



# C9: Accounting and Finance Course

Module 4



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# Contents

<b>Module overview</b>	<b>1</b>
Welcome to Module 4.....	1
<b>Unit 8</b>	<b>3</b>
Segment reporting and decentralisation.....	3
Terminology.....	3
Activity 4.1 .....	16
Activity 4.2 .....	16
Unit summary .....	18
<b>Unit 9</b>	<b>19</b>
Transfer pricing.....	19
Terminology.....	19
Activity 4.3 .....	31
Activity 4.4 .....	31
Unit summary .....	33
<b>Unit 10</b>	<b>34</b>
Balanced scorecard .....	34
Terminology.....	34
Activity 4.5 .....	40
Activity 4.6 .....	41
Unit summary .....	42
<b>References</b>	<b>43</b>
<b>Activity feedback</b>	<b>44</b>
Activity 4.1, 4.3, 4.5 .....	44
Activity 4.2 .....	44
Activity 4.4 .....	45
Activity 4.6 .....	46
<b>Assignment 1</b>	<b>49</b>
Question 1 .....	51
Question 2 .....	52
Question 3 .....	53
Question 4 .....	54
Question 5 .....	55
Question 6 .....	56

Question 7 ..... 57  
Question 8 ..... 58



# Module overview

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## Welcome to Module 4

This module is designed to enhance your knowledge of management accounting techniques. In particular you will be introduced to two aspects of reporting, first how organisations deal with segmental or divisional reporting and secondly a discussion on the Balanced Scorecard. The module also discusses one particular aspect of segmental or divisional trading, and that is the setting of transfer prices.

Opportunities will be given throughout the course for you to select, calculate and make appropriate decisions using these concepts. The ultimate objective is for you to identify the correct data to make business decisions.

Upon completion of Module 4 you will be able to:



### Outcomes

- *Demonstrate* knowledge and understanding of the issues surrounding segmental or divisional reporting.
- *Demonstrate* knowledge and understanding of the need for transfer pricing, the various methodologies, and the additional complication of multi-national divisions.
- *Demonstrate* knowledge and understanding of the philosophy of the Balanced Scorecard, its contents, how to design one, and the associated implementation issues.



## Unit 8

### Segment reporting and decentralisation

#### Introduction

This unit is intended to provide students with an introduction to the structures of organisations and how to effectively manage segmental or divisional reporting. In particular this unit will discuss the differences between centralised and decentralised decision-making; the various categories of accountability and the ways segments or divisions can be measured. The unit comprises:

- Managing decentralisation
- Responsibility centres
- Segment reporting

Upon completion of this unit you will be able to:



#### Outcomes

- *Explain* the difference between a centralised and decentralised organisation.
- *Describe* the advantages of both a centralised and decentralised organisation.
- *Understand* the differences between the categories of responsibility centre.
- *Explain* segment margin.
- *Calculate* return on investment and residual income.

### Terminology



#### Terminology

Cost centre:	A business segment whose manager has control over cost but has no control over revenue or investments in operating assets.
Decentralised organisation:	An organisation in which decision-making authority is not confined to a few top executives but rather is spread throughout the organisation.
Investment centre:	A business segment whose manager has control over cost, revenue and investments in operating assets.



Profit centre:	A business segment whose manager has control over cost and revenue but has no control over investments in operating assets.
Residual income:	The net operating income that an investment centre earns above the minimum required return on its operating assets.
Return on investment:	Net operating income divided by average operating assets.
Segment:	Any part or activity of an organisation about which managers seek cost, revenue or profit data.
Segment margin:	A segment's contribution margin less its traceable fixed costs. It represents the margin available after a segment has covered all of its own traceable costs.

## Managing decentralisation

Organisations are structured in a variety of ways, dependent on their objectives and culture. The structure of an organisation will determine the manner in which it operates and its performance. Structure allows the responsibilities for different functions and processes to be clearly allocated to different departments and employees.

The wrong organisational structure will hinder the success of the business. Organisational structures should aim to maximise the efficiency and success of the organisation. An effective organisational structure will facilitate working relationships between various sections of the organisation. It will retain order and command while promoting flexibility and creativity.

