Management Accounting – Oral Exam 2025/26

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Question 1: Strategy map and balanced scorecards

A) What are the purposes of a Strategy Map and a Balanced Scorecard?	B) How are a Strategy map and the Balanced Scorecard linked? Illustrate this linkage using the strategy map and the Balance Scorecard from the Delta/Signal case.	C) Why was the Balanced Scorecard introduced in the Delta/Signal case? Discuss the specific challenges it aimed to address and the expected outcomes.
<u>The strategy map</u> **Purpose** The Strategy Map essentially explains how value is created, helps align the firm, and makes the strategy clear and actionable. The map illustrates a bottom-up logic, where investments in learning and growth enable better internal processes, which create customer value and ultimately lead to improved financial performance. 1. **Learning & growth** (aligning intangible assets such as people and systems) 2. **Internal processes** (key processes that creates value, (innovation/operations)) 3. **Customer perspective** (this includes the core value proposition) 4. **Financial perspective** (measures the tangible outcomes from the strategy) **Advantages** • Clarifies and communicates the strategy and the cause-and-effect relationships. • Improves the strategic alignment across the firm. **Disadvantages** • Provides no performance measures, so must be complemented by the BSC. **<u>The balanced scorecard</u>** **Purpose** The Balanced Scorecard translates strategy into measurable KPIs across the same financial and non-financial perspectives as the Strategy Map, helping managers make better decisions, monitor performance and execute strategy in complex environments. **Advantages** • Puts strategy and vision – and not control – at the centre. • Aligns departments and divisions around common objectives. **Disadvantages** • The cause-and-effect relationship between financial and non-financial indicators is questionable: does improved customer satisfaction always yield good financial results? • It does not take into account the actions of competitors.	. **The link between the strategy map and the balanced scorecard** The strategy map defines and visualises the strategy and its cause-and-effect logic across the four perspectives. The Balanced Scorecard builds directly on the strategy map by translating these strategic objectives into measurable KPIs, targets, and initiatives. In short, the strategy map explains what the strategy is and how value is created, while the Balanced Scorecard is used to measure, manage, and execute that strategy. **Illustrating the linkage using our example of the Delta/Signal case** In the Delta/Signal case we chose the luxury segment with a focus on product innovation. Once we made this choice, the strategy map shows how our strategy created value. Our map started in “Learning & Growth”, where we invested in engineering skills and R&D. These investments improved internal processes, such as faster product development, higher product quality, and innovation speed. This supported the customer perspective, where customers valued technological leadership, performance, and premium features, which ultimately lead to financial outcomes like higher margins and revenue growth. The Balanced Scorecard then translated this strategy map into measurable KPIs. For example, our innovation objectives in the map was linked to KPIs such as time-to-market, defect rates, and customer satisfaction, with clear targets and initiatives. In this way, our BSC ensured that day-to-day actions and performance measurement was aligned with the chosen segment and strategy.	**Why the balanced scorecard was introduced in the Delta/Signal case** The Balanced Scorecard was introduced because Delta/Signal lacked a clear strategic focus and execution framework. The firm had followed a strategy of being “all things to all customers”, trying to serve both the luxury and economy segments at the same time, resulting in over 2,000 products, fragmented operations, and weak financial performance. Management needed a tool to clarify strategic priorities and translate strategy into concrete objectives and KPIs, ensuring that investments, initiatives, and day-to-day decisions followed a single, coherent direction. **<u>The specific challenges addressed</u>** 1. **Lack of strategic focus:** Delta/Signal attempted to serve both economy and luxury OEMs, leading to an unclear value proposition and conflicting priorities between cost efficiency and innovation. 2. **Poor strategy execution and coordination:** Departments pursued initiatives such as Kaizen, R&D, and cost reductions independently, causing improvements to be short-lived because efforts were not aligned with a single, long-term strategy. **<u>The expected outcomes (for our BSC)</u>** 1. **Clear strategic focus on luxury product innovation:** Our Balanced Scorecard converted the product innovation strategy into explicit innovation, R&D, and KPIs, ensuring that capital allocation and managerial attention was consistently directed toward technology leadership. 2. **Sustained cultural and operational alignment:** Learning & Growth and Internal Process measures tie training, process improvement, and innovation directly to the strategy, helping Delta/Signal maintain improvements over time instead of losing them after one-off initiatives. **<u>Conclusion</u>** Our Balanced Scorecard addressed Delta/Signal’s lack of focus and execution by aligning the organisation around a clear innovation strategy and translating it into measurable outcomes.

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Question 2: Strategy map and balanced scorecards

A) Explain the purposes and content of a Balanced Scorecard (BSC) and a strategy map (SM). How do they contribute to strategic management and performance measurement?	B) Discuss how a Balanced Scorecard (BSC) can be customised and cascaded within an organisation. Use the Delta/Signal case as an example to illustrate your points.	C) Discuss the relationships among the dimensions of the Balanced Scorecard. Use your strategy map from the Delta/Signal case as an illustration.
<u>The strategy map</u> **Purpose** The Strategy Map essentially explains how value is created, helps align the firm, and makes the strategy clear and actionable. The map illustrates a bottom-up logic, where investments in learning and growth enable better internal processes, which create customer value and ultimately lead to improved financial performance. 1. **Learning & growth** (aligning intangible assets such as people and systems) 2. **Internal processes** (key processes that creates value, (innovation/operations)) 3. **Customer perspective** (this includes the core value proposition) 4. **Financial perspective** (measures the tangible outcomes from the strategy) **Contribution to strategic management and performance measurement** The strategy map contributes to strategic management by clarifying strategic priorities and showing the cause-and-effect relationships behind the strategy. It improves strategic alignment and communication across the organisation. However, it does not measure performance by itself; instead, it provides the strategic logic that performance measurement should be based on. **<u>The balanced scorecard</u>** **Purpose** The Balanced Scorecard translates strategy into measurable KPIs across the same financial and non-financial perspectives as the strategy map, helping managers make better decisions, monitor performance and execute strategy in complex environments. **Contribution to strategic management and performance measurement** The Balanced Scorecard contributes to strategic management by turning strategy into concrete objectives, targets, and initiatives, ensuring that day-to-day actions align with long-term goals. For performance measurement, it combines lagging financial indicators, like profit, with leading non-financial indicators, such as customer satisfaction, allowing managers to track both results and the drivers of future performance.	. **How the Balanced Scorecard can be customised within a firm** The Balanced Scorecard is customised by translating the chosen strategy into strategy-specific objectives and KPIs across the four perspectives. In our Delta/Signal case, strategic ambiguity arose from a "one-size-fits-all" approach with around 2,000 products and no clear value proposition. When management evaluated four alternative strategies, each required different performance drivers. Under our luxury product innovation strategy, the BSC focused on R&D capability development, innovation process effectiveness, and customer perception of technological leadership, rather than generic cost or volume measures, which would have been more fitting to the economy segment. **How the Balanced Scorecard can be cascaded within a firm** Cascading involves translating the corporate Balanced Scorecard into aligned, unit-level scorecards. In Delta/Signal, this was necessary due to a highly decentralised structure. Corporate innovation objectives were converted into controllable measures at R&D, product development, and customer-satisfaction facing units. This encourages accountability and ensures that employees understand how their roles contribute to strategic goals. These non-financial measures acted as leading indicators, aligning local decisions with the firm's overall strategic direction and enabling early corrective action.	**Using the Strategy Map to illustrate the relationships among the Balanced Scorecard dimensions** Investments in "Learning & Growth", such as developing workforce capabilities in R&D, strengthen the firm's internal processes by improving its innovation processes. More effective innovation enhances the customer perspective by building a strong reputation for technology and innovation. This, in turn, translates into the financial perspective through higher willingness to pay and improved gross margins. This illustrates the causal chain underlying the Balanced Scorecard in Delta/Signal, where initiatives at the "Learning & Growth" level act as leading indicators that ultimately drive financial performance, ensuring that operational actions remain aligned with the firm's strategic objectives.

