



**POLITECNICO**  
MILANO 1863

create future financial statement  
Draft future EBIT (income statement)  
first result of the strategy!

## *Accounting, Finance & Control*

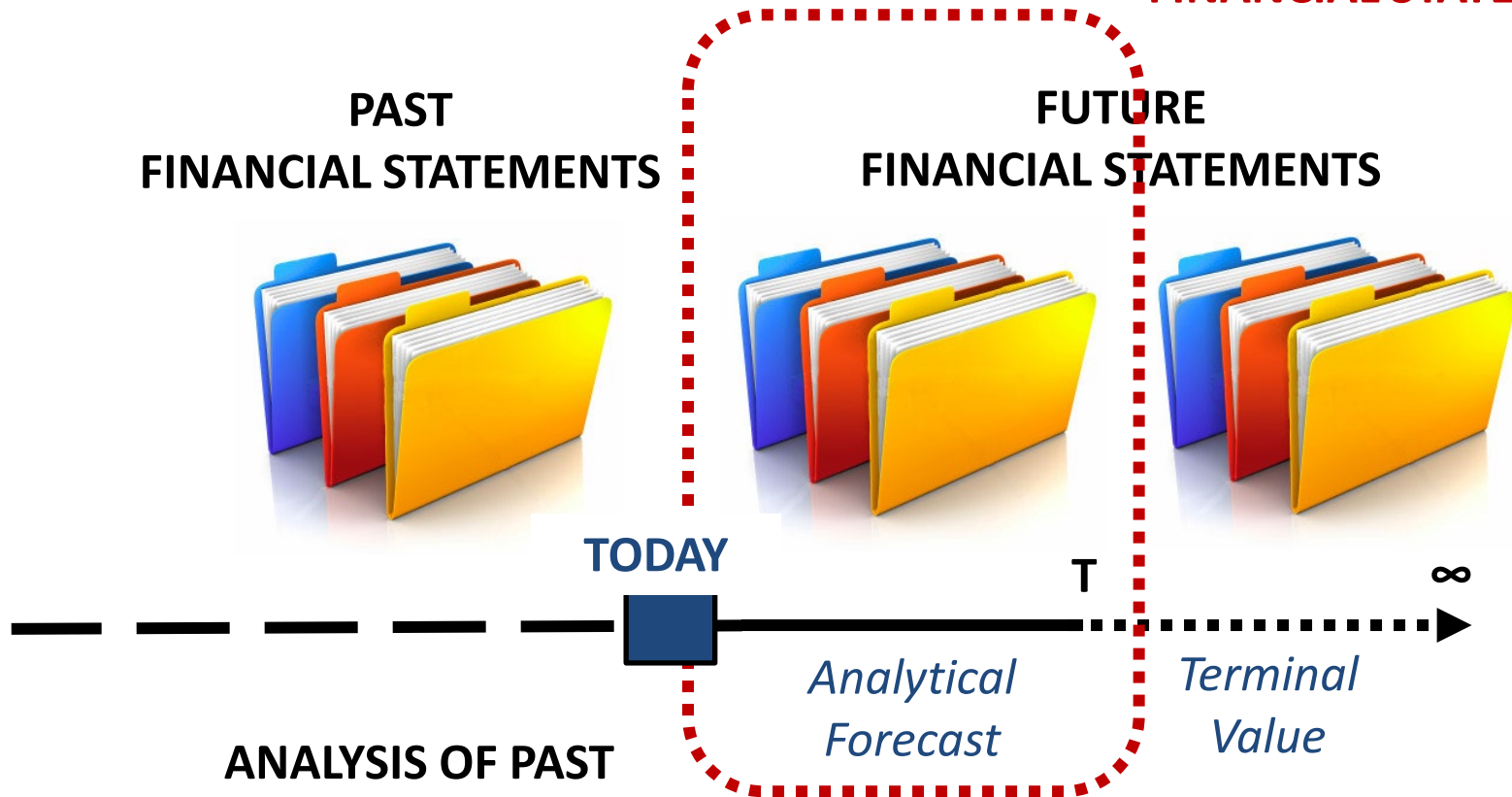
# Target Setting & Budgeting



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# Where we are so far

## HOW TO DRAFT THE FUTURE FINANCIAL STATEMENTS?



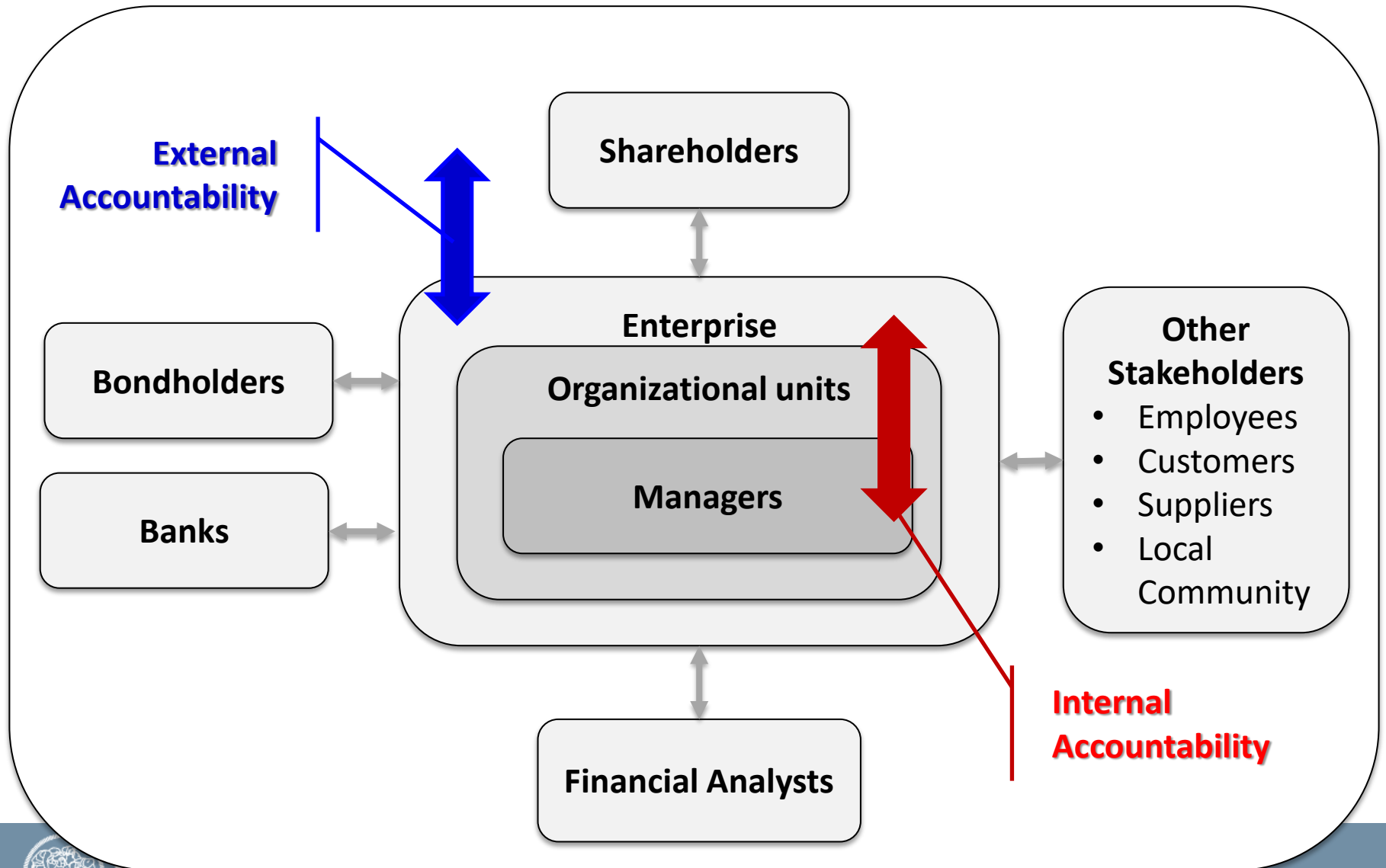
**ANALYSIS OF PAST  
FINANCIAL STATEMENTS  
THROUGH RATIO ANALYSIS**

Accounting & Financing

$$EV = \sum_{t=1}^{\infty} \frac{FCFF(t)}{(1 + WACC)^t}$$



# From *OUTSIDE* to *INSIDE*



# Management Accounting

*Management Accounting is ...*

the process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of sharing information used by management to plan and control within an entity and to assure appropriate use of and accountability for its resources.