Internal factors such as size, product and skills of the workforce influence the organisational structure. As a business expands the chain of command will lengthen and the spans of control will widen.

The term **span of control** is used to describe the number of employees each manager or supervisor is responsible for. The span of control is said to be wide if a superior is in charge of many employees and narrow if the superior is in charge of a few employees.

In looking at organisational structures we will concentrate on a centralised structure versus a decentralised structure.

### Centralised versus decentralised

In a centralised organisation, the head office (or a few senior managers) will retain the major responsibilities and powers. Conversely, decentralised organisations will spread responsibility for specific decisions across various outlets and lower level managers, including

branches or units located away from head office or headquarters. An example of a decentralised structure is the supermarket chain, Tesco. Each store of Tesco has a store manager who can make certain decisions concerning their store. The store manager is responsible to a regional manager who in turn is responsible to a head office manager.

Organisations may also decide that a combination of centralisation and decentralisation is more effective. For example functions such as accounting and purchasing may be centralised to save costs. Alternatively, tasks such as recruitment may be decentralised as units away from head office may have staffing needs specific only to their part of the organisation.

Certain organisations implement **vertical decentralisation**, which means that they have handed the power to make certain decisions down the hierarchy of their organisation. Vertical decentralisation increases the input that people at the bottom of the organisation chart have in decision-making.

**Horizontal decentralisation** spreads responsibility across the organisation. A good example of this is the implementation of new technology across the whole business. This implementation will be the sole responsibility of technology specialists.

### Advantages of centralisation

- Senior managers enjoy greater control over the organisation.
- The use of standardised procedures can result in cost savings.
- Decisions can be made to benefit the organisation as a whole. However, a decision made by a department manager may benefit their department, but disadvantage other departments.
- The organisation can benefit from the decision-making of experienced senior managers.
- In uncertain times the organisation will need strong leadership and to pull in the same direction. It is believed that strong leadership is often best given from above.

### Advantages of decentralisation

- Senior managers have time to concentrate on the most important decisions as the other decisions can be undertaken by people down the organisation structure.
- Decision-making is a form of empowerment. Empowerment can increase motivation and therefore mean that staff output increases.
- People lower down the chain have a greater understanding of the environment they work in and the people (customers and colleagues) that they interact with. This knowledge, skills and experience may enable them to make more effective decisions than senior managers.



- Empowerment will enable departments and their employees to respond faster to changes and new challenges whereas it may take senior managers longer to appreciate that business needs have changed.
- Empowerment makes it easier for people to accept and make a success of more responsibility.

## Decentralised structures

Today, many organisations are decentralising because their operations are becoming more complex and they are establishing operations overseas. Complexity and geography make operations more difficult to control. The solution is to decentralise and make managers of business units responsible for a range of decisions previously considered by the head office.

There are three broad categories of decentralised structure:

1. **Functional.** Business units are segregated by such functions as research and development, sales and marketing, finance and administration, and production. With the exception of sales and marketing, these business units usually operate as cost centres (see below).
2. **Business unit or divisional.** Business units are usually segregated by geographic region or product group. Usually they operate as either investment or profit centres (see below).
3. **Matrix.** Business units have dual responsibilities. The manager of a particular function, such as a marketing manager, may be jointly responsible for various projects along with, for example, a production manager.

Reference is made in the above categories to cost centres and investment or profit centres. These will be discussed in more detail in the Responsibility Centres section at the end of this module.

## Responsibility centres

In the preceding section we categorised a decentralised organisation as either functional, divisional or a matrix. For a manager operating within any of these categories they will be held accountable for the resources under their control and the outputs to meet the overall objectives of the organisation.

The level of accountability will depend upon the type of business unit and the resources within the control of the manager. Broadly, the responsibility centres can be categorised as follows:

### Cost centre

A cost centre is any department, division or unit of an organisation in which the manager is accountable for costs only. Examples include personnel, research and development and production departments. Cost

centre managers are responsible for total costs allocated to their departments. For personnel departments, this is likely to include wages and training for personnel staff, legal advice, contract preparation, and external counselling for employees.

## Revenue centre

A revenue centre is any department, division or unit of an organisation where the manager is accountable for revenue only. Sales and marketing departments are often treated as revenue centres and their managers are evaluated by their ability to generate sales revenue.