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Question 3: Traditional cost systems

A. Explain and discuss the various design possibilities for traditional cost systems. What factors should be considered when choosing a design?	B. Analyse the strengths and weaknesses of different traditional cost system designs. How do these impact decision-making and financial reporting?	C. Using the provided example (**handout at the exam**) and the Buns Bakery case, explain the concept of absorption costing.
<u>Explanation of job-order costing</u> **Step 1: Receive customer order:** The process starts when the firm receives an order from a customer. Each order is treated as a separate job and assigned a unique job number. **Step 2: Schedule the job:** Management then schedules the job, deciding when production will take place and which departments will be involved. **Step 3: Order materials:** The firm orders the required materials. Direct materials are traced directly to the job using material requisition forms, while indirect materials are classified as manufacturing overhead. **Step 4: Begin production:** Production begins and direct labour is traced to the job using time tickets. At the same time, manufacturing overhead is applied to the job using the predetermined overhead rate, based on an estimated cost driver such as direct labour hours or machine-hours. **Step 5: Complete and sell the job:** When the job is completed, total costs are transferred from work in progress to finished goods, and once the job is sold, the costs are expensed as cost of goods sold. **Explanation of process costing** Process costing is used when a firm produces large volumes of identical products through a continuous production process. Instead of tracking individual jobs, costs are accumulated by production process and then averaged across all units produced. Each unit therefore receives the same average cost, making this system appropriate for large-scale industries such as chemicals or paper manufacturing. **Factors that need consideration when choosing design** When choosing between job-order and process costing, management must consider the nature of production, particularly whether products are customised or standardised. Job-order costing suits customised, distinct jobs, while process costing suits continuous production of identical products.	. **<u>Job-order costing</u>** **Strengths** • Ideal for businesses that produce customised or specialised goods or services to order. • Enables accurate pricing and quoting, since costs are traced and accumulated for each specific job. **Weaknesses** • Administratively time-consuming, complex and costly to maintain. • Overhead allocation may be inaccurate if the allocation base does not reflect actual resource usage. **<u>Process costing</u>** **Strengths** • Simple, cost-effective and efficient for high-volume, homogeneous production. • Provides consistent unit costs, which is useful for inventory valuation. **Weaknesses** • Limited cost detail, as all units receive the same average cost. • Can hide inefficiencies within individual processes or batches, because it is difficult to identify waste or performance problems at specific stages of production. **<u>Impact on decision-making and financial reporting</u>** **Job-order costing** For decision-making, job-order costing provides detailed, job-specific cost information, which supports pricing, quoting, and profitability analysis for individual jobs. At the same time, the system is time-consuming and complex, which can slow down decisions. For financial reporting, it allows accurate tracking of individual job costs under absorption costing, but complex overhead allocation increases the risk of misallocation. **Process costing** For decision-making, process costing works well for cost control in standardised, high-volume production, but the use of average costs means it offers limited insight into individual products or batches. For financial reporting, process costing provides stable, absorption-based unit cost valuation, which suits homogeneous products.	**Explaining absorption costing through the Buns Bakery case** In the Buns Bakery case, absorption costing is used to calculate the unit cost of muffins, cookies, and bread. Under absorption costing, each unit produced includes direct materials, direct labour, and both variable and fixed manufacturing overhead. For example, the cost of a dozen muffins is not just based on ingredients and labour. It also includes a share of manufacturing overhead, such as utilities, security costs, and depreciation on equipment, which are allocated using a predetermined overhead rate based on direct labour hours. This means that fixed manufacturing overhead is absorbed into inventory and only expensed as cost of goods sold when the products are sold, not when they are produced. This matters in the case because the venture capital firm is interested in profit margins and earnings per share (EPS). Under absorption costing, producing and selling more units spreads fixed manufacturing overhead over a larger number of units, which can improve reported margins. This is why Nicole points out that higher sales volumes would increase profit margins, since fixed costs are allocated over more units. In short, the Buns Bakery case shows absorption costing in practice by demonstrating how all manufacturing costs are included in product cost, how overhead is allocated to units, and how this directly affects reported profitability and financial reporting. **Explaining absorption costing through the handout example** I am not sure how the example will look like, but the idea remains that absorption costing treats all manufacturing costs, direct materials, direct labour, and both variable and fixed manufacturing overhead as product costs, with fixed overhead included in inventory and expensed as cost of goods sold when the units are sold.

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Question 4: Discuss the definition and use of the concepts of variable and fixed costs

A. Provide examples of different cost behaviour patterns.

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<u>This is super important to mention:</u>

- Variable costs vary in direct proportion to a change in the level of activity, but the cost per unit remain constant.
- Fixed costs remain constant within the relevant range of activity, but the cost per unit decreases as activity level increases.

<u>Variable costs</u>

True variable costs change in direct proportion to activity, while the cost per unit remains constant. Step-variable costs increase in fixed jumps rather than smoothly. A useful way to think about this is a staircase: for example, once a machine reaches full capacity, a new machine must be added to increase output, causing total costs to jump.

Variable costs can behave in a curvilinear fashion, because many of these costs are not strictly linear in relation to volume, which is why a function can be approximated of a straight line within the relevant range.

<u>Fixed costs</u>

Fixed costs remain constant in total within the relevant range of activity, meaning the fixed cost per unit decreases as activity increases. Fixed costs can be committed or discretionary.

- **Committed:** long-term investments, fx. equipment, that <u>cannot</u> be reduced in the short-run without impacting the firm's long-term goals.
- **Discretionary:** short-term investments, fx. advertising, that <u>can</u> be reduced in the short-run without impacting the firm's long-term goals.

<u>Mixed costs</u>

Mixed costs contain both a fixed and a variable component. A typical example is phone subscriptions, where there is a fixed monthly charge plus a variable cost based on usage if you exceed the given volume.

These different cost behaviour patterns are important because managers must understand how costs respond to changes in activity, which ultimately leads into the next question on how cost behaviour can be estimated.

B. How can we estimate cost behaviours? Discuss the methods and their applications.

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<u>The high-low method</u>

Method: Uses the highest and lowest activity levels to calculate the variable cost per unit and total fixed cost.

Pros: simple to use and requires only two data points to get a rough estimation.

Cons: it is inaccurate, as it relies on only two data points and ignores all other observations, which can be misleading if either point is an outlier.

<u>The scattergraph method</u>

Method: Plots observations of total cost against activity level on a graph. The slope represents variable costs, while the intercept represents fixed costs.

Pros: takes into account all the cost data making it easy to visualise trends and outliers, enabling easy adjustments to fit regression line.

Cons: it is both subjective and not precise as two analysts will likely not draw the same regression line and it is difficult to pinpoint the exact intersection of the vertical (cost) axis.

<u>The least-squares regression method</u>

Method: uses statistical techniques to estimate the cost equation that minimises the sum of squared errors between actual and predicted costs.

Pros: uses mathematical formula to fit regression line (more objective), and provides a number (R^2) to assess how well the model explains cost behaviour.

Cons: can only highlight the relationship between two variables, and can be skewed because it does not take into account outliers.

<u>The multiple regression analysis</u>

Method: extends least-squares method by including more than one cost driver, such as machine-hours, number of setups, or orders, to explain cost behaviour.

Pros: provides a more realistic representation of cost behaviour when costs are influenced by several activities and useful in complex production environments.

Cons: requires large datasets and is prone to overfitting as the number of variable increases.

<u>The contribution format</u>

Method: shows contribution margin as revenue minus variable costs, which then covers fixed costs and profits.

Pros: clearly shows how changes in volume affect profit, making it useful for CVP analysis.

Cons: not allowed for external reporting and relies on relevant range assumption.

C. What are the pros and cons of cost-volume-profit (CVP) analysis? How does it aid in decision-making?

Pros of CVP analysis

The analysis shows the relationship between selling price, variable costs, fixed costs, volume and profit. It makes the contribution margin explicit, which allows managers to calculate the break-even-point, margin of safety and operating leverage. Because of its simplicity, CVP is easy to communicate and very useful for short-term planning

Cons of CVP analysis

CVP analysis relies on strong assumptions: costs and revenues must be linear, selling prices constant, and the analysis must stay within the relevant range. In multi-product firms, it also assumes a constant sales mix, which can mislead results if demand shifts. In reality, costs may be mixed or curvilinear, making CVP less accurate.

