

Course Outline

I. Financial Accounting

II. Tax Basics

III. Management Accounting

1. Basic concepts
 - what is management accounting
 - how do costs behave
 - break-even
 - operating leverage
2. Product costing
3. Decision making
4. Budgeting

1. Basic Concepts

Managerial versus financial accounting

	Financial accounting	Managerial accounting
Users	Outside parties (investors, banks, suppliers, government agencies)	Inside parties (managers)
Reports	Summarized (entity as a whole)	Detailed (parts of the entity, products, departments, territories, etc.)
Constraints	Generally Accepted Accounting Principles (GAAP)	None, although cost/benefit
Time focus / span	- Past (actual 20X0 – actual 20X1) - 1 year (sometimes ½, ¼)	- Future (budget 20X2 – actual 20X1) - Varying, from hourly to 10 year

1. Basic Concepts

Budget & Performance Report

	Budgeted	Actual	Variance
revenues	25000	19000	6000 U
expenses	20000	15000	5000 F
net income	5000	4000	1000 U

F= Favorable
U= Unfavorable

Planning & Control

In order to take **decisions** and realising a
management goal = *management proces*

1. Basic Concepts

Cost Driver

What is a **cost driver** ?

Any (output) measure that causes costs (causes the use of costly resources)

- Volume-related
- Non-volume related



1. Basic Concepts

Cost Driver

Examples	
<u><i>Cost:</i></u> Rent	<u><i>Cost driver:</i></u> Surface (#m2) - Location
Wages	# hours - # employees - Experience - Education
Transport	Distance (# km) - Weight (#kg) - Fragility item

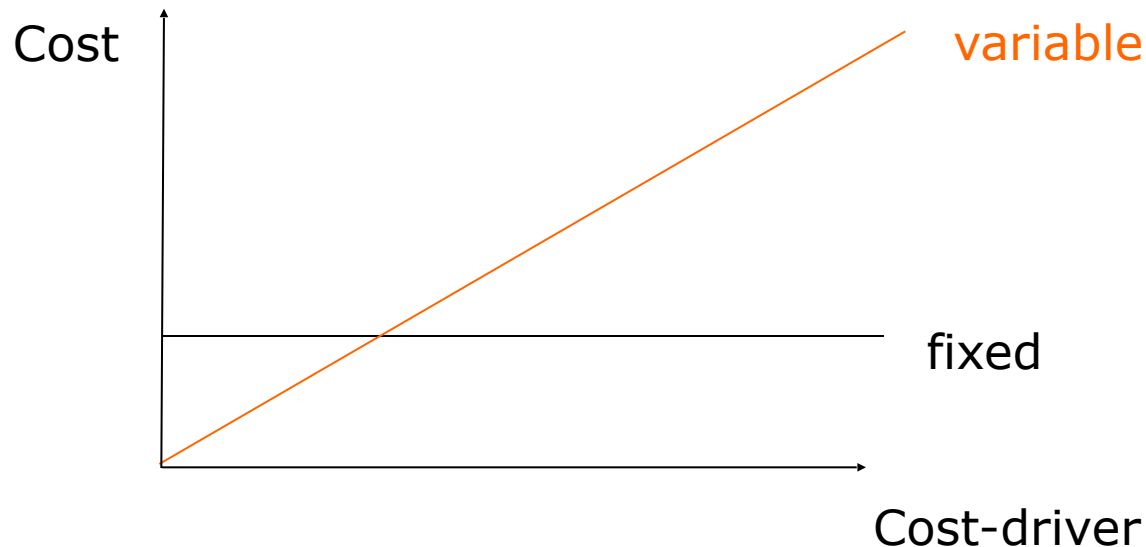
In manufacturing companies the volume output
(# items produced) is a common cost driver

1. Basic Concepts

Fixed vs. variable costs



A *variable cost* changes in direct proportion to changes in the cost-driver level.

A *fixed cost* is not immediately affected by changes in the cost-driver.



1. Basic Concepts

Fixed vs. variable costs

If amount of goods sold increases	Total	Per unit
Fixed costs	Fixed	
Variable costs		Fixed

