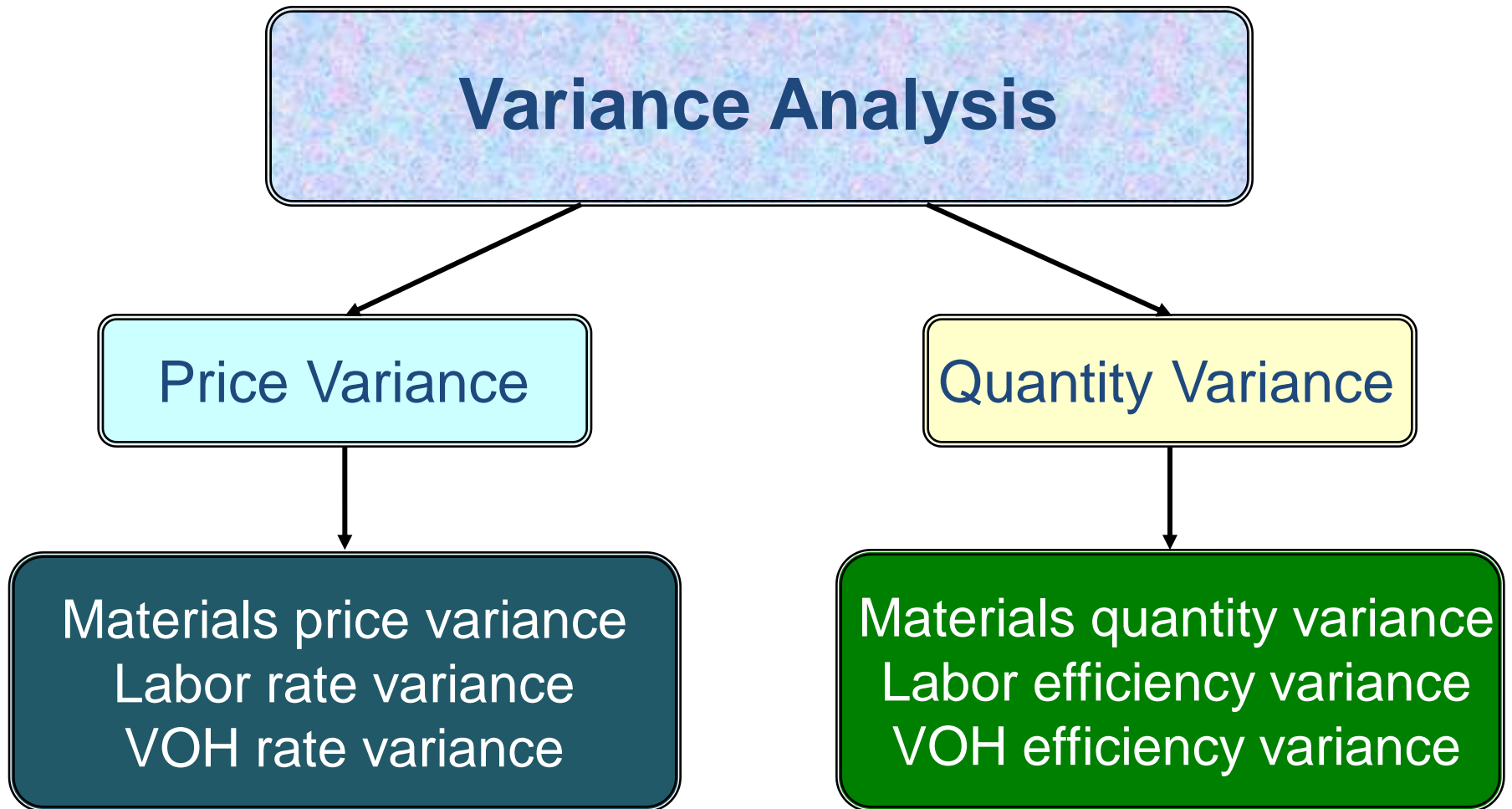




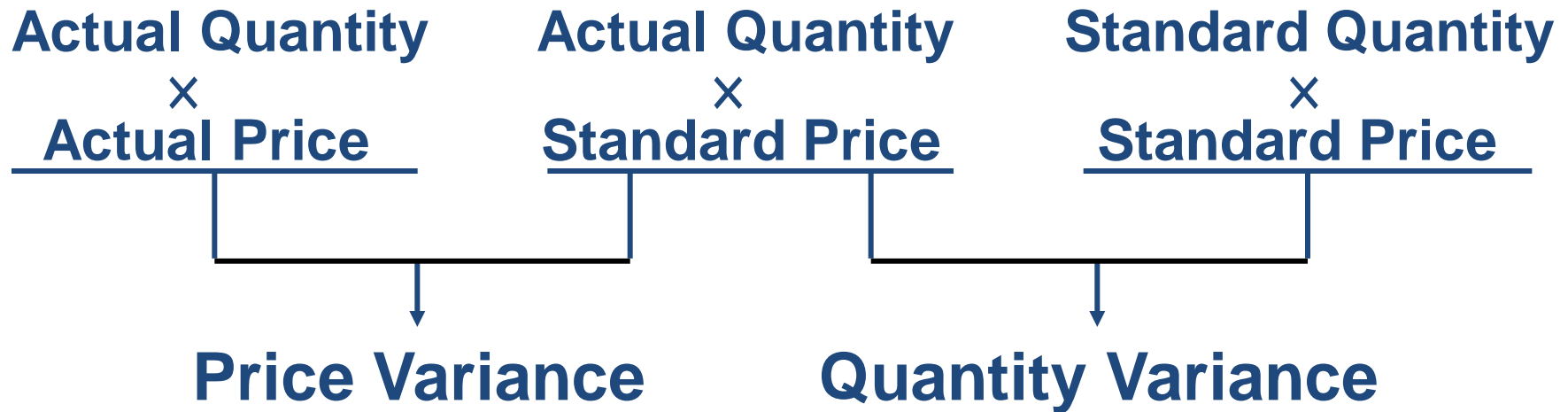
# A General Model for Variance Analysis



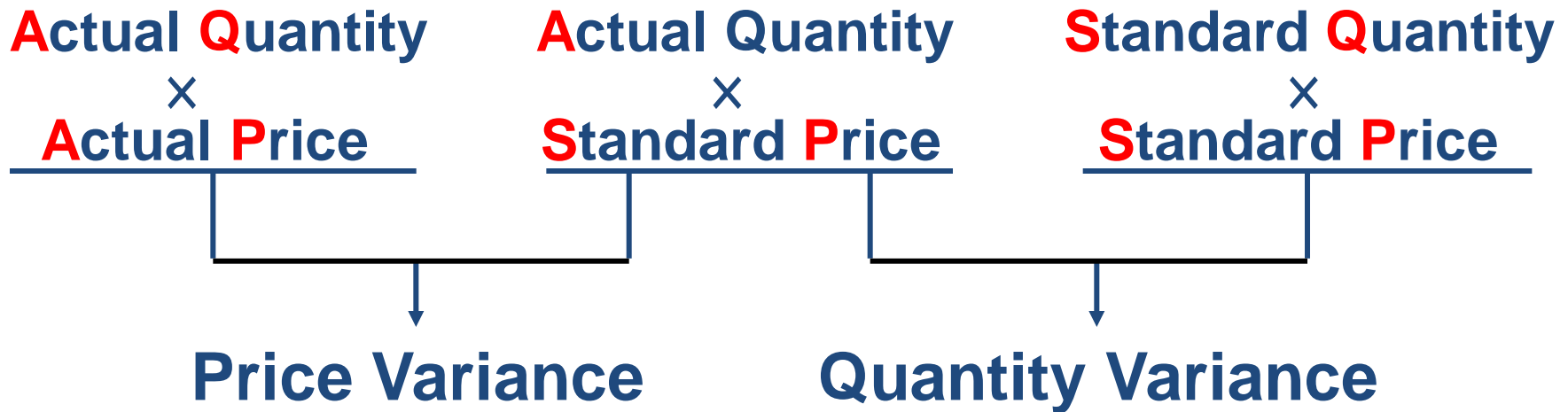
# A General Model for Variance Analysis



# A General Model for Variance Analysis



# A General Model for Variance Analysis



$$(AQ \times AP) - (AQ \times SP)$$

**AQ = Actual Quantity**

**AP = Actual Price**

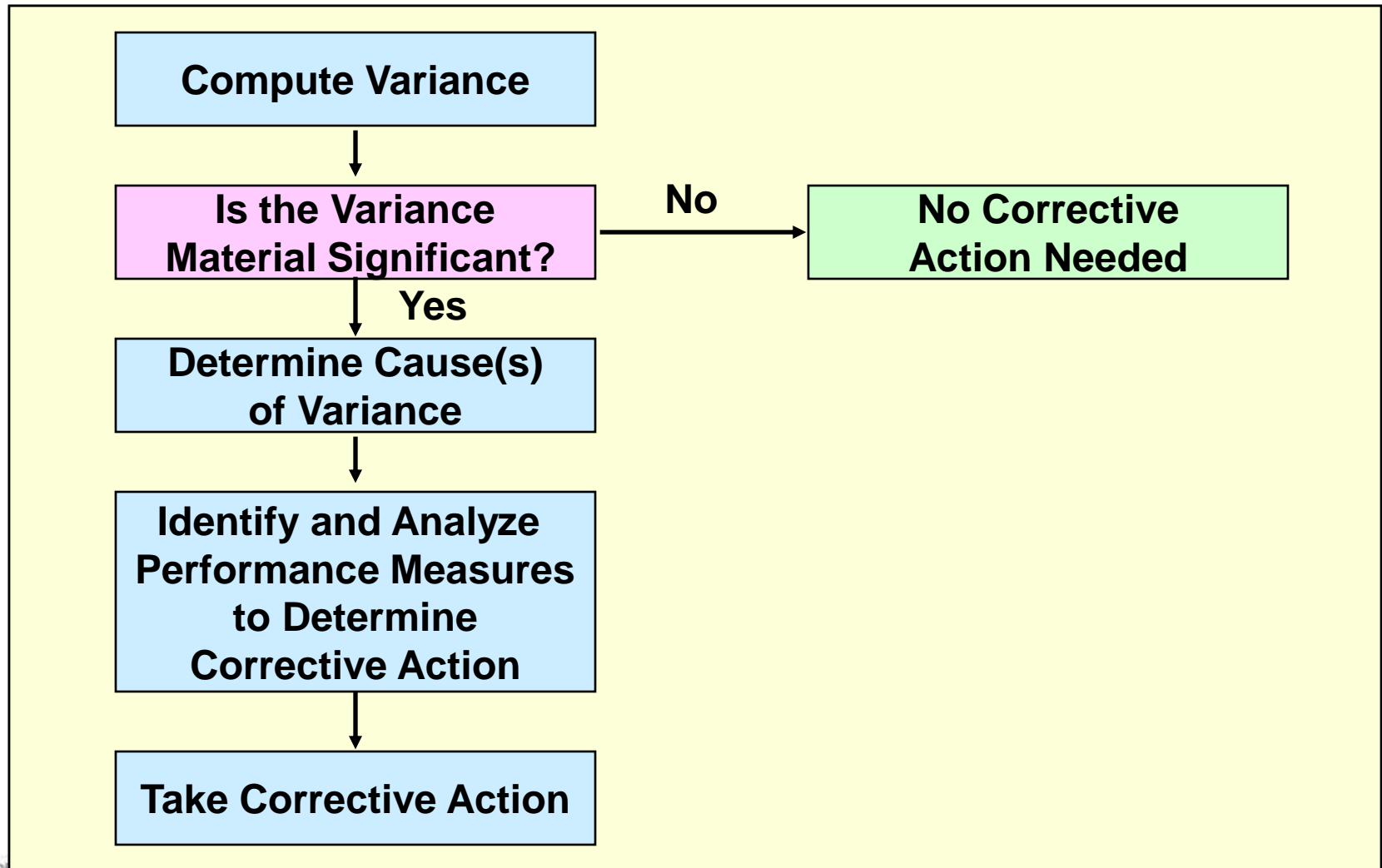
$$(AQ \times SP) - (SQ \times SP)$$

**SP = Standard Price**

**SQ = Standard Quantity**



# Using Variance Analysis to Control Costs



公司 年目標與 利益差異分析

六、銷管財費用影響		五、變動成本影響			三、銷售量增減		一、售價影響	