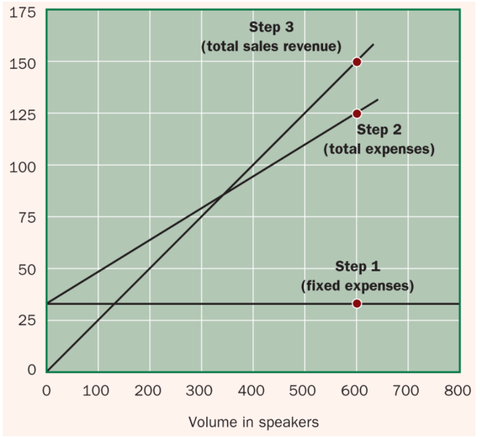
Aid in decision-making

CVP helps managers evaluate decisions related to pricing, volume changes, cost structure, and risk. It shows how changes in sales affect profit through the CM ratio, and how a firm's fixed-cost structure influences profit volatility via operating leverage. This allows managers to compare alternatives and choose actions that improve profitability under different demand scenarios.

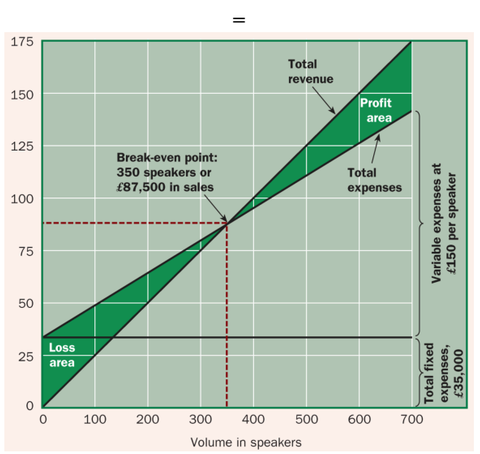
Item	Capital intensive firm (high fixed costs)	Labour intensive firm (high variable costs)	Note
The CM ratio is	High	Low	Capital intensive firms have less variable costs.
Operating leverage is	High	Low	Capital intensive firms have less variable costs, hence larger contribution margin.
In periods of increasing revenue, profits will tend to increase	Rapidly	Slowly	Capital intensive firms have high operating leverage and CM ratio.
In periods of decreasing revenue, profits will tend to decrease	Slowly	Rapidly	
The volatility of profit with changes in revenue will tend to be	Greater	Less	Capital intensive firms have higher operating leverage.
The break-even point will tend to be	Higher	Lower	Capital intensive firms have higher fixed costs.
The margin of safety at any given level of revenue will tend to be	Lower	Higher	Capital intensive firms have a higher break-even point.

D. Show and explain the methodology in CVP analysis using the example provided (**handout at the exam**).

It will most likely be something like this



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Look at the cheat sheet for good explanation.

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Question 5: Absorption and variable costing

A. What is the difference between profit reporting under traditional absorption costing and variable costing?	B. For which purposes can you use either of the two systems? Discuss the advantages and limitations of each.	C. Explain the consequences of allocation of fixed costs on inventory valuation and periodic profit. Use the example in the handout (**handout at the exam**).	D. Using the case of Buns Bakery, how would absorption costing assign fixed manufacturing overhead to the products?
The main difference between profit reporting under traditional absorption costing and variable costing is the treatment of fixed manufacturing overhead. **Absorption costing:** Under absorption costing, product cost includes direct materials, direct labour, variable manufacturing overhead, and fixed manufacturing overhead. Fixed manufacturing overhead is therefore treated as a product cost and allocated to each unit produced, becoming part of inventory. These costs are only expensed as cost of goods sold when the units are sold, not when they are produced. As a consequence, reported profit is influenced by changes in inventory levels and therefore depends on both production volume and sales volume. **Variable costing:** Under variable costing, product cost includes only direct materials, direct labour, and variable manufacturing overhead. Fixed manufacturing overhead is not treated as a product cost, but as a period cost, and is expensed in full in the period incurred, regardless of how many units are produced or sold. Consequently, reported profit depends only on sales volume and is unaffected by changes in inventory. **Key differences:** The key difference is that under absorption costing, fixed manufacturing overhead is allocated to individual units and included in inventory, whereas under variable costing it is not allocated to units, but expensed in total as a period cost.	. **Absorption costing** **Purpose** Absorption costing is used for external financial reporting and inventory valuation, since it assigns all manufacturing costs to products and matches costs with revenues when goods are sold. **Advantages** • Improves matching, since production costs are expensed when the product is sold rather than when it is produced. • Assigns all manufacturing costs to products, including fixed costs such as depreciation, taxes, and insurance, giving a full cost of production. **Limitations** • Reported profit is affected by changes in inventory levels, not only sales. • Reported profit can be misleading, as it may increase simply by producing more units even if sales do not increase, creating wrong managerial incentives. **Variable costing** **Purpose** Variable costing is used for internal decision-making, particularly for CVP analysis, contribution margin analysis, and short-run planning. **Advantages** • In contrast to absorption costing, it clearly separates variable and fixed costs, improving cost behaviour analysis. • Profit is unaffected by inventory changes, so profit movements align directly with changes in sales. • Makes it easier to assess product and segment profitability, since fixed manufacturing overhead is not spread across units and each product shows its true contribution margin. **Limitations** • Not permitted for external financial reporting and understates actual inventory valuation. • Excludes fixed manufacturing overhead from product cost, which limits long-term pricing decisions.	**Consequences on inventory valuation** **Absorption costing** Under absorption costing, fixed manufacturing overhead is allocated to units produced and included in inventory. When production exceeds sales, part of the fixed manufacturing overhead is stored in ending inventory, which increases inventory valuation. When sales exceed production, previously deferred fixed manufacturing overhead is released from inventory, lowering inventory value. **Variable costing** Under variable costing, fixed manufacturing overhead is not allocated to units but expensed in full in the period incurred. Inventory valuation therefore excludes fixed manufacturing overhead and is always lower than under absorption costing. **Consequences on periodic profit** **Absorption costing** Under absorption costing, when production exceeds sales, cost of goods sold is lower and reported profit is higher because fixed manufacturing overhead is deferred in inventory. When sales exceed production, cost of goods sold increases and reported profit decreases as fixed costs are released from inventory. **Variable costing** Under variable costing, periodic profit is unaffected by inventory changes because fixed manufacturing overhead is always expensed in the period. Profit depends only on sales volume. **Handout** Using the handout example, the difference in reported profit between absorption and variable costing is exactly equal to the amount of fixed manufacturing overhead included in or released from inventory due to changes in inventory levels → I have to find an example of this.	**Absorption costing in Buns Bakery** In the Buns Bakery case, absorption costing is used to calculate the unit cost of muffins, cookies, and bread. Under absorption costing, each unit produced includes direct materials, direct labour, and both variable and fixed manufacturing overhead. For example, the cost of a dozen muffins is not just based on ingredients and labour. It also includes a share of manufacturing overhead, such as utilities, security costs, and depreciation on equipment, which are allocated using a predetermined overhead rate based on direct labour hours. This means that fixed manufacturing overhead is absorbed into inventory and only expensed as cost of goods sold when the products are sold, not when they are produced. This matters in the case because the venture capital firm is interested in profit margins and earnings per share (EPS). Under absorption costing, producing and selling more units spreads fixed manufacturing overhead over a larger number of units, which can improve reported margins. This is why Nicole points out that higher sales volumes would increase profit margins, since fixed costs are allocated over more units. In short, the Buns Bakery case shows absorption costing in practice by demonstrating how all manufacturing costs are included in product cost, how overhead is allocated to units, and how this directly affects reported profitability and financial reporting.

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Question 6: Activity-Based Costing

A. Using the provided example, explain the concept of Activity-Based Costing (**handout at the exam**)

Concept explanation using handout (look at B))

Step 1: Start with the idea:

Activity-Based Costing applies overhead based on the activities that cause the costs, rather than on production volume. ABC is an approach that traces resource consumption to final outputs based on estimated usage.