1. Basic Concepts

Step costs

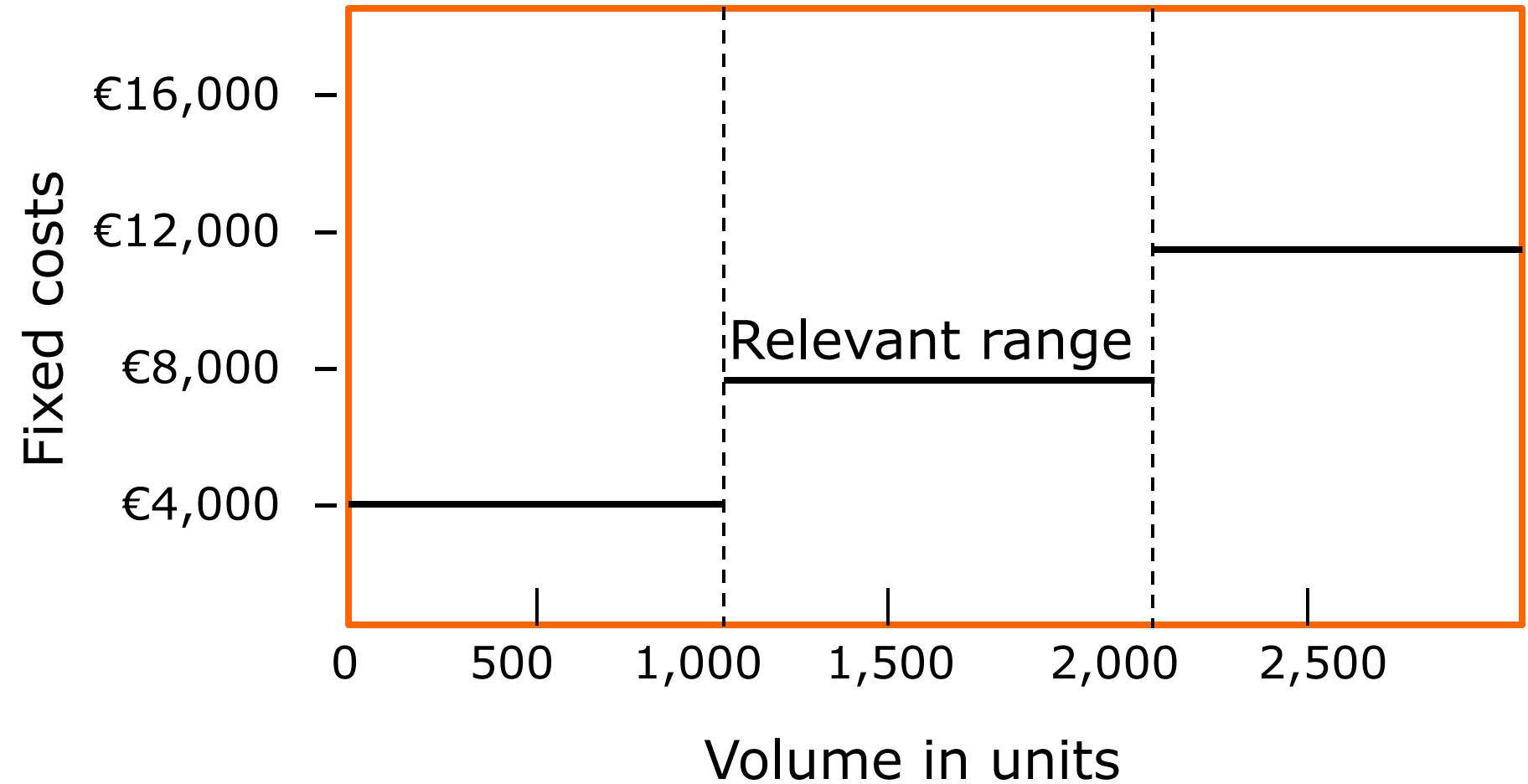
Fixed costs are only fixed within reasonable limits of activity levels

Relevant range = is the limit of cost-driver activity within which a specific relationship between costs and the cost driver is valid.

Even within the relevant range, a fixed cost remains fixed only over a given *period of time*.

1. Basic Concepts

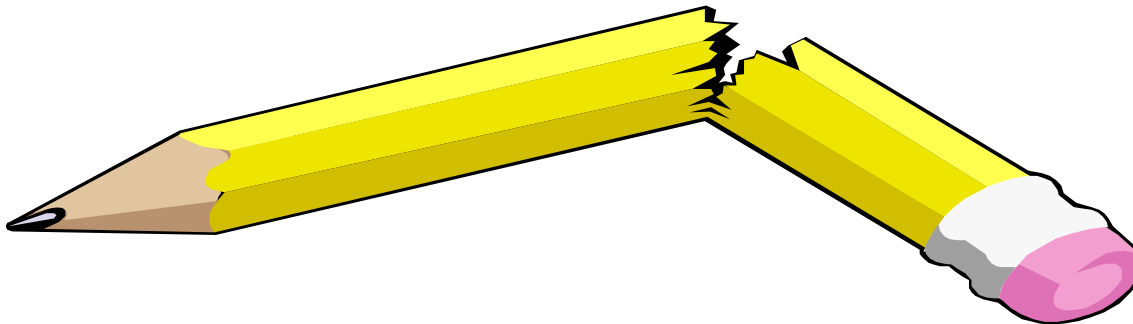
Step costs



1. Basic Concepts

Break-Even

The **break-even point** is the level of sales at which revenue equals expenses and net income is zero.



1. Basic Concepts

Break-Even Point: Equation Technique

$$\text{Net income} = 0$$

$$\begin{aligned}\text{Total revenue (TRev)} &= \text{Total Cost} \\ \text{TRev} &= \text{Variable Cost (VarC)} + \text{Fixed Cost (FixedC)} \\ \text{TRev} &= \text{price}(p) \times \text{quantity}(q) \\ pxq &= (\text{VarC}/q) \times q + \text{FixedC} \\ \text{Contribution margin} &= p - \text{VarC}/q \\ q &= \text{FixedC} / (p - \text{VarC}/q)\end{aligned}$$

1. Basic Concepts

Break-Even Point: Equation Technique

Example

	<u>Per Unit</u>	<u>Percentage</u>
Sales price	€5	100%
Variable costs	<u>4</u>	<u>80%</u>
Contribution margin	€1	20%

<u>Total Fixed Cost =</u>	€ 8,000
Rent	€ 2,000
Wages	€ 5,500
Other	€ 500

$$\begin{aligned}TR - \text{VarC} - \text{FixedC} &= 0 \\ (\text{€}5 - \text{€}4) \times q - \text{€}8,000 &= 0 \\ \text{€}1q &= \text{€}8,000 \\ q &= \text{€}8,000 \div \text{€}1 \\ q &= 8,000 \text{ units}\end{aligned}$$

$$\begin{aligned}q &= 8,000 \text{ units} \\ p &= \text{€}5 \\ \text{Sales} &= p \times q \\ \text{Sales} &= \text{€}40,000\end{aligned}$$

1. Basic Concepts

Operating Leverage

Operating Leverage = Use of **assets** having **fixed** operating costs such that a change in **sales** revenue is magnified into a relatively large change in **EBIT** (a firm's ratio of fixed to variable costs).