Management accounting also comprises the preparation of financial reports for non management groups such as shareholders, creditors, regulatory agencies and tax authorities.

*(definition by the Chartered Institute of Management Accounts)*

planning means next year!

Maximaizing EV or E is the goal of a company



# *The Plan & Control Cycle (1)*

## Goals

next 12 months

**Short-term Goals are in term of**

- ***Financial Indicators***
  - *ROE, ROI, ROS, ATR, D/E, CF from operating activities*
- ***Non-financial indicators***
  - *customer satisfaction, delivery time, carbon footprint*



# The Plan & Control Cycle (2)

Goals

Resources

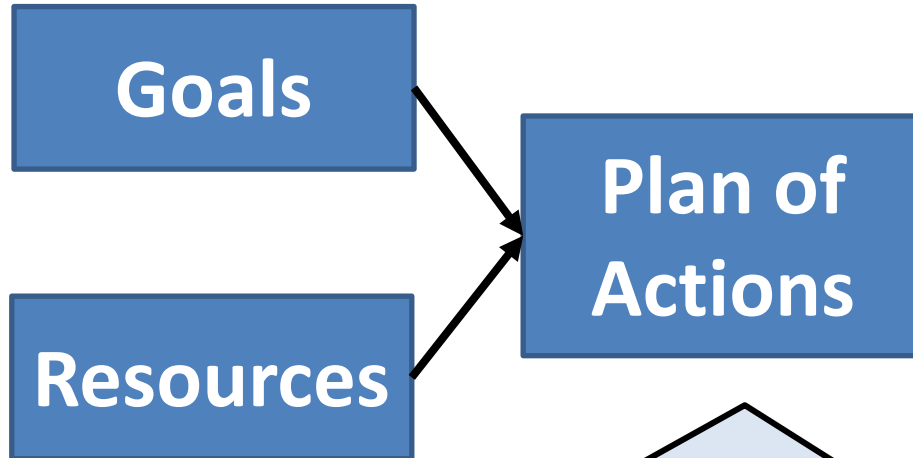
assets

**All Resources made available to Managers**

- ***From the Financial Statements***
  - *Machinery, patents, brands, money etc.*
- ***Not included in the Financial Statements***
  - *Employees, Competencies, Data, Network etc.*