Step 2: Point to the activities in the handout

In the handout, overhead is first broken down into activities, such as X and Y [point at for example setups, inspections]. The overhead is, in contrast to variable costing, not one big pool, but many smaller ones.

Step 3: Explain cost pools and cost drivers

Each activity forms its own cost pool, and each pool has a cost driver that explains why the cost occurs, for example X or Y. This is the core difference from traditional costing. [Point at the cost drivers such as # setups, inspection hours..].

Step 4: Calculate activity rates

These rates show the cost of performing one unit of each activity. For example, setups: $\frac{120.000}{60} = 2.000$ per setup or inspections: $\frac{80.000}{400} = 200$ per hour.

Step 5: Assign costs to products

Products are then charged overhead based on how much of each activity they actually use. A product that requires more X or Y is assigned more overhead.

Product A → $Setups = 10,\ \ inspection\ hours = 100. = \mathbf{40.000\ overhead}$

Product B → $Setups = 50,\ \ inspection\ hours = 300. = \mathbf{160.000\ overhead}$

Step 6: Contrast briefly with traditional costing

Under traditional costing, the same overhead would be allocated using one volume-based measure, which would likely overapply overhead to X and underapply overhead to Y.

Round up: Using the handout, ABC traces overhead through activities and cost drivers, so products are charged for the resources they actually consume, not just for how many units they produce.

B. Explain and discuss the design steps and choices you need to consider when designing an Activity-Based Costing (ABC) system. What factors influence these decisions?

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Step 1: Identify activity cost pools

First, the overhead is grouped into activity cost pools, where each pool represents a major activity that consumes resources. In my example, I identify three cost pools.

Machine costs: £300.000 Set-up costs: £700.000 Quality inspection costs: £250.000

These pools already include overhead that cannot be directly traced, such as factory rent, utilities, and depreciation, which are allocated into the pools based on estimated resource usage.

Step 2: Identify cost drivers

For each cost pool, an allocation base is chosen that explains why the cost occurs.

Machine costs → machine-hours Set-up costs → number of production runs Quality inspection costs → number of inspections

Step 3: Calculate cost driver rates

Each cost driver rate is calculated as follows:

$$Cost\ driver\ rate = \frac{Cost\ pool}{Total\ activity\ volume}$$

- Machine costs → $\frac{£300.000}{100.000\ hours} = £3\ per\ hour$
- Set-up costs → $\frac{£700.000}{280\ setups} = £2.500\ per\ setup$
- Quality inspection costs → $\frac{£250.000}{750\ inspections} = £333.33\ per\ inspection$

Now, all overhead, including rent and depreciation, has been converted into per-activity rates, completing the first-stage allocation.

Step 4: Absorb overhead into products

In the second-stage allocation, activity costs are assigned to products using the allocation bases and the cost driver rates.

$$Overhead\ assigned = Number\ of\ activity\ actually\ consumed * per\ activity\ rate$$

- Machine-hours: $50.000 * £3 = £150.000$
- Set-up costs: $200 * £2.500 = £500.000$
- Quality inspection costs: $250 * £333.33 = £83.333$

Activity-based costing traces overhead to products based on activities that consume resources, so products that require more setups, inspections, or machine time absorb more overhead — including costs that cannot be directly traced such as rent and depreciation.

Which factors to consider

- **Product diversity:** ABC is most valuable when products differ in volume, complexity and resource consumption (J-O-costing).
- **Allocation base:** should reflect a clear cause-and-effect relationship, given overhead is driven by activities, not volume.
- **Cost-benefit trade-off:** the additional time used to design ABC must justify increased complexity and implementation costs.

C. What implications does Activity-Based Costing (ABC) analysis have for an organisation? Discuss the potential benefits and challenges.

Implications

By allocating overhead based on activities rather than production volume, ABC provides more accurate product costs, particularly in modern environments characterised by multiple overhead types and low reliance on direct labour. ABC is becoming more relevant today, because of the increased automation of machines in production.

Benefits

- **More accurate cost information:** overhead is allocated to products through multiple activities, each using its own allocation base that reflect cause-and-effect, rather than a single volume driver as in traditional costing methods.
- **Better decision making:** enables more reliable product- and customer-level profitability analysis, supports pricing based on true resource consumption, and helps identify products or customers that consume disproportionate amounts of overhead.
- **Cost management insight:** increases visibility of cost drivers and non-value adding activities, supporting targeted process improvements and more efficient use of resources.

Challenges

- **High implementation cost and complexity:** Requires costly extensive data collection, time-consuming employee interviews, thus hard to maintain.
- **Employee bias:** Activity measures rely on estimates and employee input, which may be biased or resisted. An employee might spend more or less time on a task than they say ...
- **Subjective allocation:** The choice of activities and allocation bases involves managerial judgment, which can affect cost reliability.
- **Limited external reporting use:** ABC is not GAAP nor IFRS compliant, so firms often need parallel systems for internal and external reporting.

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Question 7: Activity-Based Costing and Time-Driven Activity-Based Costing

A. Explain the different design steps and choices involved in implementing a traditional ABC system. What factors should be considered during this process?

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Step 1: Identify activity cost pools

First, the overhead is grouped into activity cost pools, where each pool represents a major activity that consumes resources.

Machine costs: £300.000 Set-up costs: £700.000 Quality inspection costs: £250.000

These pools already include overhead that cannot be directly traced, such as factory rent, utilities, and depreciation, which are allocated into the pools based on estimated resource usage.

Step 2: Identify cost drivers

For each cost pool, an allocation base is chosen that explains why the cost occurs.

Machine costs → machine-hours Set-up costs → number of production runs Quality inspection costs → number of inspections

Step 3: Calculate cost driver rates

Each cost driver rate is calculated as follows:

$$Cost\ driver\ rate = \frac{Cost\ pool}{Total\ activity\ volume}$$

- Machine costs → $\frac{£300.000}{100.000\ hours} = £3\ per\ hour$
- Set-up costs → $\frac{£700.000}{280\ setups} = £2.500\ per\ setup$
- Quality inspection costs → $\frac{£250.000}{750\ inspections} = £333.33\ per\ inspection$

Now, all overhead, including rent and depreciation, has been converted into per-activity rates, completing the first-stage allocation.

Step 4: Absorb overhead into products

In the second-stage allocation, activity costs are assigned to products using the allocation bases and the cost driver rates.

$$Overhead\ assigned = Number\ of\ activity\ actually\ consumed * per\ activity\ rate$$

- Machine-hours: $50.000 * £3 = £150.000$
- Set-up costs: $200 * £2.500 = £500.000$
- Quality inspection costs: $250 * £333.33 = £83.333$

Activity-based costing traces overhead to products based on activities that consume resources, so products that require more setups, inspections, or machine time absorb more overhead — including costs that cannot be directly traced such as rent and depreciation.

Which factors to consider

- **Product diversity:** ABC is most valuable when products differ in volume, complexity and resource consumption (J-O-costing).
- **Allocation base:** should reflect a clear cause-and-effect relationship, given overhead is driven by activities, not volume.
- **Cost-benefit trade-off:** the additional time used to design ABC must justify increased complexity and implementation costs.

B. Explain how TD-ABC differs from traditional ABC. What are the advantages and disadvantages of TD-ABC?

.

How TD-ABC differs from traditional ABC

The main difference is that TD-ABC distinguishes between used and unused capacity, whereas traditional ABC allocates all costs fully to activities and products. As a result, TD-ABC makes inefficiencies and excess capacity visible, while ABC hides these costs within product costs.

Advantages and disadvantages of TD-ABC

Advantages

- **Explicit treatment of unused capacity:** TD-ABC sepatates used and unused capacity, making idle time visible instead of allocating it to products, which improves cost accuracy.
- **Simplicity and fewer assumptions:** Uses time equations instead of multiple activities and allocation bases, reducing subjectivity and data requirements.
- **Easier to update:** Capacity cost rates and time estimates can be quickly updated with resource costs or practical capacity change, making it suitable for dynamic environments.