In high leveraged companies, small changes in sales volume result in large changes in net income. (example: Google)

Companies with less leverage are not affected as much by changes in sales volume. (example: consulting firm)

!!! Leverage increases the risk



1. Basic Concepts

Operating Leverage - Example

	Company A		Company B	
Sales	2000	2200	2000	2200
Fixed costs	1700	1700	200	200
Variable costs	200	220	1700	1870
EBIT	100	280	100	130



1. Basic Concepts

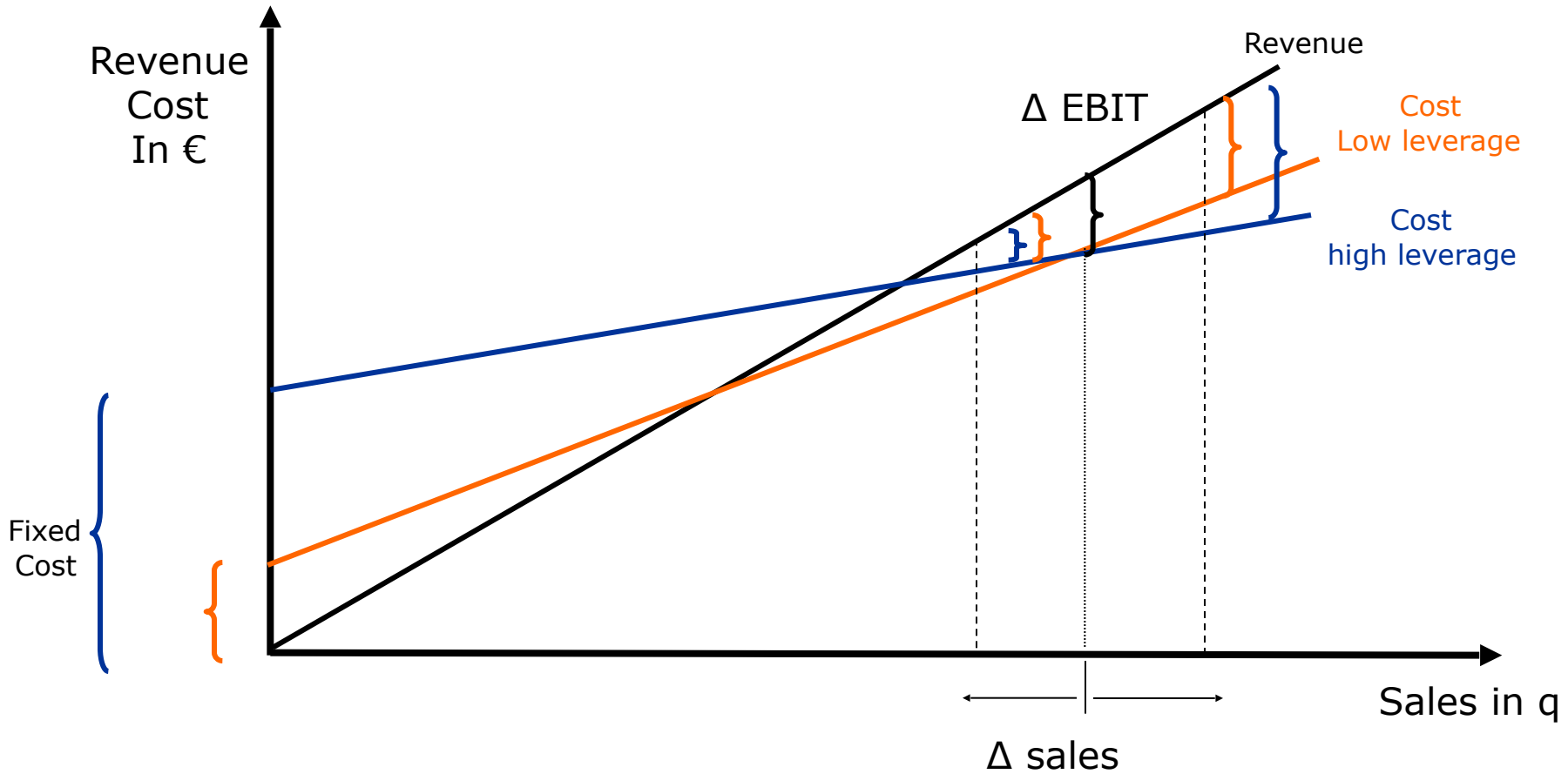
Operating Leverage - Example

	Company A		Company B	
Sales	1000	1200	1000	1200
Fixed costs	1700	1700	200	200
Variable costs	100	120	850	1020
EBIT	-800	-620	-50	-20



1. Basic Concepts

Operating Leverage - Graph



2. Product Costing

Direct versus Indirect

Direct costs can be identified specifically and exclusively with a given cost object.

Indirect costs or overhead cannot be identified specifically and exclusively with a given cost object (need of an allocation base).

Example: cost object = product = desk

Material (wood) = direct
Salary worker = direct

Salary supervisor = indirect
Electricity and heating of assembly room = indirect



2. Product Costing

Direct versus Indirect

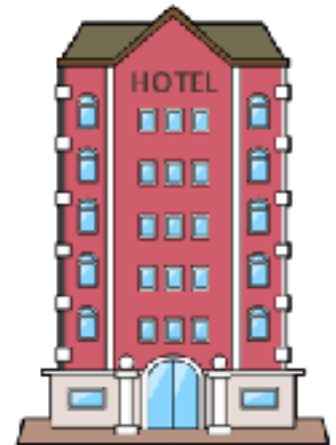
WATCH OUT!

Example: Salary of the supervisor of all housekeeping personnel (hotel)
Is this a direct or an indirect cost?

DEPENDS UPON COST OBJECT!