-29,096		107,343			-415,258		-434,151	
項目	金額	產品別	金額		產品別	金額	產品別	金額
			變動工繳差	副料成本差				
1. 推銷費用	48,884	1.	88,616	-883	1.	-408,399	1.	515,920
2. 管理費用	19,237							
3. 財務費用	-97,217	2.	12,406	7,205	2.	-6,859	2.	-950,071

項目	金額	產品別	金額		產品別	金額
			固定工繳差	產量增減		
1. 生產成本與銷售成本差異影響	528,507	1.	-124,299	913,432	1.	-350,813
2. 當期生產數量與銷售量差異影響	0					
3. 轉投資損益	122,243					
4. 未實現損益	-126,923					
5. 其它	22,732	2.	197,503	128,827	2.	484,178
<b>七、其它影響</b>		<b>四、固定工繳影響</b>			<b>二、原料成本影響</b>	
544,559		1,115,463			133,365	

備註：  
「+」表示利益增加  
「-」表示利益減少

單位：

項目	利益額
103年目標	191,300
102年實際	-831,000
差異	有利 1,000,700
	不利 -878,500
	合計 1,022,200

# Demo

Compute the direct  
labor rate and  
efficiency variances and  
explain  
their significance.

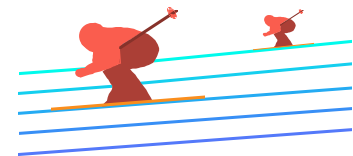


# Labor Variances – An Example

Steve has the following direct labor standard for the product of PVC.

**1.2 standard hours per ton at \$10.00 per hour**

Last month, employees actually worked 2,500 hours at a total labor cost of \$26,250 to make 2,000 tons.





# Labor Variances Summary

$$\begin{array}{r} \text{Actual Hours} \\ \times \\ \hline \text{Actual Rate} \end{array}$$

2,500 hours

$$\begin{array}{r} \times \\ \$10.50 \text{ per hour} \end{array}$$

= \$26,250

$$\begin{array}{r} \text{Actual Hours} \\ \times \\ \hline \text{Standard Rate} \end{array}$$

2,500 hours

$$\begin{array}{r} \times \\ \$10.00 \text{ per hour.} \end{array}$$

= \$25,000

$$\begin{array}{r} \text{Standard Hours} \\ \times \\ \hline \text{Standard Rate} \end{array}$$

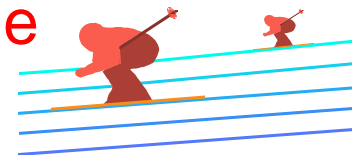
2,400 hours

$$\begin{array}{r} \times \\ \$10.00 \text{ per hour} \end{array}$$



= \$24,000

Rate variance  
\$1,250 unfavorable

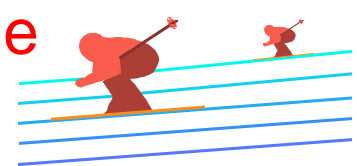
Efficiency variance  
\$1,000 unfavorable