Disadvantages

- **Dependence on time estimates:** Accuracy relies on correct estimation of time equations, with poor estimates giving misleading costs.
- **Time not always the main cost driver:** Some overhead costs is not primarily driven by time (machine setup) which limits its applicability.
- **Internal use only:** As with ABC, TD-ABC is not suitable for GAAP nor IFRS reporting and is mainly a tool for internal decision making.

C. Use the Nordipack case to explain and discuss the implementation and benefits of TD-ABC.

Intro / explanation of case

Nordipack implemented TD-ABC to improve transparency in customer and segment profitability by tracing indirect and support costs to customers based on actual resource consumption. Telesales is used as an example.

Implementation of TD-ABC using Nordipack

Step 1: Capacity cost rate

First they calculated the capacity cost rate by identifying the total resource costs of the telesales function. These costs were divided by the practical capacity of telesales employees to obtain a cost per minute of telesales capacity.

Step 2: Time equation

Next, they defined the time equation for each customer interaction, which was 20 minutes.

Step 3: Assign costs using time

Telesales costs were then assigned to customers by multiplying the time equation by the capacity cost rate and the # of interactions per customer.

Benefits of TD-ABC using Nordipack

- **Clearer customer and segment profitability:** the TD-ABC system showed that customers with similar revenues consumed very different levels of support costs.
- **Identification of cost drivers:** especially in telesales, customer behaviour rather than production volume drove costs.

D. Discuss the use of TD-ABC for customer profitability analysis. How can it help firm understand and improve customer profitability?

Use of TD-ABC for customer profitability

It is particularly well-suited because it assigns costs based on the time required to serve individual customers. Using time equations and a capacity cost rate, it capture how customer-specific characteristics, such as order frequency or order size, drive resource consumption. This avoids spreading overhead evenly across customers and instead links costs directly to customer behaviour.

Understanding and improving customer profitability

TD-ABC shows that customers with similar revenues can consume very different amounts of capacity by linking costs to time-based resource consumption. This shifts the focus from what a customer buys to how much it costs to serve them, for example frequent small orders will incur higher costs for the firm. By making these cost-driving behaviours visible, TD-ABC enables firms to redesign service processes, adjust pricing or service terms, and align revenues with the true cost of serving customers.

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Question 8: Activity-Based Costing

A. Explain and discuss the design steps and choices you need to consider when designing an Activity-Based Costing (ABC) system. What factors influence these decisions?

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Step 1: Identify activity cost pools

First, the overhead is grouped into activity cost pools, where each pool represents a major activity that consumes resources. In my example, I identify three cost pools.

Machine costs: £300.000 Set-up costs: £700.000 Inspection costs: £250.000

These pools already include overhead that cannot be directly traced, such as factory rent, utilities, and depreciation, which are allocated into the pools based on estimated resource usage.

Step 2: Identify cost drivers

For each cost pool, an allocation base is chosen that explains why the cost occurs.

Machine costs → machine-hours | Set-up costs → # of production runs | Inspection costs → # of inspections

Step 3: Calculate cost driver rates

Each cost driver rate is calculated as follows:

$$Cost\ driver\ rate = \frac{Cost\ pool}{Total\ activity\ volume}$$

- Machine costs → $\frac{£300.000}{100.000\ hours} = £3\ per\ hour$
- Set-up costs → $\frac{£700.000}{280\ setups} = £2.500\ per\ setup$
- Inspection costs → $\frac{£250.000}{750\ inspections} = £333.33\ per\ inspection$

Now, all overhead, has been converted into per-activity rates, completing the first-stage allocation.

Step 4: Absorb overhead into products

In the second-stage allocation, activity costs are assigned to products using the allocation bases and the cost driver rates.

$$Overhead\ assigned = Number\ of\ activity\ actually\ consumed * per\ activity\ rate$$

- Machine-hours: $50.000 * £3 = £150.000$
- Set-up costs: $200 * £2.500 = £500.000$
- Inspection costs: $250 * £333.33 = £83.333$

Activity-based costing traces overhead to products based on activities that consume resources, so products that require more setups, inspections, or machine time absorb more overhead — including costs that cannot be directly traced such as rent and depreciation.

<u>Which factors to consider</u>

- **Product diversity:** ABC is most valuable when products differ in volume, complexity and resource consumption.
- **Allocation base:** should reflect a clear cause-and-effect relationship, given overhead is driven by activities
- **Cost-benefit trade-off:** the time used to design ABC must justify increased complexity and implementation costs.

B. In the Nordipack case, a customer profitability analysis based on TDABC was conducted. Explain how this analysis was carried out in the case.

Summary of the analysis

Nordipack used TD-ABC to calculate net customer profit, build a whale curve, and then analysed detailed customer P/Ls and market benchmarks to explain profitability issues.

<u>Explanation of how the analysis was carried out in the case</u>

Step 1: Calculating net customer profit

First, they calculated net customer profit for every individual customer. Using TD-ABC, customer-specific cost-to-serve expenses, such as telesales, based on time equations and capacity cost rates, was assigned and deducted from revenues together with COGS and freight. This revealed that several of Nordipack's customers were loss-making.

Step 2: Rank customers by net profit

Next, customers were ranked from highest to lowest net customer profit, identifying which customers created value and which destroyed value.

Step 3: Calculate accumulated profit and share of total profit

After ranking, accumulated net profit and percentage of total profit were calculated, showing how profits were concentrated across the customer base.

Step 4: Creation of the whale curve

Using accumulated net profit and % of total profit, they constructed a whale curve showing that a small group of customers generates most of the total profit, while many customers are marginal or even loss-making, offsetting part of the gains from the top customers. [I have to draw the whale curve to illustrate it – ties into task C)].

Step 5: Analysis of individual customer P/Ls

Nordipack then analysed individual customer P/Ls, breaking down TD-ABC support costs to identify the specific cost drivers behind profitability or losses.

Step 6: Benchmarking customers against market averages

Finally, individual customer P/Ls were benchmarked against market and segment averages to assess whether underperformance was driven by above-average cost-to-serve or specific market characteristics.

Conclusion: the analysis shows that Nordipack's profitability issues were driven by high customer-specific cost-to-serve, rather than weak gross margins.

C. What can customer profitability analysis be used for? Discuss its benefits and applications. What analyses can we perform?

What customer profitability analysis can be used for

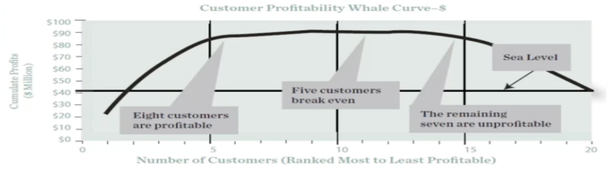
Customer profitability analysis is used to understand and compare which customers create value after accounting for their cost-to-serve. It shifts managerial focus from revenues/volumes to economic contribution.

The benefits of customer profitability analysis

- **Identifies profitable and unprofitable customers** by measuring net customer profit after true cost-to-serve, highlighting value creators and resource drains.
- **Optimises resource allocation** by directing sales, services and operational capacity toward the most profitable customers.
- **Improves pricing and service decisions** by linking prices and service levels directly to customer-specific cost-to-serve rather than revenue or volume.

<u>The analyses/applications customer profitability analysis can perform</u>

The whale curve



The whale curve ranks customers by profitability, where the upwards slope represents the top group that generates most profit, the middle breaks even and the downward tail represents unprofitable customers [draw and explain].

Customer prioritisation matrix

This matrix classifies customers as passive "champions" (high margin, low cost-to-serve), savvy "demanders" (high margin but costly to serve), cheap "acquaintances" (low margin, low service needs), and aggressive "losers" (low margin, high cost-to-serve), helping managers decide which customers to prioritise, redesign, or exit.