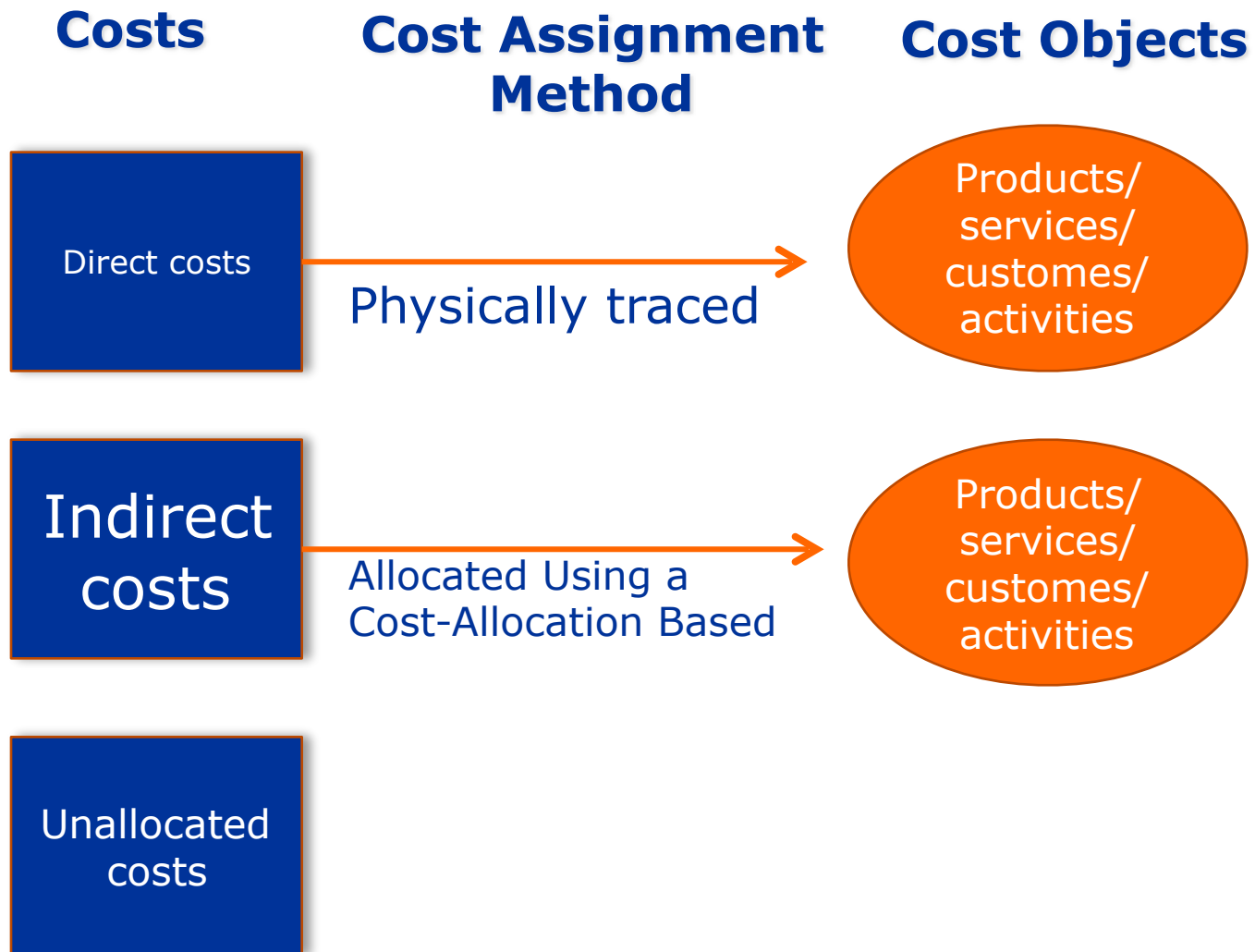
Direct: if cost object = department 'housekeeping'

Indirect: if cost object = room



2. Product Costing

Methods of Cost Allocation



2. Product Costing

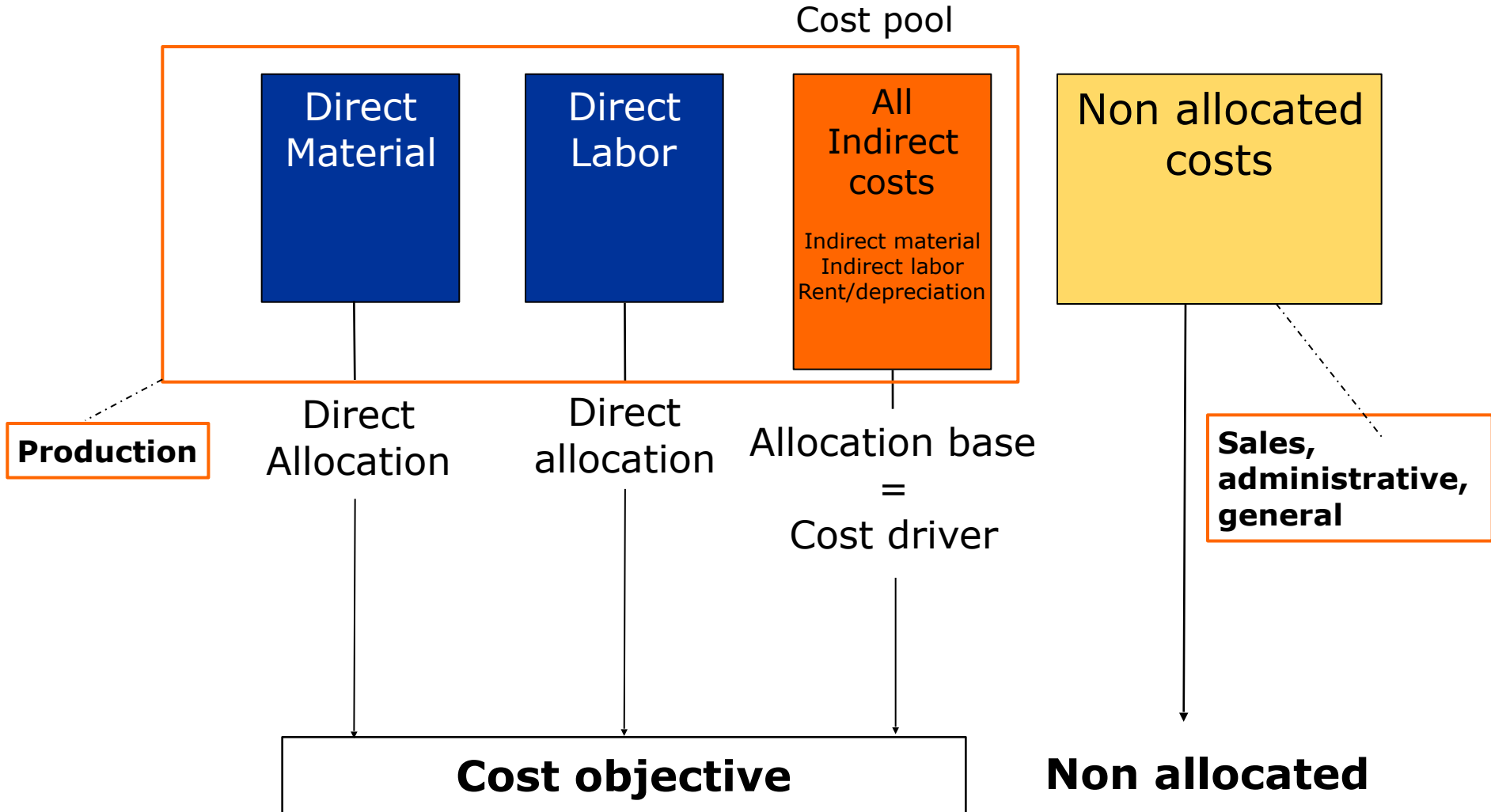
Traditional approach of cost allocation to final cost objects