# Labor Variances Summary

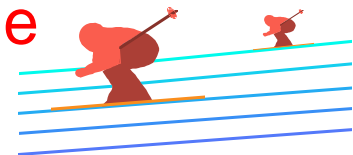
<u>Actual Hours</u> × <u>Actual Rate</u>	<u>Actual Hours</u> × <u>Standard Rate</u>	<u>Standard Hours</u> × <u>Standard Rate</u>
2,500 hours × \$10.50 per hour	2,500 hours × \$10.00 per hour	2,400 hours × \$10.00 per hour
<b>= \$26,250</b>	<b>= \$25,000</b>	<b>= \$24,000</b>
 <p style="text-align: center;"><b>Rate variance</b> <b>\$1,250 unfavorable</b></p>		 <p style="text-align: center;"><b>Efficiency variance</b> <b>\$1,000 unfavorable</b></p>

$$\begin{aligned} & \$26,250 \div 2,500 \text{ hours} \\ & = \$10.50 \text{ per hour} \end{aligned}$$



# Labor Variances Summary

<u>Actual Hours</u> × <u>Actual Rate</u>	<u>Actual Hours</u> × <u>Standard Rate</u>	<u>Standard Hours</u> × <u>Standard Rate</u>
2,500 hours × \$10.50 per hour = \$26,250	2,500 hours × \$10.00 per hour = \$25,000	2,400 hours × \$10.00 per hour = \$24,000
<div style="border: 1px solid black; background-color: #e0ffe0; padding: 10px; display: inline-block; margin: 10px auto; width: fit-content;">                     1.2 hours per ton × 2,000 ton = 2,400 hours                 </div>		
 <p style="color: red; font-weight: bold;">Rate variance \$1,250 unfavorable</p>		 <p style="color: red; font-weight: bold;">Efficiency variance \$1,000 unfavorable</p>



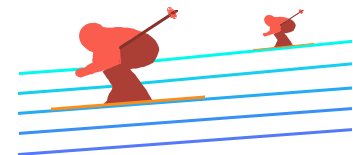
# Labor Variances: Using the Factored Equations

## Labor rate variance

$$\begin{aligned} \text{LRV} &= \text{AH} (\text{AR} - \text{SR}) \\ &= 2,500 \text{ hours } (\$10.50 \text{ per hour} - \$10.00 \text{ per hour}) \\ &= 2,500 \text{ hours } (\$0.50 \text{ per hour}) \\ &= \$1,250 \text{ unfavorable} \end{aligned}$$

## Labor efficiency variance

$$\begin{aligned} \text{LEV} &= \text{SR} (\text{AH} - \text{SH}) \\ &= \$10.00 \text{ per hour } (2,500 \text{ hours} - 2,400 \text{ hours}) \\ &= \$10.00 \text{ per hour } (100 \text{ hours}) \\ &= \$1,000 \text{ unfavorable} \end{aligned}$$



# Responsibility for Labor Variances

Production managers are usually held accountable for labor variances because they can influence the:



Production Manager

Mix of skill levels assigned to work tasks.

Level of employee motivation.

Quality of production supervision.

Quality of training provided to employees.



# One Day Closing in FPG

Dr. Yih-Wen Shyu (Peter)  
College of Management  
Chang Gung University, Taiwan

# One Day Closing

Mr. Wang's Goal (achieved in May 2001)

In Time

V.S.