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Question 9: Relevant costs for decision-making

A. What are relevant costs in decision-making? How do you identify which costs are relevant for a particular decision?	B. Discuss the different types of relevant costs that can impact decision-making. Provide examples for each type.	C. How are relevant costs used in decision-making? Discuss their application in various business scenarios.	D. Apply relevant costs to make a decision for the situation described in the example (**handout at the exam**).
. **Relevant costs in decision-making** Relevant costs are costs that differ between decision alternatives and affect the future. In practice, relevant costs are typically avoidable costs, costs that can be eliminated, in whole or in part, by choosing one alternative over another. Because they differ across alternatives, they are decision-relevant. **Extra: irrelevant costs in decision-making** An irrelevant cost, on the other hand, is a cost that will not be affected by a specific decision and, therefore, should be ignored when making a choice between alternatives. For example: if I contemplate on going to the cinema or download a film at home this evening, the rent on my apartment is an irrelevant cost, because the size of the rent will be the same regardless of which decision I make. **How to identify relevant costs** To identify which costs are relevant, managers should apply two key criteria. First, the cost must be future-oriented. Only costs that will be incurred in the future are relevant for decision-making, while past or sunk costs are irrelevant because they cannot be changed by the decision. Second, the cost must be differential and avoidable, meaning it differs between the available alternatives. If a cost remains the same regardless of which option is chosen, it is irrelevant. **Conclusion** In short, a cost is relevant if it is future-oriented and avoidable, and irrelevant if it is sunk or unavoidable.	. **The different types of relevant costs** **Opportunity costs** The potential benefit that is given up when one alternative is selected over another. A way to look at it is this: “What are we giving up by saying yes?”. It is important to note that these are not actual cash outlay and not recorded in the accounts of the firm. Constrained resource example: Using a bottleneck machine to produce Product A instead of Product B; the opportunity cost is the lost unit contribution margin from Product B. Make-or-buy example: Choosing to make a component internally instead of buying it; the opportunity cost is the contribution margin from the best alternative use of that capacity. **Avoidable costs** An avoidable cost is a cost that can be saved in whole or in part by choosing one alternative over the other. Dropping a product line: Direct materials and direct labour that would no longer be incurred if the line is dropped are avoidable costs. Special order: The additional materials and labour required to fulfil a one-time order are avoidable costs (but only if the order is accepted – to be accepted the incremental revenue needs to exceed the incremental costs). **Conclusion** Relevant costs consist of opportunity costs and avoidable costs. Opportunity costs capture the benefits forgone when choosing one alternative over another, while avoidable costs represent future costs that can be eliminated by a decision. Both are relevant because they differ between alternatives and affect future outcomes.	**How relevant costs are used in decision-making** Relevant costs are used in decision-making by comparing only the future costs and benefits that differ between alternatives. By excluding sunk and unavoidable costs, managers focus on the economic consequences of each option and choose the alternative that maximises profit. **Constrained resource example** In these decisions, relevant costs are expressed as opportunity costs. When a bottleneck resource is used for one product, the relevant cost is the contribution margin forgone from the product that cannot be produced. Decisions should therefore allocate capacity to the product with the highest contribution margin per unit of the limiting factor. **Make-or-buy example** In this decision, the objective is to choose between internal production and outsourcing. The relevant costs are the avoidable internal production costs and the avoidable purchase price, since each is incurred only under one alternative. If internal capacity has an alternative use, an opportunity cost must also be included, measured as the contribution margin forgone from the best alternative use of that capacity, to ensure the correct decision is made. **Dropping a product line** In a drop-or-keep decision, the objective is to assess whether a product line contributes positively to overall profitability. The relevant costs are the avoidable costs that would no longer be incurred if the product is dropped, such as direct materials and direct labour. **Special order** In these decisions, relevant costs are the incremental (avoidable) costs required to fulfil the order, such as additional materials and labour. A special order should be accepted only if incremental revenue exceeds incremental costs.	

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Question 10: Budgeting

A. What are the purposes of budgeting?	B. Using the case of Pharmabrew, explain how budgeting can contribute to effective management.	C. Define the advantages as well as the disadvantages of budgeting.	D. Using the case of Buns Bakery, describe how budgets are prepared. What steps are involved?	E. Show and explain the methodology in the example (**handout at the exam**).
Definition of budget A budget is a plan that shows how a firm expects to use its resources over a specific period of time. **<u>Purposes of the budget</u>** **Planning** Budgeting supports planning by translating strategic objectives into concrete operational plans, specifying expected volumes, resource needs, and timing for the coming period. **Communication** Budgeting facilitates communication by making expectations and priorities explicit and shared across the organization, reducing uncertainty and misunderstandings between managers. **Coordination** Budgeting enables coordination by aligning interdependent activities across departments, ensuring that decisions in one area (sales fx.) are consistent with production and purchasing plans. **Control** It serves as a control mechanism by providing a benchmark for comparing planned and actual performance, allowing management to identify deviations early and take corrective action. **Motivation and performance evaluation** Budgeting supports motivation and performance evaluation by defining expected targets and providing a basis for assessing managerial actions and outcomes.	**Budgeting as planning** At Pharmabrew, the budget should have translated the growth strategy and product launches into a realistic production and material plan. Instead, weak sales budgeting left production and purchasing without a reliable basis for capacity and material planning. **Budgeting as coordination** The budgeting failed to align departments. Purchasing followed the budgeted June production plan, while the sales team pulled the demand forward without updating the budget, leading to material shortages, delayed production and customer complaints. **Budgeting as control** At Pharmabrew, the sales team intentionally understated the sales budget to secure bonuses and did not inform the production or purchasing teams. As a result, sales looked “on track” in the budget, so problems were only noticed once materials were missing, production was late, and clients started complaining. **Budgeting contributes to effective management** Budgeting translates strategy into operational plans by supporting communication and alignment between interdependent departments, and providing managers with an early warning system. The Pharmabrew case shows that when budgeting fails in these roles, coordination breaks down, problems are detected too late, which ultimately leads to both operational and customer-related issues.	**Advantages of budgeting** • **Defines goals and objectives:** it translates strategy into concrete financial targets and serve as benchmarks for controlling and evaluating performance. • **Forces future planning and alignment:** forces managers to think ahead and plan for the future, ensuring everyone in the organisation is pulling in the same direction toward common goals. • **Improves communication:** it provides a formal way of communicating plans through the organisation, ensuring managers knows what is expected of them. • **Improves resource allocation:** it helps allocate scarce resources to the parts of the organisation where they can be used most effectively. • **Uncovers potential bottlenecks:** budgeting can identify capacity constraints and bottlenecks in advance, which allows management to address problems before they occur. **Disadvantages of budgeting** • **Time-consuming:** budget development is timely and costly (it can take up to 4 months to develop) • **Focus on cost control rather than value creation:** budgeting tends to emphasise meeting cost targets, which can undermine innovation, long-term value creation and strategic thinking. • **Historically based and inflexible:** budgets are often built on past figures and incremental adjustments, making them rigid and slow to adapt to rapidly changing market conditions. • **Encourages dysfunctional behaviour:** can lead to overspending, because the budget say so (inefficient)	**Step 1: The sales budget and cash collection budget** Sales are forecasted by product and quarter, using last year as a base and seasonal patterns. About 10% of sales are cash, while credit sales are collected 30% now, 45% next quarter and 25% two quarters later. **Step 2: The production budget** Production is based on sales plus ending inventory. Buns Bakery holds two days of finished goods due to freshness. **Step 3: The direct materials budget** Buns Bakery holds 15% of next quarter’s raw material needs as ending inventory. **Step 4: The direct labour budget** Production volumes are converted into labour hours for the different activities using standard time and wage rates per hour. Buns Bakery use a traditional cost system. **Step 5: The manufacturing overhead budget** Variable overhead is budgeted at $2 per direct labour hour, and fixed MOH is $160.000 per quarter. **Step 6: The ending finished goods budget** Ending inventory is valued using the unit production cost. **Step 7: The selling and admin expenses budget** Selling costs include a 1% commission (admin fixed). **Step 8: The cash budget** Combines cash collections and payments, including 85% of inventory purchased in the current quarter. **Step 9: The budgeted statement of P/L** The budgets are given in an income statement showing expected revenues, costs and profit for the period.	