Accounting systems that do not accumulate or report costs of individual activities or processes. They often use a single cost pool for all indirect costs with a labor-based cost-allocation base.



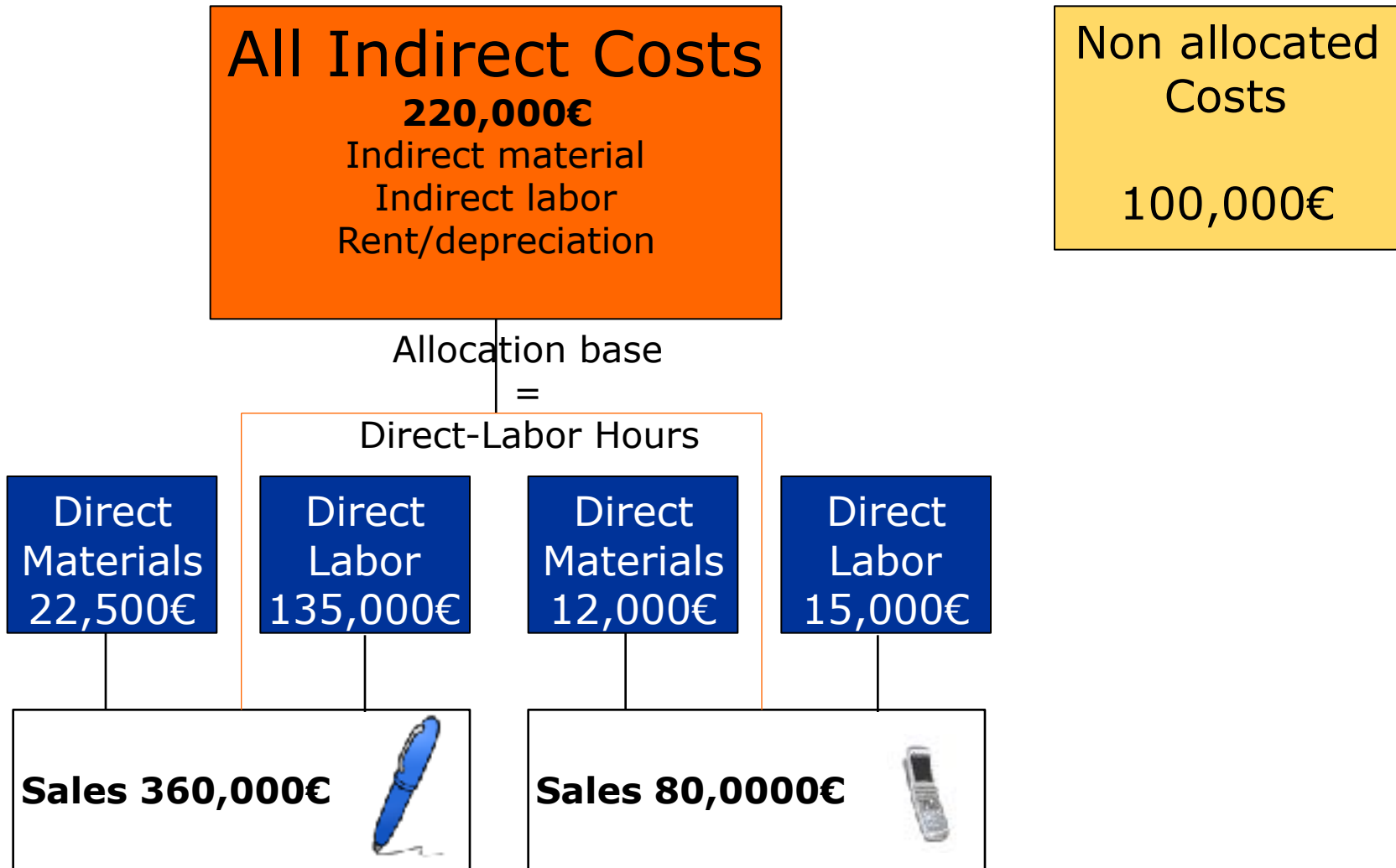
2. Product Costing

Traditional approach of cost allocation to final cost objects



2. Product Costing

Traditional approach - Example



2. Product Costing

Traditional approach - Example

Statement of Operating Income		Contribution to Corporate Costs and Profit	
		Pen Casings	Cell Phone Casings
Sales	440,000€	360,000€	80,000€
COGS:	404,500€	355,500€	49,000€
Direct Material	34,500€	22,500€	12,000€
Direct Labor	150,000€	135,000€	15,000€
Indirect Production	220,000€	$\frac{198,000€}{= 220,000 \times (135,000/150,000)}$	$\frac{22,000€}{= 220,000 \times (15,000/150,000)}$
Gross Profit	35,500€	4,500€	31,000€
Unallocated expenses	100,000€		
Operating Loss	(64,500€)		
Gross Profit Margin	8,07%	1,25%	38,75%