Management System



Enter Once  
Multi-Input

Financial Settlement  
Financial Statement



# What Wang's Concern?

**Profit or Loss**

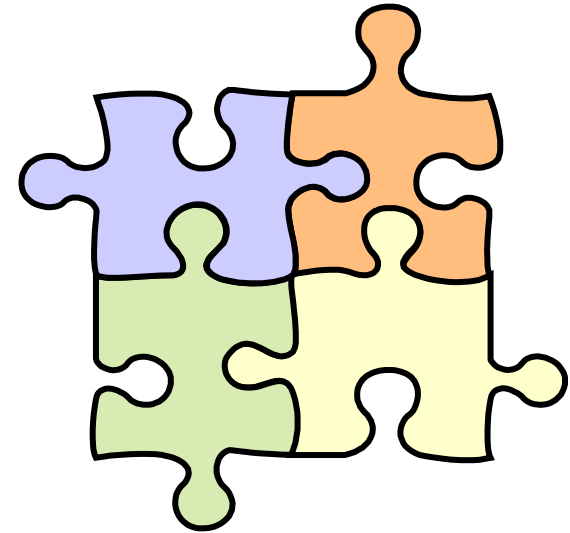
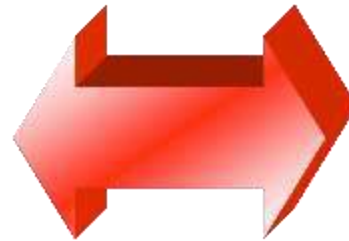