## Profit centre

A profit centre is any department, division or unit of an organisation where the manager is accountable for revenues and costs. Profit centre managers are responsible for the profit of their divisions.

Profit centre operating revenues can be from two sources:

1. sales to external parties (external sales), or
2. sales to other divisions (internal transfers).

We will discuss internal transfers in Unit 9 on transfer pricing

## Investment centre

An investment centre is any department, division or unit of an organisation in which the manager is accountable for revenues, costs and the investment in the unit. Investment centre managers are responsible for earning an adequate return on the capital employed in their investment centres.

The following table summarises the key responsibilities for each of the above centres.

	Responsibility for costs?	Responsibility for revenues?	Responsibility for investment funds?
Cost centre	Yes	No	No
Revenue centre	No	Yes	No
Profit centre	Yes	Yes	No
Investment centre	Yes	Yes	Yes

*Figure 1*

## Segment reporting

In this section we will look first at how to evaluate the profitability of a segment (or business unit). Second, we will look at other performance measures that are used to evaluate a segment (or business unit).



## Segment profitability

A different kind of income statement is required for evaluating the performance of a profit or investment centre. This income statement should emphasise the segment rather than the performance of the company as a whole. A contribution margin format income statement is used to evaluate the performance of different segments.

You will recall that in a contribution margin format income statement, cost of goods sold consists only of the variable manufacturing costs. This point has been discussed in detail in the cost volume profit (CVP) relationship section in Module 2. To prepare an income statement for a particular segment, the variable costs are deducted from the sales revenue to arrive at the contribution margin. Fixed costs are broken down further into traceable and common fixed costs. Traceable fixed costs are assigned to the segments but non-traceable or common fixed costs are not assigned to segments.

### Segment margin

The segment margin is obtained by deducting the traceable fixed costs of a segment from contribution margin. It represents the margin that is available after a segment has covered all of its own costs. The segment margin is the best gauge of the long-run profitability of a segment, since it includes only those costs that are caused by the segment. If a segment cannot cover its own costs, then that segment probably should not be retained (unless it has an important role for other segments or within the wider organisation).

From a decision-making point of view, the segment margin is most useful in major decisions that affect capacity such as dropping a segment. By contrast, the contribution margin is most useful in decisions relating to short-run changes in volume, such as pricing special orders that involve using existing capacity.





## Case study/example

As an example, an extract of a segmented report is shown below. In this report, segments have been defined as divisions. The report also has a column of total company performance for the period. We can see that divisional segment margin is \$60,000 for the Business Products Division and \$40,000 for the Consumer Products Division. This report is very useful for the company's divisional managers. They may want to know how much each of their divisions is contributing to the company's profit.

	Total company	Divisions	
		Business products division	Consumer products division
Sales	\$500,000	\$300,000	\$200,000
<u>Less: Variable expenses:</u>	-----	-----	-----
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	-----	-----	-----
Less traceable fixed expenses	270,000	150,000	120,000
Divisional segment margin	170,000	90,000	80,000
<u>Less common fixed expenses not traceable to the individual divisions</u>	-----	-----	-----
	100,000	\$60,000	\$40,000
	85,000	=====	=====
	-----		
Net operating income	\$15,000		

*Figure 2*

So we can see in the above example that the total company performance can be broken down into the two main divisions. For each division we can then establish the contribution margin and from that we deduct fixed costs directly attributable to the respective divisions. This gives us a divisional segment margin.

Having established the performance of each division, it is then possible to further analyse each division. Segmented income statements can be prepared for activities at many levels in a company. To provide more information to the company's divisional managers the divisions can be further segmented, for example, according to their major product lines, as follows in Figure 3.



## Case Study/Example

From the previous example in Figure 2 we can further analyse the consumer products division by its product lines, which are consumables and printers. This concept is illustrated as follows:

	Consumer Products Division	Product line	
		Consumables	Printers
Sales	\$200,000	\$75,000	\$125,000
<u>Less: variable expenses:</u>	-----	-----	-----
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 product line	*10,000	=====	=====
	-----		
Divisional segment margin	\$40,000		
	=====		

Figure 3

**\*Total traceable cost of \$80,000 for the consumer products division** includes \$10,000 of the divisional manager's salary. This cost now is a common fixed cost for consumables and printers because neither of these products is solely responsible for this salary.