## *The Plan & Control Cycle (3)*

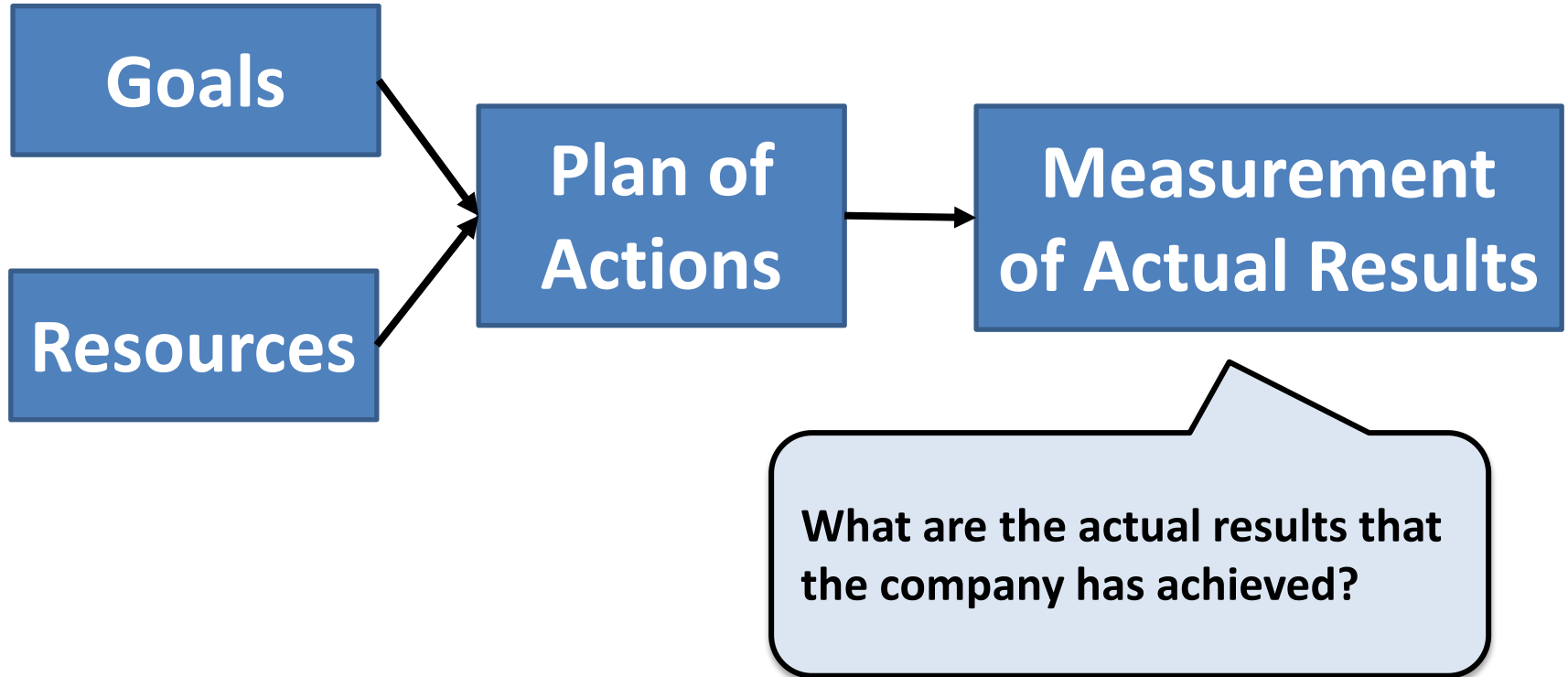


different dept strategy, in the same direction  
harmonized

**What the different Business Units / Organizational Units of the enterprise should do in the next 12 months to meet the expected Goals against the Recourses that will be made available?**