2. Product Costing

Traditional approach of cost allocation to final cost objects

- Allocates overhead using a single predetermined rate.
 - Assumption was satisfactory when direct labor was a major portion of total manufacturing costs.
 - A tremendous change in manufacturing and service industries: decrease in amount of direct labor usage, significant increase in total overhead costs.
- Inappropriate to use plant-wide predetermined overhead rates when a lack of correlation exists.
- Need for a New Approach

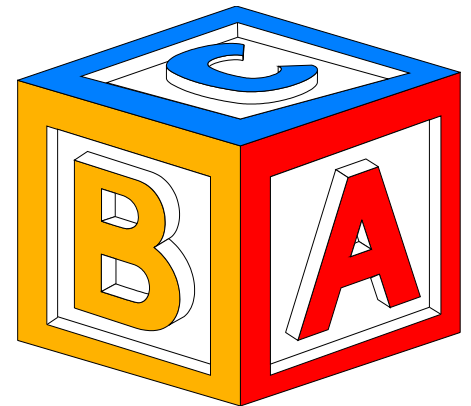


2. Product Costing

Activity-Based Costing

A system that first accumulates **indirect resource costs** for each of the activities of the area being costed, and then assigns the costs of each activity to the products, services, or other cost objects that require that activity.

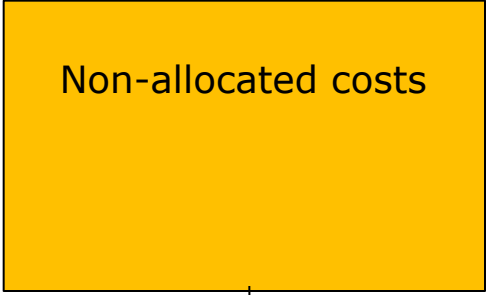
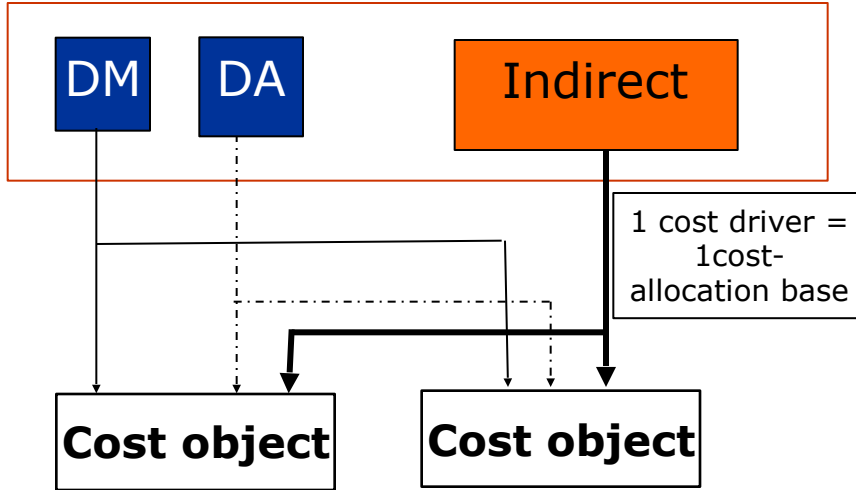
(multiple allocation bases)



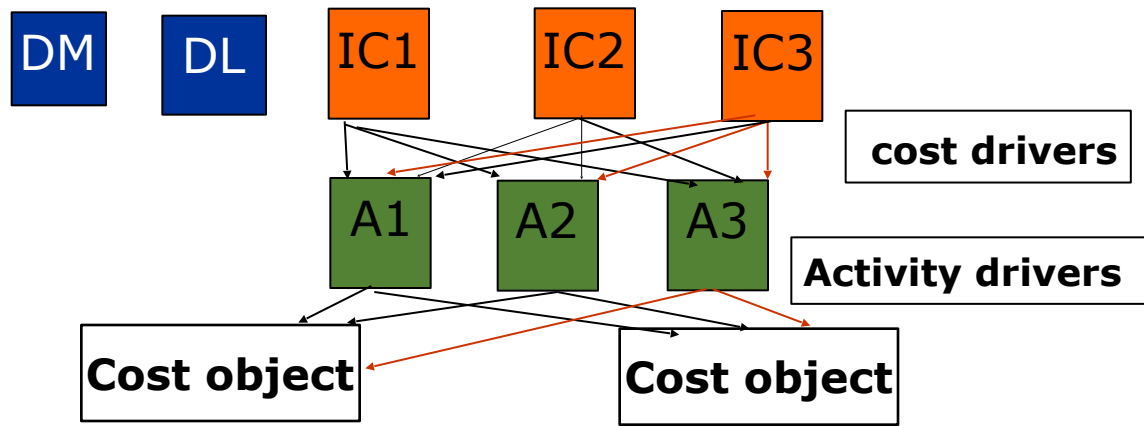
2. Product Costing

Traditional Approach vs. Activity-Based Costing

TRADITIONAL



ACTIVITY BASED



Non allocated

2. Product Costing

Traditional Approach vs. Activity-Based Costing (=ABC)