So we can see in the above example that the consumer products division performance can be broken down into the two main product lines. For each product line we can then establish the contribution margin and from that we deduct fixed costs that are directly attributable to the respective product line. This gives us a product line segment margin.

We can also take this analysis one stage further. We can segment each of the product lines according to how they are sold, for example in retail stores or by catalogue sales.



Case study/example

From the previous example in Figure 3 we can further analyse the printer product line by segments defined as sales channels, being retail stores and catalogue sales. This concept is illustrated as follows:

	Printers	Sales channels	
		Retail stores	Catalogue sales
Sales	\$125,000	\$100,000	\$25,000
<u>Less: variable expenses:</u>	-----	-----	-----
Variable cost of goods sold	40,000	32,000	8,000
Other variable expenses	15,000	5,000	10,000
	-----	-----	-----
Total variable expenses	55,000	37,000	18,000
	-----	-----	-----
Contribution margin	70,000	63,000	7,000
Less traceable fixed expenses	25,000	15,000	10,000
	-----	-----	-----
Sales channel segment margin	\$45,000	\$48,000	(\$3,000)
Less common fixed expenses not traceable to the individual sales channel	15,000	=====	=====
	-----		
Product line segment margin	\$30,000		
	=====		

Figure 4

We can see in the above example that the printer product line performance can be broken down into the two main sales channels. For each sales channel we can then establish the contribution margin and from that we deduct fixed costs that are directly attributable to the respective sales channel. This gives us a sales channel segment margin.

The manager responsible for this product should be concerned at the performance of the catalogue sales channel because it is producing an overall loss. This should be subject to further investigation to establish if the performance can be improved by increasing sales, decreasing costs or a combination of both.

So, in the above example we have broken-down the results of the company originally from the division to the product line to the sales channel.

Substantial benefits are derived from a series of margin statements such as those above. By carefully examining trends and results in each segment, a manager is able to gain considerable insight into the company's operations viewed from many different angles. In the above example we were able to view the total performance, then by division, then by product line and then by sales channel.



Also, advanced computer-based information systems are making it easier and easier to construct such statements and to keep them continuously current.

There is, however, one significant issue of using segment (or divisional) margin as a measure of performance and that is that it fails to account for the size of the segment (division). This measure is not suitable for comparing performance across segments of different sizes. Segment income is most meaningful as a performance measure when compared to the same segment in earlier periods, or to budgeted income for the segment.

We will now consider other measures of segmental performance.

## Other measures of segment performance

In addition to the segment margin we can also look at two other measures of performance:

1. Return on investment (ROI)
2. Residual income (RI)

### Return on investment

Return on investment (ROI) is calculated as:

$$\text{Return on investment} = \frac{\text{Segment margin}}{\text{Segment investment}}$$

#### *Figure 5*

The same issues arise in determining the numerator (segment margin) in ROI as arise in the previous section with respect to deriving segment margin. As regards the denominator (segment investment), senior management must decide whether and how to allocate shared assets among divisions, such as service departments at the corporate level, or shared manufacturing facilities. Also, management must decide how to value the capital assets that comprise the division's investment.

These assets can be valued at:

- their gross book value (the acquisition cost),
- their net book value (usually the acquisition cost minus accumulated depreciation expense to date), or
- less often, some other valuation technique such as replacement cost, net realisable value or fair market value.

The calculation of the numerator should be consistent with the choice of valuation technique in the denominator. For example, if divisional investment is calculated using gross book value, then divisional margin in the numerator should not be reduced by depreciation expense.

One advantage of using gross book value instead of net book value in the ROI calculation is that net book value can discourage divisional managers from replacing old equipment, even if the new equipment would be more efficient and would increase the profits of the division. This dysfunctional managerial incentive occurs because if the existing equipment is fully depreciated, but is still functional, its replacement can reduce the division's ROI by lowering the numerator (due to increased depreciation expense) and increasing the denominator (because fully depreciated assets have a net book value of zero).