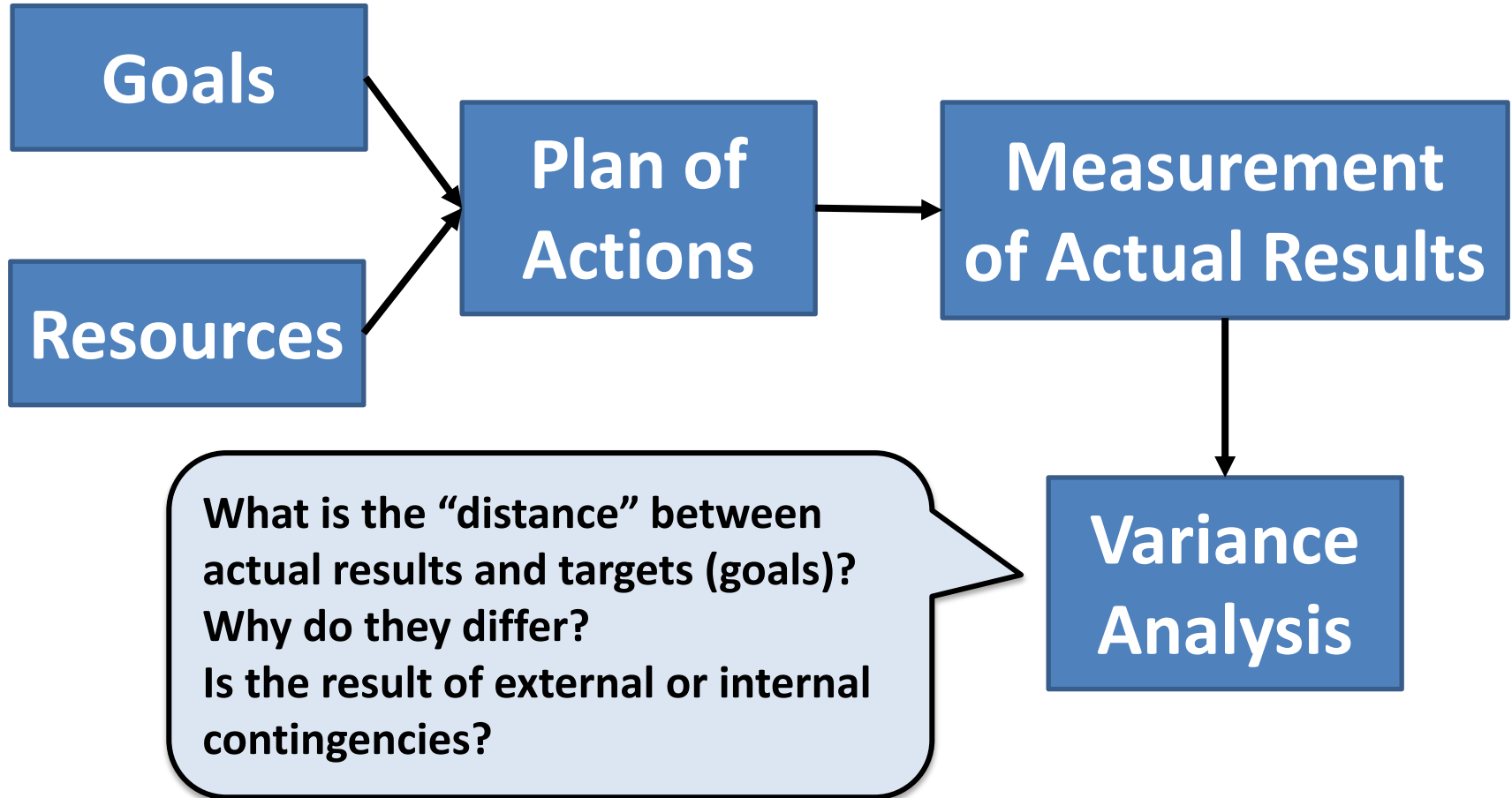
## *The Plan & Control Cycle (4)*



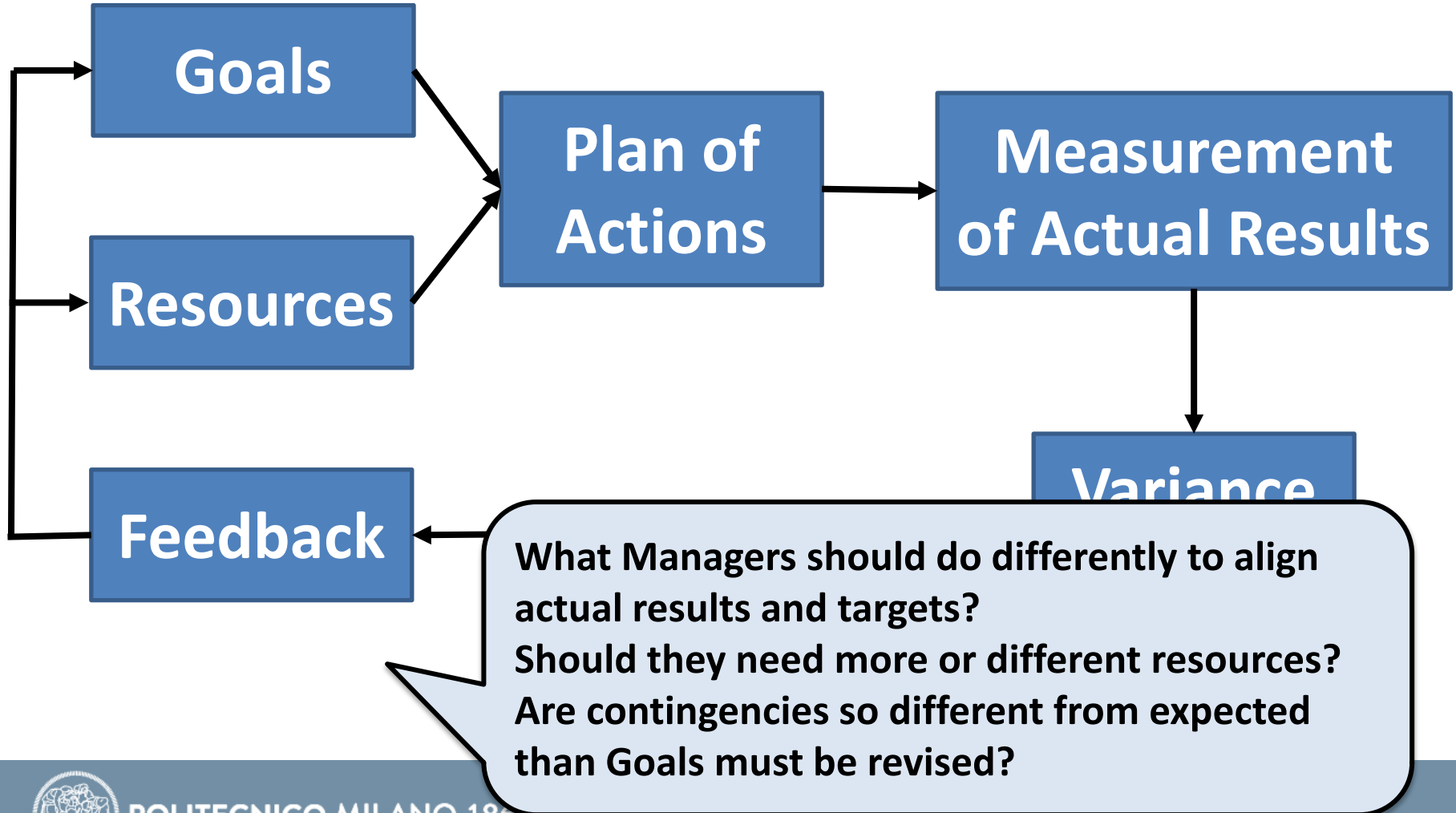


# *The Plan & Control Cycle (5)*

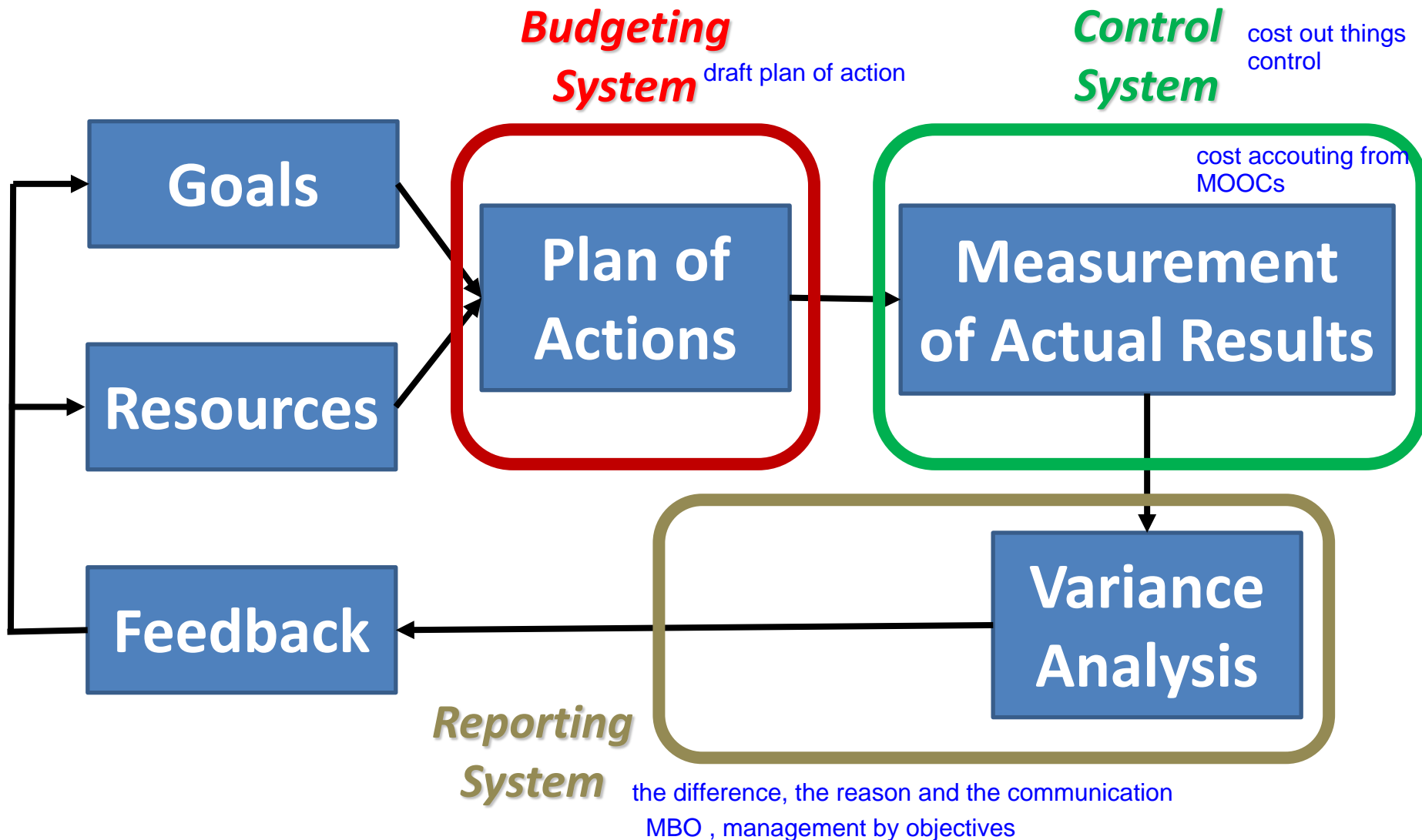
regulating the system.



## *The Plan & Control Cycle (6)*

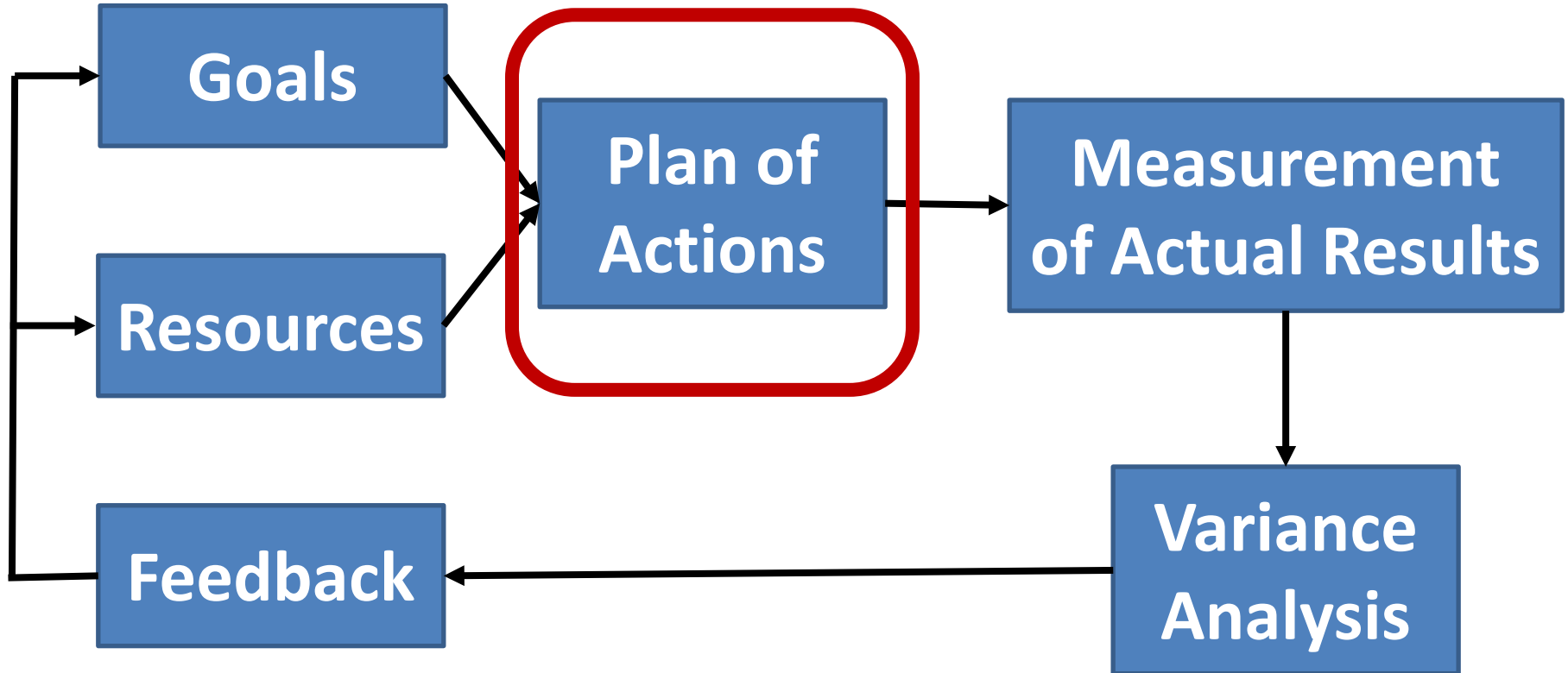


# Management Accounting Toolkit



# Management Accounting Toolkit

## *Budgeting System*



# Why budgeting?



# **Budgeting** the core is plan of action

Budgeting is a set of procedures and activities aimed at assigning to organizational units targets – i.e. reference values for their performance – and resources needed to achieve these results.

A key feature in budgeting is the role of people involved in the process.