# Concept



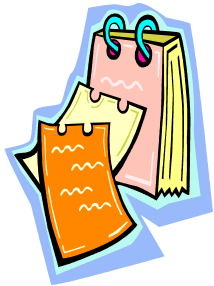
**Account Settlement**



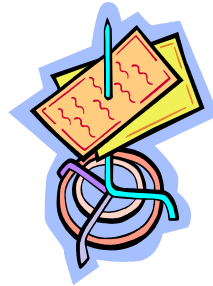
**Management System**



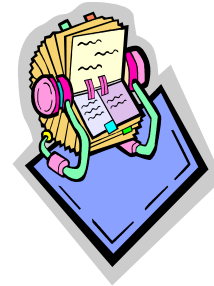
# Enter Once = Multi-Input



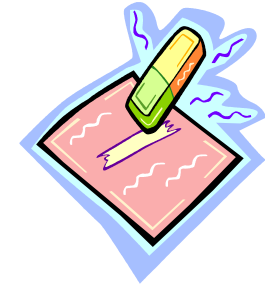
**Operation  
Management**



**Materials  
Management**



**Marketing  
Management**



**Financial  
Management**

**Ensure Data Integrity**



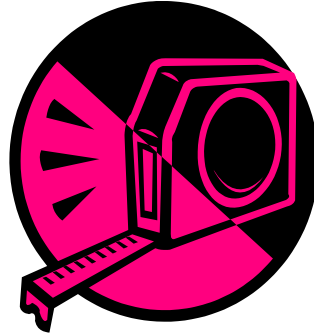
**Financial Settlement**



# Check for Abnormal Data



Computerized  
Operation  
Check List



Management  
Operation  
Check



Abnormal  
Settlement  
List



Cost  
Calculation  
Check

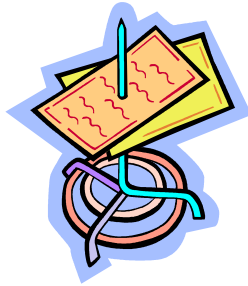
Ensure Complete and Accurate Data



# Control Settlement Schedule



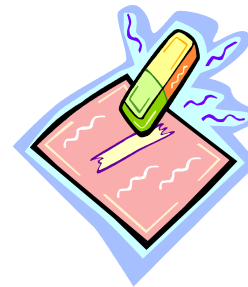
Operation Management



Materials Management



Marketing Management



Financial Management

**Batch Schedule**



One Day Closing

FPC : 1<sup>st</sup> of the month 03 : 30am

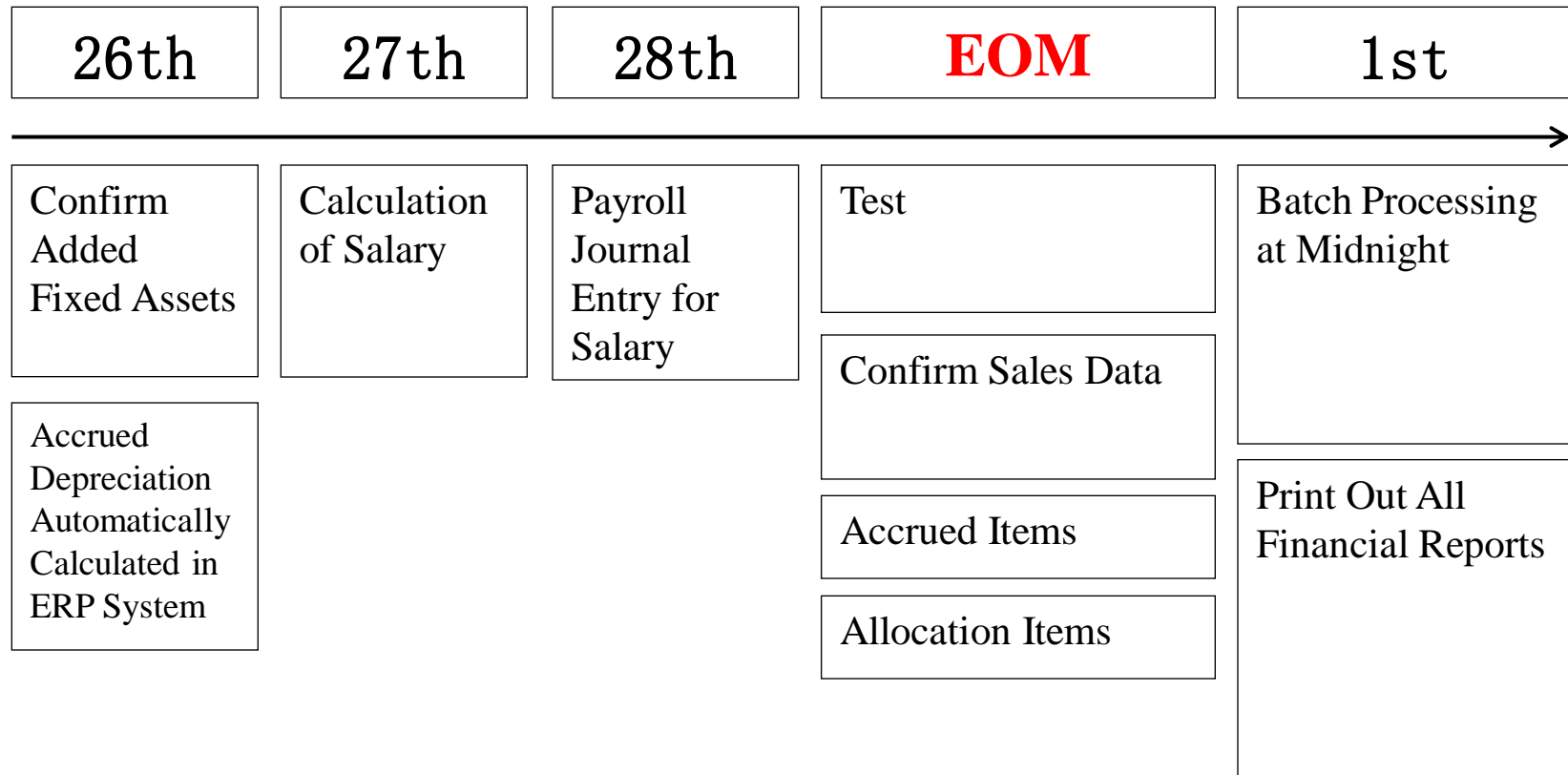
NYP : 1<sup>st</sup> of the month 06 : 00am

FCF : 1<sup>st</sup> of the month 05 : 00am

FPC : 1<sup>st</sup> of the month 04 : 30am



# Brief Flow Chart



# End



# Q&A