ROI can be broken down into the following two components:

$$\text{ROI} = \frac{\text{Segment margin}}{\text{Segment investment}} = \frac{\text{Segment margin}}{\text{Segment revenue}} \times \frac{\text{Segment revenue}}{\text{Segment investment}}$$

The first component on the right-hand side is called the **return on sales** (ROS). It is also called the operating profit percentage. This ratio measures the amount of each dollar of revenue that "makes its way" to the bottom line. ROS is often an important measure of the efficiency of the division, and of the divisional manager's ability to contain operating expenses.

The second component on the right-hand side is called the **asset turnover ratio** or the investment turnover ratio. This ratio measures how effectively management uses the division's assets to generate revenues.

Breaking ROI into these two components often provides more useful information than looking at ROI alone, and it is an example of the type of financial ratio analysis that equity analysts conduct in evaluating company-wide performance. In this context, two common specifications for the denominator in the ROI calculation are assets and equity. The resulting ratios are called return on assets (ROA) and return on equity (ROE).

At the divisional level, ROI takes account of the size of the division, and hence, it is well-suited for comparing divisions of different sizes. However, ROI can discourage managers from making some investments that shareholders would favour. For example, if a divisional manager is evaluated on ROI, and if the division is currently earning an ROI in excess of the company's cost of capital, then the manager would prefer to reject an additional investment opportunity that would earn a return above the cost of capital but below the division's current ROI. The new investment opportunity would lower the division's ROI, which is not in the manager's best interests. However, because the investment opportunity provides a return above the cost of capital, shareholders would favour it.



## Case study/example

Consider the following example:

Division A is an investment centre in a company with a cost of capital of 15 per cent, that is, the company is prepared to accept relevant projects that give a return above 15 per cent. Division A has total assets of \$12,000,000 and net profit of \$3,000,000. The manager of Division A is considering undertaking a project that would earn net profit of \$800,000 and cost \$4,000,000. Therefore will the manager of Division A accept this project if the manager's performance is based on ROI?

The following before and after tables give an indication of whether the manager should invest:

	Without investment	With investment	Investment only
Profit	3,000,000	3,800,000	800,000
Total assets	12,000,000	16,000,000	4,000,000
ROI	25.00%	23.75%	20.00%

Figure 6

Because the Division's ROI drops from 25 per cent to 23.75 per cent, the manager decides not to invest. And yet, the return is greater than the cost of capital of 15 per cent so the investment would increase shareholder value. This highlights the potentially serious behavioural problem with ROI as a performance measure and as a measure for evaluating capital projects in a decentralised organisational structure. In other words, this is an example of narrow-minded behaviour.



## Case study/example

Let's now consider the decision of the manager of Division A above on the whole company. The results for the other two Divisions, B and C of the company are:

	B	C
Profit	2,000	3,000
Total assets	10,000	20,000
ROI	20%	15%

Figure 7

Let's now see the effect of the Division A manager's decision on the whole company. The organisation as a whole may have been better off by investing in the project. Consider the following table.

	Division B	Division C	Division A Without Investment	Division A With Investment	Company Without Investment	Company With Investment
Profit	\$2,000	\$3,000	\$3,000	\$3,800	\$8,000	\$8,800
Total assets	\$10,000	\$20,000	\$12,000	\$16,000	\$42,000	\$46,000
ROI	20.00%	15.00%	25.00%	23.75%	19.05%	19.13%

Figure 8

On a company-wide analysis, the project should have been undertaken because the company ROI would have increased from 19.05 per cent to 19.13 per cent.

### Residual income

Residual income (RI) is often used instead of ROI because of the behavioural problems of ROI. RI is, however, subject to the same profit and investment measurement issues as ROI. RI is calculated as follows:

- Net profit – [capital charge × total assets]

The type of capital charge used varies. Organisations sometimes use:

- the firm's Weighted Average Cost of Capital (WACC),
- the average ROI over a period, or
- the current borrowing rate for the firm.

If managers are evaluated on RI, the behavioural problems are lessened, that is, goal incongruent situations are less likely. Providing a project earns more than the amount of the capital charge, the project goes ahead.