- Managers responsible for organizational units
- Other employees working within organizational unit affected by target setting
- Accounting and finance functions supporting the process.

very time consuming



# *Master Budget (1)*

A **budget** is:

- the quantitative expression of a proposed plan of action by management for a specified period and
- an aid to coordinating what needs to be done to implement that plan

collection of actions

The **Master Budget** is a document that:

Expresses management's operating and financial plans for a specified period

Comprises a set of budgeted financial statements



# Master Budget (2)

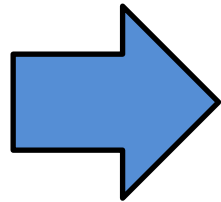
Budgets	Content	Check	Final output
<b>Operating budgets</b> <i>IS by function</i>	They define the typical management of a business as they define the sales, the revenues, the economic flows of raw materials, labour, services etc.	<b>ECONOMIC equilibrium</b> Revenues vs Operating Costs <i>product and period</i>	Budgeted EBIT
<b>Capital Expenditure (CAPEX) budgets</b>	They define the use of financial resources (cash outflows) to sustain the growth strategy – i.e., planned instalments for the purchase of assets	<b>TECHNICAL equilibrium</b> Available vs Needed Capacity	Budgeted CAPEX <i>New Assets</i>
<b>Financial budgets</b>	They define the impact of operating and investment plans on cash inflows and cash outflows	<b>CASH equilibrium</b> Cash Inflows vs Cash Outflows	Budgeted Cash Flow Statement

These documents are then used to prepare:

- Budgeted Income Statement
- Budgeted Balance Sheet
- Budgeted Cash Flow Statement



## Data from Italy



Techniques	Usage	
	# firms	% firms
Budget	81	96,4%
Traditional financial ratios	72	85,7%
Benchmarking	51	60,7%
DCF	40	47,6%
Functional costing	39	46,4%
Balanced Scorecard	33	39,3%
PC	30	35,7%
JOB/JOC	29	34,5%
EVA	28	33,3%
Quality cost	26	31,0%
Environmental cost	25	29,8%
OC	23	27,4%
ABC/ABM	22	26,2%
Throughput Accounting	8	9,5%
JIT	7	8,3%





# ***Case study about budgeting***



# Target Setting

The Chief Executive Officer (CEO) negotiates the targets in terms of financial ratios (e.g., ROE, NPM etc.) with the shareholders

The Chief Financial Officer (CFO) shares these goals with all Managers and opens the budgeting process that will identify that plan of actions that will allow the whole company to meet the expected targets

## **AFC Case Study:**

*ROS (Return On Sales) 2024 > 15%*



The Chief Financial Officer (CFO) invites:

- the **Marketing Manager** (who oversees price setting), and
- the **Sales Manager** (who oversees sales)

to agree the expected quantities that will be sold for every product-line at a certain price, every month, in the various geographical markets, through the different channels (retails vs internet)

## AFC Case Study:

*Budgeted Revenues = 70€/unit \* 1,000 units = 70,000 €*



# Budget of Production (1)

The Chief Financial Officer (CFO) invites:

- the **Logistics Manager** (who oversees the level of inventories of finished goods and the service level agreements (SLAs) with the distributors/final customers)

to agree the expected inventories to meet the expected SLAs

## AFC Case Study:

*Budgeted Production (units) =*

*+ Budgeted Sales*

*+ Target ending inventories of finished goods*

*- Beginning inventories of finished goods*

*= 1,000 units + (75 units + 50 units) – 75 units = 1,050 units*      only in unit



# Budget of Production (2)

The Chief Financial Officer (CFO) invites:

- the **Operations Manager** (who oversees the production of finished goods)

to verify that the budget of production defined so far will be feasible considering the resources (materials, labour hours, machine hours) that will be made available

## AFC Case Study:

*The only constrain is about machine hours*

*Capacity available = 3,000 h – 150 h = 2,850 h*

*Capacity needed = 1,050 units \* 3 h/unit = 3,150 h*

*→ The budget of production is NOT feasible... 300 h will miss!!!*

First Stop

امکان نداره بگن فیزیبل نیست! تاب لاین مهمه -> focus on Revenue top line =>  
بقیه پلن ها رو ادجاست میکنن => focus on capacity available bottom line =>



# Budget of Production (3a)

The **Operations Manager** must evaluate different alternatives to make the budget of production feasible...

## AFC Case Study:

Some alternatives (to be evaluated against the information available)

- ✓ *Increase machine hours (new assets → CAPEX)*
- ✓ *Reduce sales by increasing the price per unit*
- ✓ *Reduce the level of target ending inventories of finished goods*
- ✓ *Reduce the number of hours for planned maintenance*
- ✓ *Reduce the machine hours needed for each unit*
- ✓ *Search for a third-party supplier*
- ✓ *...*



# Budget of Production (3b)

The **Operations Manager** must evaluate different alternatives to make the budget of production feasible...

## AFC Case Study:

Some alternatives (to be evaluated against the information available)

- ✓ ~~Increase machine hours (new assets → CAPEX)~~ not possible
- ✓ ~~Reduce sales by increasing the price per unit~~
- ✓ ~~Reduce the level of target ending inventories of finished goods~~
- ✓ ~~Reduce the number of hours for planned maintenance~~
- ✓ ~~Reduce the machine hours needed for each unit~~
- ✓ *Search for a third-party supplier*

*SPU = 70€/unit > purchasing cost = 45€/unit*





## ***Budget of Production (4)***

Now that the **Operations Manager** has identified how to make feasible the budget of production, she confirms the production-mix to the Chief Financial Officer

### **AFC Case Study:**

Budgeted Production Mix = Units MAKE + Units BUY

Units MAKE =  $2,850h / 3h/unit = 950$  units

Units BUY =  $1,050 \text{ units} - 950 \text{ units} = 100$  units

**Budgeted Production Mix = 950 units MAKE + 100 units BUY**



# ***Budget of Cost of Goods Sold (1)***

The **Chief Financial Officer** supported by the plant controllers, who know the bills of materials and the production cycles, calculate the expected full product cost of every product-line

## **AFC Case Study:**

*The company will produce 950 units MAKE*

*Full product cost =  
cost of direct materials + cost of direct labour + plant Overhead*