Traditional

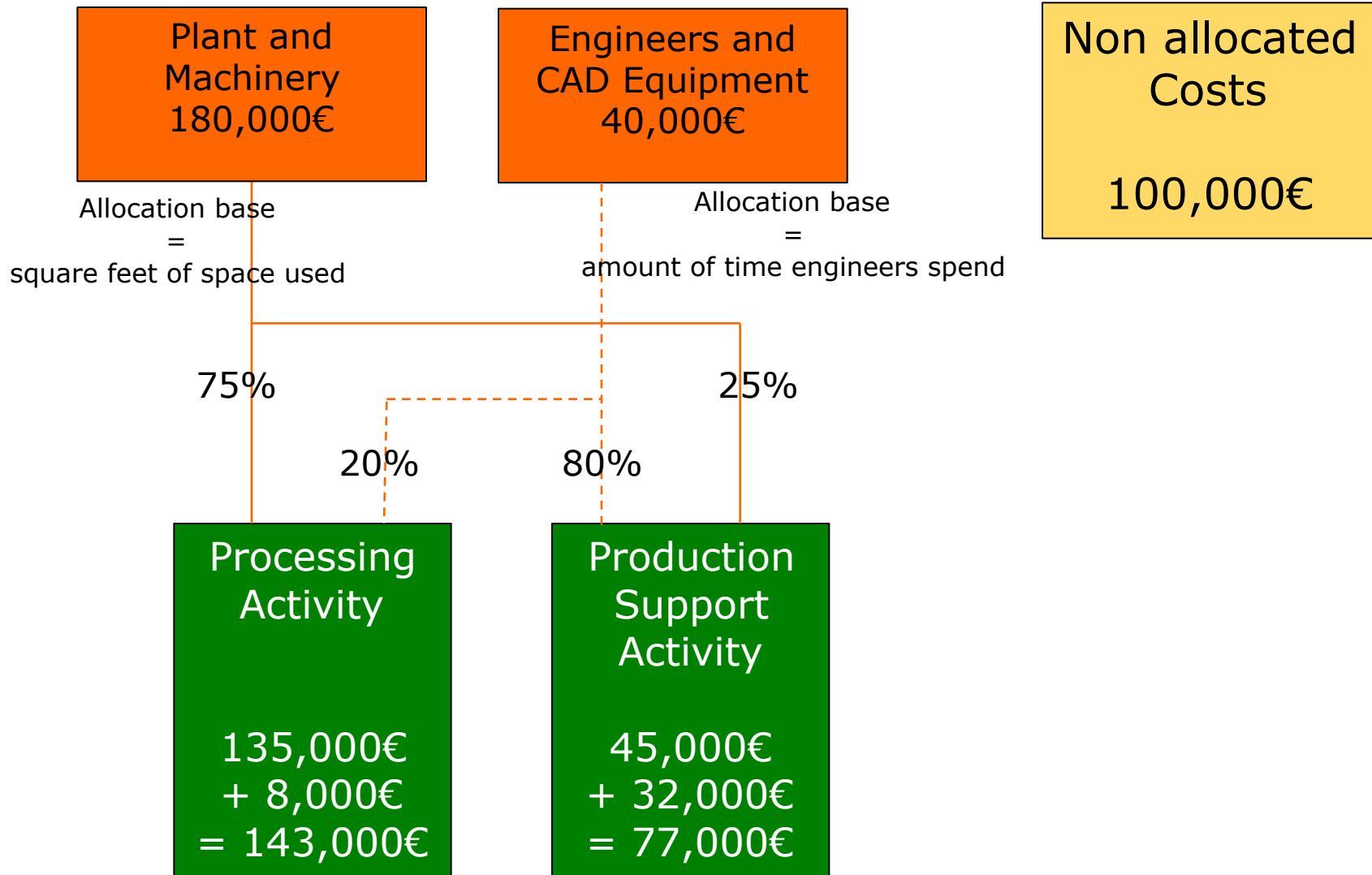
- ✓ Focus on *production* department
- ✓ *Indirect costs* are pooled (one group)
- ✓ *Allocation base usually volume-related cost drivers*: direct Material, direct labor(hours), Machine-hours

Activity-Based Costing

- ✓ *All departments of the value chain are considered* (Research & development, sales,)
- ✓ *Indirect costs* : multiple cost pools - analyzed and detailed
- ✓ Focus on *activities (activity driver)*