So using the same information for the Division A example above, and if the company's cost of capital is 15 per cent, division A would accept the project because the RI is:

$$\begin{aligned}
 & \$800,000 - (0.15 \times \$4,000,000) \\
 & = \$800,000 - \$600,000 \\
 & = +\$200,000
 \end{aligned}$$

By accepting the project, the division manager would have added \$200,000 of residual income. The project would be accepted because the RI focuses on the absolute magnitude and not on a ratio number like ROI. Any positive RI should be accepted.

Many companies that use residual income at the divisional level do so because management believes that residual income aligns incentives of divisional managers with incentives of senior management and shareholders.

The objective with RI is to maximise its value. However, RI is a short-term measure (like ROI) that encourages actions beneficial in the short term and costly in the long term. For example, reducing costs increases



RI (and ROI) by increasing margin (or profit) but the long-term effects could be severe.

One type of residual income calculation is called Economic Value Added (EVA). EVA was developed by the consulting firm of Stern Stewart & Co., and is a registered trademark of that firm. The calculation of EVA includes a deduction for the cost of capital, and also adjusts accounting profit to more accurately reflect the economic effect of transactions and the economic value of assets and liabilities. While the EVA calculation is similar to RI, according to Stern Stewart dozens of adjustments to earnings and balance sheets – in areas like R&D, inventory, costing, depreciation and amortisation of goodwill – must be made before the calculation of standard accounting profit can be used to calculate EVA.

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## Activity 4.1



### Activity

1. For the organisation that you are involved with, obtain or prepare an organisation chart that highlights the key areas of responsibility.
2. In your opinion would you describe your organisation as centralised or decentralised? Explain your answer.

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## Activity 4.2



### Activity

1. Forsyth Limited has two major business segments-retail and wholesale. In March, the retail business segment had sales revenues of \$500,000, variable expenses of \$245,000, and traceable fixed expenses of \$90,000. During the same month, the wholesale business segment had sales revenues of \$240,000, variable expenses of \$101,000, and traceable fixed expenses of \$38,000. Common fixed expenses totalled \$152,000 and were allocated as follows: \$79,000 to the retail business segment and \$73,000 to the wholesale business segment.
  - a. Prepare a segmented income statement in the contribution format for the company.
2. Watford Limited had net operating income of \$150,000 and average operating assets of \$500,000. The company requires a return on investment of 19 per cent.
  - a. Calculate the company's current return on investment and residual income.
  - b. The company is investigating an investment of \$400,000 in project that will generate annual net operating income of \$78,000. What is the return on investment and residual income of the project? Should the company invest in this project?





3. Old Limited uses residual income to evaluate the performance of its divisions. The minimum required rate of return for performance evaluation purposes is 16 per cent. The Games Division had average operating assets of \$470,000 and net operating income of \$72,900 in September.
  - a. What was the Games Division's residual income in September?
  
4. The Consumer Products Division of Geraldo Limited had average operating assets of \$300,000 and net operating income of \$46,900 in March. The minimum required rate of return for performance evaluation purposes is 16 per cent.
  - a. What was the Consumer Products Division's minimum required return in March?
  - b. What was the Consumer Products Division's residual income in March?

## Unit summary



### Summary

In this unit you learned that:

- Organisations can be managed closely from the centre or autonomy can be given to decentralised segments or divisions for decision-making.
- There are different types of responsibility centres which are classified by the resources under control.
- There are generally three approaches to assessing segmental performance – margin, return on investment and residual income.

## Unit 9

### Transfer pricing

#### Introduction

This unit is intended to introduce the issue of transfer pricing. In particular this unit will discuss why the setting of transfer prices between segments or divisions is not an easy task and can lead to decisions that do not result in profit maximisation for the whole organisation. The topic of transfer pricing is further complicated when organisations transfer goods or services between segments or divisions in different countries.

The unit comprises:

- The need for transfer pricing
- Issues in multi-national organisations

Upon completion of this unit you will be able to:

- *Explain* the need for transfer pricing.
- *Describe* situations that arise that lead to less profits overall for an organisation.
- *Describe* the different methods of arriving at a transfer price.
- *Explain* the objectives of transfer pricing.
- *Determine* the range, if any, within which a negotiated transfer price should fall.
- *Explain* the effects of different country tax rates on transfer pricing decisions.