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Question 11: Flexible budget and variance analysis

A. Explain the concepts of flexible budget and variance analysis and how they differ.	B. Show and explain the methodology in the example provided (**handout at the exam**).	C. Provide some solutions to La Compagnie du Froid. How can the company improve its financial performance and operational efficiency?

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Flexible budgets

Concept of flexible budgets

A flexible budget is a budget that is adjusted to the actual level of activity achieved during a period. Instead of comparing actual results to a single, static budget, the flexible budget shows what costs and revenues should have been given the actual activity level. The core idea is: "*What should the cost and revenues have been at the activity level we actually had?"*

Flexible budgets purpose

The main purpose of a flexible budget is to distinguish volume effects, often caused by uncontrollable factors, from managerial performance. In the case of La Compagnie du Froid, unusually cold weather reduced ice-cream demand and sales volumes, an effect outside management's control. By adjusting revenues and variable costs to the lower actual activity level, a flexible budget separates this volume effect from operational performance, allowing management to assess whether cost overruns were due to inefficiencies or simply the result of lower demand rather than poor managerial decisions.

Variance analysis

Concept of variance analysis

Variance analysis compares actual results with budgeted amounts to discover deviations. Variances capture differences between actual and expected performance and are classified as favourable or unfavourable, supporting management by exception. A variance should only be investigated when it is unusual relative to the normal levels of fluctuation.

How flexible budgets and variance analysis differ

A flexible budget establishes the correct benchmark by adjusting budgeted costs and revenues to the actual level of activity achieved. Variance analysis then compares actual results with this benchmark to identify and explain deviations. In short the flexible budget sets the right benchmark, while the variance analysis explains the differences.

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Key things to know and address when preparing a flexible budget

- Total variable costs change in direct proportion to changes in activity.
- Total fixed costs stay remain unchanged within the relevant range of activity.

CheeseCO	CheeseCO	Cost formula per hour	Total fixed cost	Flexible budgets 8.000 Hours	10.000 Hours	12.000 Hours
Machine Hours	Machine Hours			8.000	10.000	12.000
Variable costs	Variable costs					
Indirect labour	Indirect labour	€ 4,00		€ 32.000	€ 40.000	€ 48.000
		3,00		€ 24.000	€ 30.000	€ 36.000
		0,50		€ 4.000	€ 5.000	€ 6.000
T		7,50		€ 60.000	€ 75.000	€ 90.000
Fixed costs	Fixed costs					
Depreciation	Depreciation		€ 12.000	€ 12.000	€ 12.000	€ 12.000
Insurance	Insurance		€ 2.000	€ 2.000	€ 2.000	€ 2.000
Total fixed cost	Total fixed cost			€ 14.000	€ 14.000	€ 14.000
Total variable overhead costs	Total variable overhead costs			€ 74.000	€ 89.000	€ 104.000

Total fixed costs do not change in the relevant range.

Preparing a flexible budget

Step 1: Activity base

To prepare a flexible budget, a reliable activity base must be identified. This is the measure that drives variable overhead costs, such as machine-hours. The activity base should have a clear causal relationship with overhead costs, be defined in operational terms, and be intuitive for managers to understand and use. The choice shapes how meaningful the flexible budget will be.

Step 2: Calculating the benchmarks (total variable overhead costs)

The benchmarks are rising as volume increases, but only because of the variable components. The fixed costs remain unchanged because the volume is within the relevant range. Thes benchmarks tells us what the costs should have been given the actual level of activity.

Step 3: Calculating what the costs actually was and identify variances

CheeseCO	Cost formula per hour	CheeseCO	Cost formula per hour	Total fixed cost	Flexible budget	Actual results	Variances	
Machine Hours		Machine Hours			8.000	8.000	-	
Variable costs		Variable costs						
Indirect labour	€ 4,00	Indirect labour	€ 4,00		€ 32.000	€ 34.000	-€ 2.000	U
Indirect materials	€ 3,00	Indirect materials	€ 3,00		€ 24.000	€ 25.500	-€ 1.500	U
Power	€ 0,50	Power	€ 0,50		€ 4.000	€ 3.800	€ 200	F
Total variable costs	€ 7,50	Total variable costs	€ 7,50		€ 60.000	€ 63.300	-€ 3.300	U
Fixed costs		Fixed costs						
Depreciation		Depreciation		€ 12.000	€ 12.000	€ 12.000	€ -	
Insurance		Insurance		€ 2.000	€ 2.000	€ 2.050	-€ 50	U
Total fixed cost		Total fixed cost			€ 14.000	€ 14.050	-€ 50	U
Total variable overhead costs		Total variable overhead costs			€ 74.000	€ 77.350	-€ 3.350	U

The variances reflect how actual cost compare to what they should have been at this activity level, not what was orginally budgeted. £89.000 − £74.000 = £15.000 is due to lower activity, while £3.350 is due to poor cost control.

Introduction

To improve financial performance and operational efficiency, La Compagnie du Froid should strengthen its planning, control, and pricing mechanisms by combining flexible budgets, variance analysis, and yield (dynamic) pricing.

1. Introduce flexible budgets to adjust for weather effects

In 2009, Spain experienced temperatures below average, which clearly reduced demand for ice-cream. However, the Spanish division was still evaluated against a budget that assumed 10% volume growth, even though a more realistic expectation under these weather conditions would have been closer to 5% growth. A flexible budget would adjust expected revenues and variable costs to this lower activity level. This would prevent management from interpreting weather-driven volume downturns as poor performance and would clearly separate uncontrollable volume effects from controllable cost issues.

2. Apply variance analysis to identify real drivers behind Spain's loss

The poor result in Spain was not really about weak cost control. It was mainly caused by machine breakdowns, which forced the division to rely on emergency imports from France with high transfer prices and transport costs. By using variance analysis, management could break the total deviation down into volume variances, driven by lower demand, and efficiency and spending variances, driven by these operational disruptions.

3. Consider dynamic pricing (connection to page 14)

La Compagnie du Froid operates with high fixed costs and strong seasonality, which in general makes yield management relevant. Prices could be increased during hot periods with high demand to improve contribution margins, and reduced during cooler periods to increase capacity utilisation. However, in the Spanish case, dynamic pricing would have limited impact, because the main competitor had already cut their prices to stimulate demand. The main problem was not insufficient demand, but inefficient production and high variable costs caused by breakdowns and emergency sourcing.

Conclusion

Overall, La Compagnie du Froid should prioritise better planning and control. Flexible budgets and variance analysis allow management to distinguish weather-driven volume effects from controllable efficiency and spending problems, ensuring attention is directed toward the real drivers of performance.

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Question 12: Performance measurement and reporting in segments

A. Explain the various types of responsibility centres and discuss the choice of performance measures for each. How do these measures align with the objectives of each centre?

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Cost centre

A cost centre is a business segment in which the manager has control over only costs, and not revenue or investment funds. These managers are evaluated by comparing their actual costs to what their costs should have been for the number of units produced in the period.

Objective: to minimise costs while maintaining required quality.
Performance measures: cost variances (direct material, direct labour) and efficiency measures (cost per unit) because they evaluate how efficiently managers use inputs, which is what they can influence.

Profit centre

A profit centre is a business segment where the manager has control over both cost and revenue. Since the managers have control on both cost and revenue, they are evaluated by comparing actual profit to budgeted profit for the period.

Objective: to maximise operating profit through pricing decisions, sales volume and cost management.
Performance measures: contribution margin, segment margin and operating profit because they capture the combined effect of revenue generation and cost control.

Investment centre

An investment centre is a segment of an organisation where the manager has control over cost, revenue and investments in operating assets. Investment centre managers are usually evaluated using return on investment (ROI) or residual income measures.

Objective: to maximise returns relative to the capital invested – not just profit.
Performance measures: ROI, RI and asset turnover because they relate profit to asset usage and discourage inefficient capital investments.

B. Explain the challenges that companies face when they try to measure the profitability of different segments. How can these challenges impact decision-making?

.