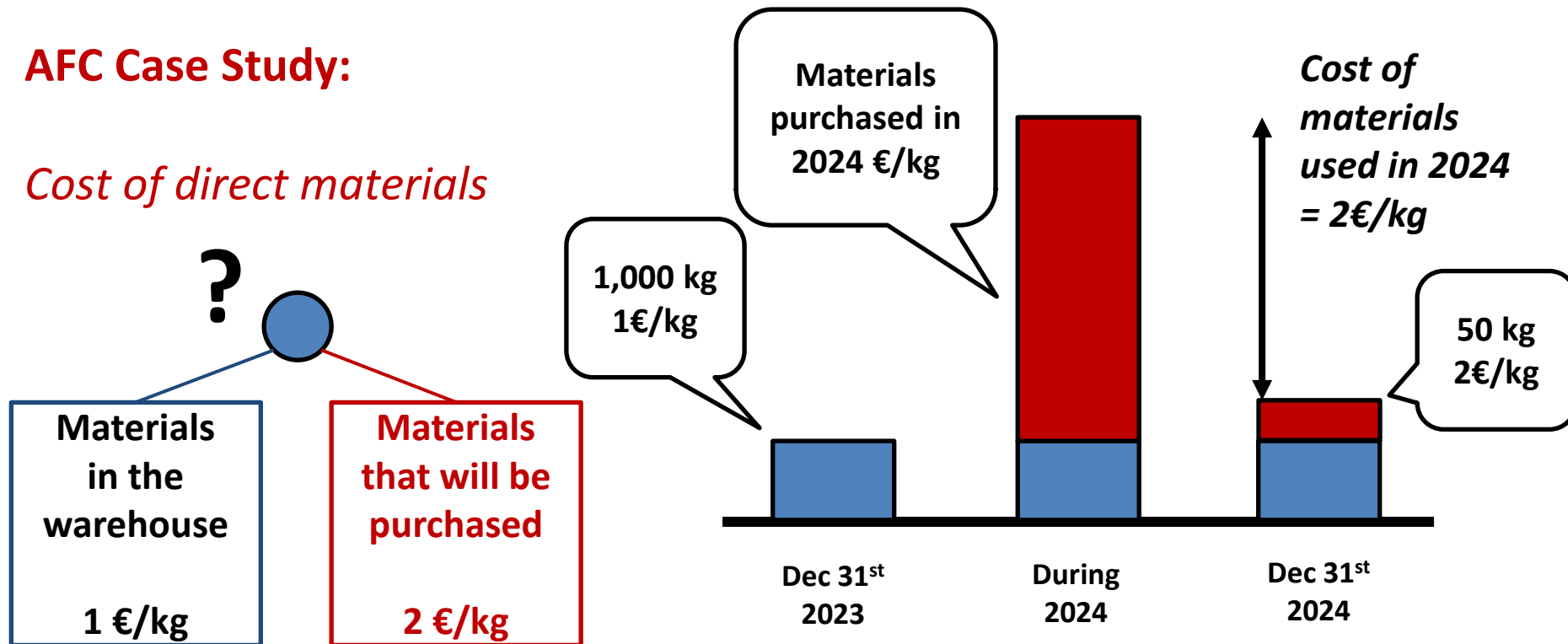


# Budget of Cost of Goods Sold (2a)

The **Chief Financial Officer** supported by the plant controllers, who know the bills of materials and the production cycles, calculate the expected full product cost of every product-line

## AFC Case Study:

*Cost of direct materials*



# Budget of Cost of Goods Sold (2b)

## AFC Case Study:

*Full product cost =*

*cost of direct materials + cost of direct labour + plant Overhead*

+ Cost of direct materials = 950 units \* 6 kg/unit \* 2 €/kg = 11,400€

+ Cost of direct labour = 950 units \* 2 h/unit \* 8 €/h = 15,200€

+ (plant) variable Overhead = 2,850 h \* 1.5 €/h = 4,275€

+ (plant) fixed Overhead = 3,000€ + 2,000€ + 605€ = 5,605€

-----  
Budgeted Cost for MAKE units = 36,480€

→ Budgeted full product cost per unit = 36,480 / 950 = 38.40 €/unit

Cost (MAKE) = 38.40 €/unit < Cost (BUY) = 45€/unit



# ***Budget of Cost of Goods Sold (3a)***

The **Chief Financial Officer** supported by the plant controllers, who know the bills of materials and the production cycles, calculate the expected full product cost of every product-line

## **AFC Case Study**

To calculate the **Budget of Cost of Goods Sold** the sales-mix must be pointed-out

Sales-mix = 1,000 units = 900 units MAKE + 100 units BUY

What MAKE units will be sold?

- Those that are already in the warehouse (75 units, 40 €/unit)
- Those that will be produced in 2023 (950 units, 38.40 €/unit)