#### Outcomes

### Terminology



#### Terminology

Market price:	The price charged for an item on the open market.
Negotiated transfer price:	A transfer price agreed on between the buying and selling divisions.
Range of acceptable transfer prices:	The range of transfer prices within which the profits of both the selling and buying division would increase as a result of a transfer.
Transfer price:	The price charged when one division or segment provides goods or services to another division or



segment of an organisation.

## The need for transfer pricing

In large multi-divisional companies, products or services are sometimes used or transferred internally between divisions before the final product or service is sold externally to customers. Where this internal transfer occurs then an acceptable price needs to be developed and agreed on between the divisions. The manager of the transferring division would normally want to have the highest price possible to maximise the margin, ROI or RI, whereas the manager of the receiving division would normally want to have the lowest cost possible for the same reasons as the transferring manager.

So there is a need to set a price for these goods or services and this is called a *transfer price*.

### Definition

A transfer price is the price charged for transfer of goods or services between divisions of an organisation. Transfer prices are an essential feature of decentralised organisations where there are movements of products or services between profit and investment centres. The transfer price is reported as either revenue of the supplier division or a cost of the receiver division, or both. It should be noted that transfer pricing does not only apply to manufactured goods. As stated in the definition, it can also apply to services. A research and development department that assists in improving methods of manufacture, and a repair and service department of a motor vehicle sales dealership are two examples.

### Objectives of transfer pricing

Transfer prices should:

- provide financial data that allows fair measures of performance,
- promote goal congruence, and
- maintain decentralised managers' autonomy.

Except for very specific situations, all three of these desirable properties of a transfer pricing system are rarely achieved. The types of decisions based on transfer prices are related to output, evaluation and allocation:

- **Output.** How much do we produce? How many units should we sell internally and how many externally? How many units should we buy internally and how many externally?
- **Evaluation.** How well is the division doing and how well is the manager performing? Should the organisation expand, contract or change its product line?
- **Allocation.** How much capital should the organisation allocate to this division?

So far we have concentrated on the performance measurement aspect of transfer prices. However, we also need to consider other elements, in particular, output because it is closely related to goal congruence. Transfer pricing is not easily resolved, usually involving a balancing act between various internal and external forces. However, the problems that arise are not the direct result of transfer pricing, but of the decision to decentralise the organisation into profit and investment centres. The following questions best summarise the transfer pricing issues facing decentralised firms.

- Does transfer pricing fairly measure the performance of the divisional manager?
- Does transfer pricing maintain the division's autonomy?
- Does transfer pricing lead to divisional decisions that satisfy the requirement of global profit maximisation (a goal congruence issue)?

These questions will be considered as we examine each transfer pricing method.

## Problems with transfer pricing

When organisations view their internal activities as part of a continuous chain, where value is created at one link and then passed on to the next, there is often an attempt to define each link as an independent strategic business unit (SBU). Once defined, each internal SBU could be structured so that its output, which becomes the input of the next unit upstream, is transferred at a price that includes an internal profit. The profit may be a small percentage structured to be a minor buffer against potential cost fluctuations, or it could be carefully calculated to equate the transfer price with that charged by an external provider.

The incorporation of profits into transfer prices may make the final price charged to the external consumer higher than that of competitors and create pressures on the marketing and sales functions. In extreme cases it may even result in the loss of sales and, ultimately, market share.

A further problem that may arise is when underlying cost calculations are not based on sound methods or the costs are inflated through inefficiencies. This results in the transfer price being inflated, with resulting distortions all the way up the chain. These distortions may then have an impact on market share through loss of sales arising out of non-competitive pricing.

Distortions can also result in the under-pricing of products, through transfer prices that have been understated both through cost distortions and incorrect perceptions of the competitive pricing structures at each level in the chain.

A decentralised organisation has to decide which transfer pricing method will account for the inter-divisional transfers of products/services and



satisfy the three behavioural requirements mentioned in the previous section.

## Transfer pricing methods

Organisations choose from three basic approaches to transfer pricing:

1. market-based,
2. cost-based, and
3. negotiated.

### Market-based

This is the price at which the product or service could be purchased by the receiving department in the external market place. As a general rule, market price is the best possible transfer price because it cannot be manipulated as easily as the other approaches. Both divisions can make rational decisions as if they are trading in the market place autonomously. Performance measurement is not influenced by internal issues. However, the conditions under which this transfer price is relevant are rare. For example, it is rare that a liquid market exists for a partly completed product.