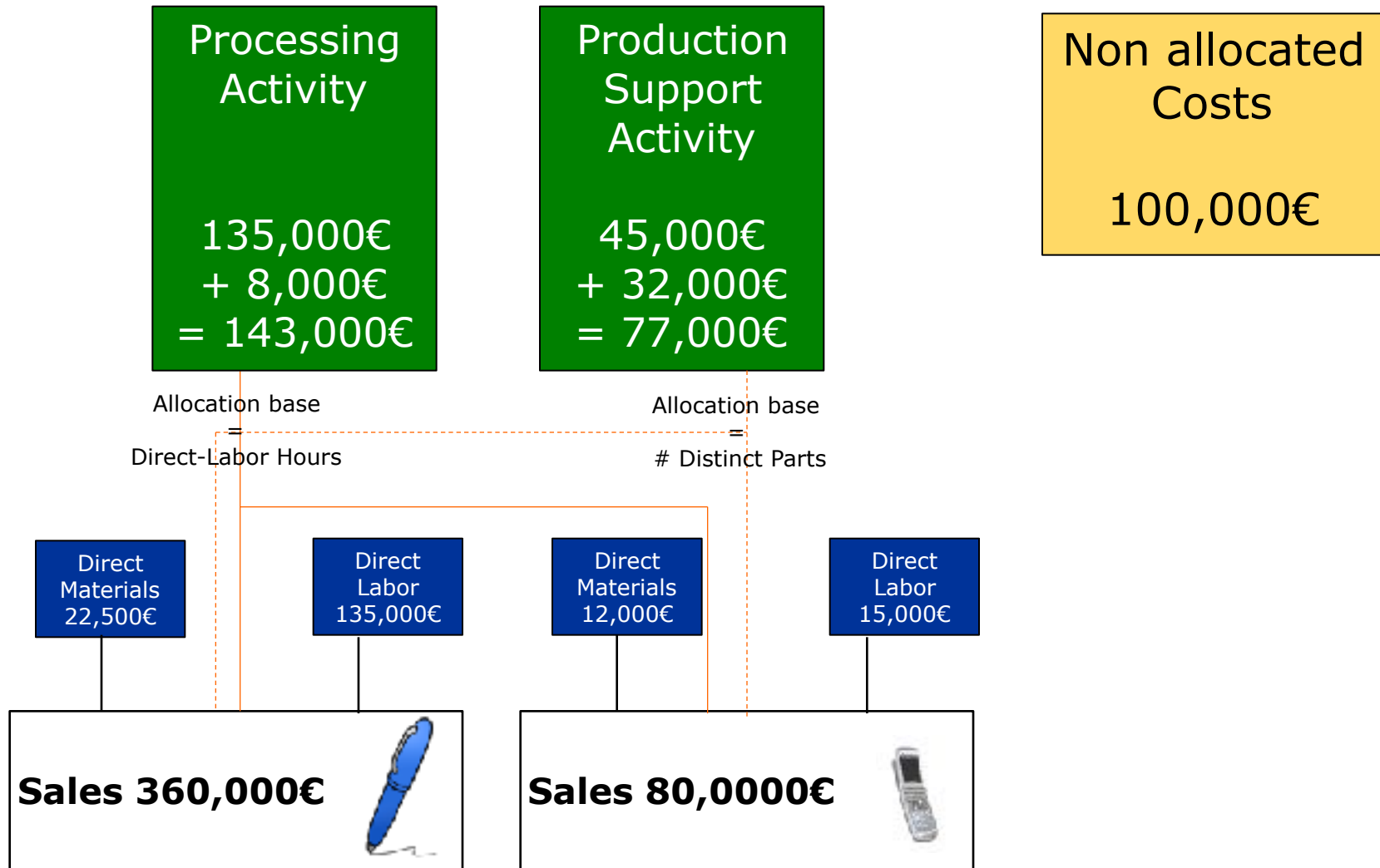
2. Product Costing

ABC- Example



2. Product Costing

ABC- Example



2. Product Costing

ABC - Example

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Direct Material	34,500€	22,500€	12,000€
Direct Labor	150,000€	135,000€	15,000€
Process Activity	143,000€	128,700 = 143,000 x (135,000/150,000)	14,300 = 143,000 x (15,000/150,000)
Production-support activity	77,000€	15,400 = 77,000 x (5/25)	61,600 = 77,000 x (20/25)
Gross Profit	35,500€	58,400€	(22,900€)
Unallocated expenses	100,000€		
Operating Loss	(64,500€)		
Gross Profit Margin	8,07%	16,22%	(28,63%)








2. Product Costing

Traditional approach - Example

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2. Product Costing

Traditional Approach vs. Activity-Based Costing Pros and Cons

<u>Traditional</u>	<u>Activity-Based Costing</u>
 Easy implementation and less costly to maintain	 Increased costing accuracy
 Outdated because direct labor hours is often not the best cost driver to use as companies use machines and computers for much of their production	 Better information provided
 Can lead to bad management decisions	 Expensive / resources needed
	 Does not align with GAAP

2. Product Costing

*Traditional Approach vs. Activity-Based Costing:
Which companies need ABC?*

<u>Traditional</u>	<u>Activity-Based Costing</u>
High amount of direct costs	High amount of indirect costs
Unit level activities	Other than unit level activities (e.g. batch-level and product-line activities)
No differences in complexity and volume	Product lines differ in volume and complexity

2. Product Costing

How Factory Overhead is Applied to Products

Ideally, all costs, including overhead, are known when decisions (e.g. pricing of product) must be made. Unfortunately, **actual overhead costs are not always available** when managers need them.

For this reason, ***budgeted overhead rates*** are used to apply overhead to jobs as they are completed. Companies generally prefer to use an annual budgeted factory overhead rate regardless of the month-to-month fluctuations of specific overhead costs.

Normal costing: The use of an annual average overhead rate consistently throughout the year for product costing.

Course Outline

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II. Tax Basics

III. Management Accounting

1. Basic concepts
2. Product costing
3. Decision making
4. Budgeting

4. Budgeting

Advantages of Budgets

- ❑ **Planning**

Budgeting forces managers to think ahead (past + new)

- ❑ **Judging performance**

Budgeting provides an opportunity to reevaluate existing activities and evaluate possible new activities

Budgeting provides benchmarks to evaluate subsequent performance

- ❑ **Communication and coordination**



4. Budgeting

Financial Plan – Cash Budget

The cash budget has the following major sections:

- total cash available before financing
- cash disbursements
- minimum cash balance desired
- financing requirements
- ending cash balance



4. Budgeting

Financial Plan – Cash Budget

Total cash available before financing =
Beginning cash balance + Cash receipts

Cash receipts depend on collections from customers' accounts receivable and cash sales and on other operating income sources.

4. Budgeting

Financial Plan – Cash Budget

- Cash disbursements for purchases depend on the credit terms extended by suppliers and the bill-paying habits of the buyer.
- Payroll depends on wages, salaries, commission terms, and payroll dates.
- Disbursements for some costs and expenses depend on contractual terms for installment payments, mortgage payments, rents, leases, and miscellaneous items.
- Other disbursements include outlays for fixed assets, long-term investments, dividends, and the like.