45

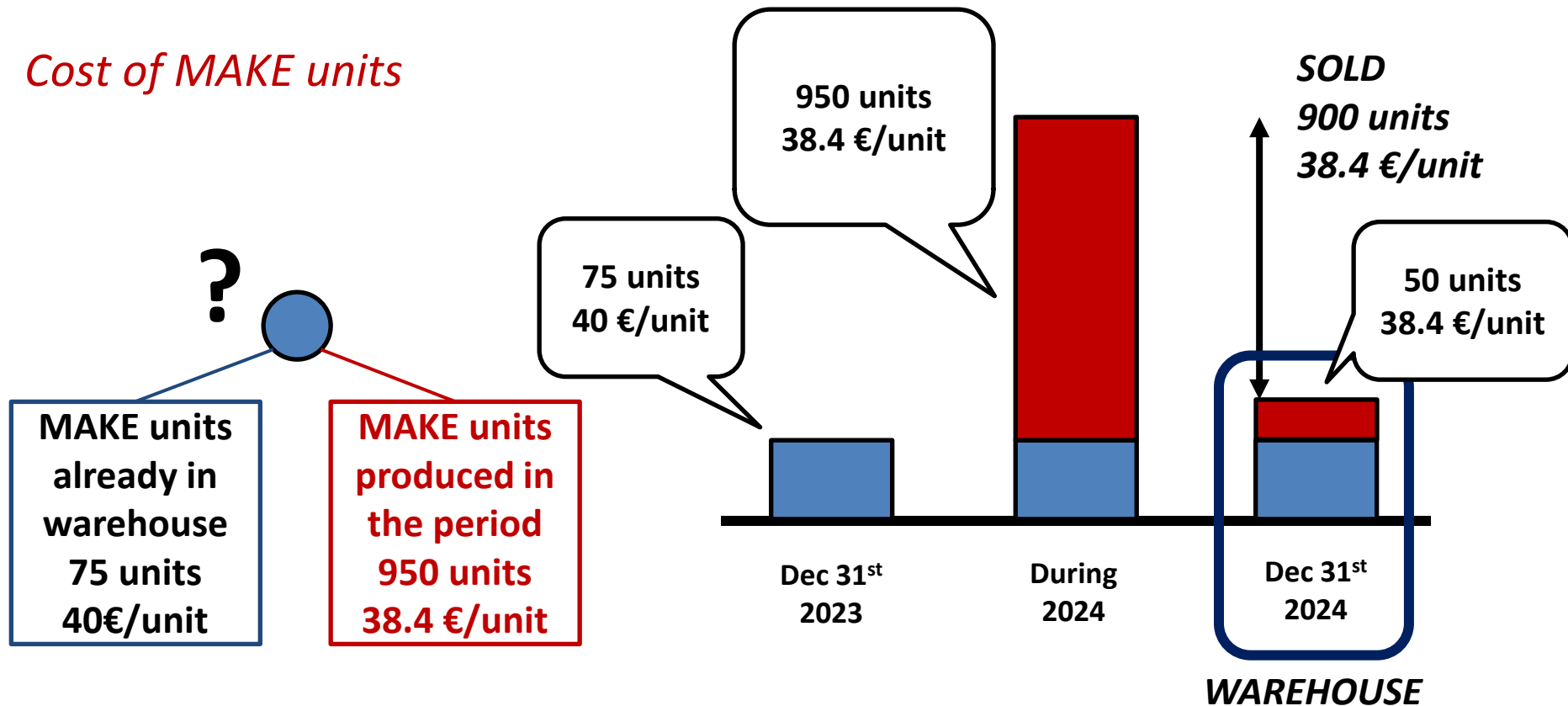
→ The company uses a LIFO approach



# Budget of Cost of Goods Sold (3b)

## AFC Case Study:

### Cost of MAKE units



## ***Budget of Cost of Goods Sold (3)***

The **Chief Financial Officer** supported by the plant controllers, who know the bills of materials and the production cycles, calculate the expected full product cost of every product-line

### **AFC Case Study**

To calculate the **Budget of Cost of Goods Sold** the sales-mix must be pointed-out

Sales-mix = 1,000 units = 900 units MAKE **NEW** + 100 units BUY

Budget of Cost of Goods Sold

= 900 units \* 38.40 €/unit + 100 units \* 45 €/unit = 39,060 €



# Budgeted Gross Margin

The **Chief Financial Officer** knowing the budgeted revenues and the budgeted cost of goods sold can budget the gross margin

## AFC Case Study

+	Budget of Revenues	+	70,000€
-	Budget of Cost of Goods Sold	-	39,060€ <small>operation cost</small>
<hr/>			
=	<b>Budgeted Gross Margin</b>	=	<b>30,940€</b>

Period cost should be added

**The next step is to budget period costs**





# ***Budget of Period Costs (1)***

The **Chief Financial Officer** involves the Managers of the other Functions to budget the period costs:

- Sales & Marketing
- Administrative & General R&D inside

There are two approaches (both with pros and cons):

- **Incremental Approach**
- **Zero-based Budget (ZBB)**



# *Incremental Approach*

The budgeted period costs of year (t) are calculated on the costs incurred the previous year (t-1)

$$\text{Budgeted Period Costs (t)} = \text{Actual Period Cost (t-1)} * (1+\alpha)$$

$\alpha$  is a coefficient that takes into account

- Inflation
- The expected growth of the company

PROS : low cost of implementation

CONS : amplifications of errors (una tantum expenses)



# Zero-Based Budget (ZBB)

The Budgeted Period Costs are **redefined** every year

Each Manager has to:

- Define the **minimum set** of resources required for running the Unit
- Propose additional “**packages**” of initiatives

PROS : the method is theoretically more precise

CONS : it requires high costs and time for implementation

*Typically, companies run the ZBB only every 3<sup>or 5</sup> years, accepting the errors of the incremental approach in the meanwhile*

*to clean the inflation and changes ...*



## ***Budget of Period Costs (2)***

The **Chief Financial Officer** involves the Managers of the other Functions to budget the period costs:

Sales & Marketing

Administrative & General

SMAG => Period Cost

### **AFC Case Study**

Budgeted Period Costs (Sales) = 4,800€ + 2% \* 70,000 €  
& outbound Logistic

Budgeted Period Costs (Marketing) = 4,300€

Budgeted Period Costs (Administration) = 5,000€ + 2,000€

Budgeted Period Costs (General) = 5,000€

→ Budget of Period Costs = 22,500€



# Budget of EBIT

The **Chief Financial Officer** knowing the budgeted of period costs can budget the operating margin (EBIT)

what is missing:  
other operating income. (that are not related to the mission. university selling merchandising)  
when it's large, the business model is not related

## AFC Case Study

+ Budget of Revenues	+ 70,000€	
- Budget of Cost of Goods Sold	- 39,060€	D&A is spread here and in period cost.
= Budgeted Gross Margin	= 30,940€	D&A visible in income statement by nature.
- Budget of Period Costs	- 22,500€	we have EBITDA (proxy cash flow)
= Budgeted EBIT	= 8,440€	discuss with board. changing scope, budget, ... brainstorm to fix it!

$$ROS = \frac{EBIT}{REVENUES} = \frac{8,440}{70,000} \cong 12\% < 15\% !!!$$

short term it's hard to optimize cost of good solds and modifying the sales and prices. so we have to change the period cost.  
if the 12 was 4 so you have to change completely!! it's high