Omission of costs

Costs assigned to a segment should reflect the entire value chain – not only manufacturing. While external reporting includes only manufacturing costs in product costs, internal profitability analysis should also include upstream costs, such as R&D, and downstream costs, such as marketing. In practice, many firms exclude these upstream and downstream costs when assessing segment or product profitability. Since these expenses often represent a significant portion of a firm's expenses, omitting them can lead to serious undercosting.

Decision impact: Managers may continue to support products or segments that appear profitable but in reality destroy value once all value-chain costs are considered.

Using poor allocation methods

Costs are allocated using inappropriate allocation bases (revenue fx) which can misrepresent segment costs. For example when selling and admin costs are allocated based on revenue, segments with higher sales are charged a larger share of common costs, even if they do not actually cause those costs.

Decision impact: segment profitability can be over- or understated, which can ultimately lead to poor resource allocation and operational inefficiencies.

Assigning common costs to segments

Some costs are common to the entire firm and are not caused by any single segment. Assigning these common costs to individual segments can make otherwise profitable segments appear unprofitable.

Decision impact: Management may discontinue or downsize segments even though eliminating the segment would not eliminate the common costs.

Conclusion

Trace costs directly to segments where possible, allocate shared costs using appropriate drivers and incorporate all relevant up- and downstream costs.

C. Explain the responsibility centres and the operating segments of La Compagnie du Froid. Justify your classification.

Responsibility centres of La Compagnie du Froid

La Compagnie du Froid is organised around profit centres at the divisional level. The French division and the Spanish division are each responsible for their own revenues and costs and are evaluated based on divisional profit. Division managers therefore have control over pricing, production decisions, and cost management, which justifies their classification as profit centres rather than cost centres or investment centres. Investment decisions and overall strategy remain largely centralised at headquarters, so the divisions do not qualify as investment centres.

Operating segments of La Compagnie du Froid

The firm's operating segments correspond to its geographical divisions, namely France and Spain. These segments are distinguishable because they operate in different markets, face different demand conditions and weather patterns, and have separate financial performance that can be measured. The case explicitly compares the profitability and performance of the French and Spanish operations, which supports classifying them as separate operating segments.

D. Show and explain the methodology in the example provided (**handout at the exam**).

Most likely it will be something like this

	Total company	Products Division	Products Division
Revenue	£500,000	£300,000	£200,000
Less variable expenses:			
Variable cost of goods sold	£180,000	120,000	60,000
Other variable expenses	50,000	30,000	20,000
Total variable expenses	230,000	150,000	80,000
Contribution margin	270,000	150,000	120,000
Less traceable fixed expenses	170,000	90,000	80,000*
Divisional segment margin	100,000	£60,000	£40,000
Less common fixed expenses not traceable to the individual divisions	£85,000		
Operating profit	£15,000		

Segments defined as product lines of the Consumer Products Division

		Product line	
	Consumer Products Division	Clip art	Computer games
Revenue	£200,000	£75,000	£125,000
Less variable expenses:			
Variable cost of goods sold	60,000	20,000	40,000
Other variable expenses	£20,000	5,000	15,000
Total variable expenses	£80,000	£25,000	£55,000
Contribution margin	120,000	50,000	70,000
Less traceable fixed expenses	£70,000	30,000	£40,000
Product-line segment margin	50,000	£20,000	£30,000
Less common fixed expenses not traceable to the individual divisions	£10,000		
Divisional segment margin	£40,000		

Step 1: Subtract variable costs

Deduct variable cost of goods sold and other variable expenses from segment revenue to compute contribution margin. This shows how much the segment contributes toward fixed costs and profit.

Step 2: Subtract traceable fixed costs

Deduct only traceable fixed costs get the segment margin. This is the key measure of the segments profitability.

Step 3: Exclude common fixed costs from segment evaluation

Do not allocate common fixed costs to segments, since they are not traceable. Subtract them only at the company level to reach the firm's operating profit.

Step 4: Apply the same logic to sub-segments

When a segment is split into product lines, repeat the same steps to compute product-line segment margins for performance evaluation.

Super important to mention here:

If a segment can't cover its own traceable fixed costs, it is not viable.

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Question 13: Cost and pricing

A. Explain the relationship between cost and pricing in various circumstances.	B. Discuss the pros and cons of the different pricing methods. How do these methods impact business strategy and financial performance?	C. Define the concept of transfer prices and the different methods that can be used to determine them.	D. Using La Compagnie du Froid, explain how transfer pricing could be used to coordinate transactions. Discuss how the choice of transfer pricing method may influence segment performance evaluation.	E. Explain and discuss the example provided (**handout at the exam**). How does the example illustrate the application of cost and pricing concepts?
Cost-plus pricing Cost is the starting point for pricing. Firms calculate product cost and add a markup to determine the selling price. This works when firms have pricing power, like in monopolies. **Target costing** Price is set by the market, and cost becomes a constraint. Firms start with the market price, subtract desired profit, and design the product to meet the allowable cost. Since most costs are committed in the design phase, this embeds cost leadership early and is suited to highly competitive markets. "Target costing works when the market sets the tone". **Time and material pricing** Cost determines the price structure through hourly labour rates plus the actual costs of material used, often with a markup, instead of a fixed total price. It is common in service firms where market rates limit how high the markups can be set. **Revenue and yield management** Revenue and yield management sets prices based on demand, timing, and capacity, not full cost in the short run, as long as price exceeds variable cost. Yield compares actual revenue to maximum potential revenue. Low yield with high occupancy suggests underpricing, while unused capacity suggests prices are too high. The goal is to balance price and volume to maximise total revenue from fixed capacity.	**Cost-plus pricing** **Pros:** simple and ensures cost recovery. **Cons:** weak market focus, little cost pressure. **Impact:** supports stable margins but can over the longer term reduce competitiveness if market structure changes. **Target costing** **Pros:** market-driven and strong cost discipline early in the design phase. **Cons:** hard to achieve cost targets and attractive margins. **Impact:** aligns pricing with competitive strategy and long-term profitability. **Time and material pricing** **Pros:** flexible, low risk for seller due to markup. **Cons:** weak efficiency incentives (pushing the extra costs on to the buyer).. **Impact:** protect margins but reduces cost control. **Revenue and yield management** **Pros:** maximises revenue from fixed capacity by adjusting prices to demand. **Cons:** customer fairness issues to the timing. **Impact:** improves short-term profitability and capacity utilisation.	**The concept of transfer pricing** The price at which products or services are transferred between profit centers within the same firm. The aim is to set transfer prices to maximise profit for the firm as a whole – even though divisional manager are evaluated on their own profit, which transfer prices directly affects. **The different methods:** **Negotiated transfer price** The selling and purchasing divisions agree on a price themselves, preserving decentralisation, but negotiation can be time-consuming and vulnerable to dysfunctional manager behaviour. **Cost base transfer price** Base the cost on the cost incurred by the selling division using variable or absorption costing. Cost based pricing is simple, but it lacks incentives for cost control and create tension (internal: sell price = cost, while external: sell price = cost + markup). **Market transfer price** Setting the internal price equal to the external market price. This ensures the selling division are compensated and it allows the buying division to compare internal sourcing with external options, which aligns division decisions with corporate efficiency. However, difficulties occur when the selling division has idle capacity = risk sub-optimisation.	**Transfer pricing to coordinate transactions** In the case the Spanish division experienced capacity shortages due to machine problems and unusually low temperatures, and therefore had to import ice cream from the French division. headquarters imposed an absorption cost plan plus 5% markup transfer price on shipments from France to Spain. In this way, transfer pricing coordinated internal trade and ensured continued market supply in Spain. **Choice of transfer pricing** **Negotiated transfer price** A negotiated transfer price would improve segment performance evaluation by allowing the price to reflect temporary conditions, such as Spain's capacity problems and France's spare capacity. **Cost base transfer price** In the case, a cost-based, cost-plus transfer price with a 5% markup shifted profit from Spain to France, making Spain appear less efficient even though its results were driven by machine failures and weather, not managerial performance. **Market transfer price** A market-based transfer price would evaluate Spain as if it were buying externally, providing a more objective benchmark, but could be unfair if Spain had no realistic alternative suppliers (Spain losing profit).	

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