Market-based transfer prices have the following advantages:

- Internal policy decisions don't significantly affect the evaluation of the division and management.
- Divisions can make independent decisions. Optimal decisions in the best interest of the firm are most likely to be made without significant central office intervention.
- Closure of the production division will not affect the selling division's profit.

As stated above, the conditions for market-based transfer prices are rarely found in practice. With market-based transfer prices, the assumption is that there is a perfect market for the intermediate good, the conditions for which are:

- no restrictions on the mix of internal versus external sales (both divisions are free to deal both internally and externally at any volume they desire);
- no restrictions on total volume produced or sold;
- no effect on the market price by level of divisional trading; and
- no taxes, transportation or transaction costs.

Given the above conditions, all three questions raised in the "Objectives of transfer pricing" section will be met. Unfortunately, these conditions are difficult to satisfy as many factors can violate the perfect market assumption. For example, excess or shortage of capacity for the intermediate good may exist in the market. In this situation, the selling division may be selling externally, while the buying division is unable to

obtain all its requirements externally. The result may be that total company profits are not maximised, because the buying division's output is being restricted. If the central management decides to instruct one division to deal with the other, divisional autonomy is compromised. They must decide whether the benefits of striving for optimisation of company-wide profits outweigh the negative effects of not maintaining divisional independence.

Market-based transfer prices have the following disadvantages:

- The external market may be imperfect. The quoted market price may not hold for different volume levels of the product if the price varies considerably due to volume-based incentives.
- Even in a perfect market, the price may be influenced by unusual or one-off factors such as changing economic conditions or legislation influencing demand levels for short periods.
- In buying divisions with excess spare capacity, a market price based transfer price might act as a disincentive to the buying division because of the cost. The result may be that excess productive capacity is not used. However, a transfer price based on variable costs may induce the buying division to use the excess capacity and buy the intermediate product at that price. Company-wide profits may increase as a result.

Market prices do provide the ideal transfer price, but only under almost perfect circumstances which are rarely found in practice.

### Cost-based

There are two different cost-based methods:

1. **Variable cost** – either marginal or plus a mark-up.
2. **Full cost** – normal or plus a mark-up.

**Variable cost.** A transfer price set equal to the variable cost of the transferring division often produces very good economic decisions for the company as a whole. However, a transfer price equal to marginal cost has certain drawbacks:

- The transferring division will make a loss as its fixed costs cannot be covered. This is de-motivating for the management of the transferring division.
- Performance measurement is distorted. The transferring division will always make losses while the acquiring division gets a relatively cheap price as it is not charged enough to cover all costs of manufacture. This effect can also distort investment decisions made in each division. For example, the acquiring division will enjoy inflated profits.
- There is little incentive for the transferring division to be efficient if all marginal costs are covered by the transfer price. Inefficiencies in the transferring division will be passed up to the acquiring division. Therefore, if marginal cost is going to be used



as a transfer price, this should be at least the standard marginal cost, so that efficiencies and inefficiencies stay within the divisions responsible for them.

The variable cost method is little used in practice.

**Full cost.** A transfer price set at full cost (or better, full standard cost) is slightly more satisfactory for the transferring division as it means that it can aim to break even. The major disadvantage, however, is that it can lead to dysfunctional decisions because the acquiring division can make decisions that maximise its profits but which may not maximise group profits.

Head office could, of course, instruct the acquiring division to trade but then divisional autonomy is compromised and the acquiring division managers will resent being instructed which may make negative contributions which will impact on their reported performance.

The full cost-plus approach would increase the transfer price by adding a mark-up. This would now motivate the transferring division, as profits can be made there and may also allow profits to be made by the acquiring division. However, again this can lead to dysfunctional decisions as the final selling price falls.

Despite this method being widely used in practice, the full-cost method can lead to sub-optimal decision-making because application of one pricing rule can result in overpricing in the external market. Full cost may also provide departments with the incentive to accumulate costs.

Consider the following case:



#### Case study/example

Pembroke Limited has three divisions, A, B, and C, each of which operates as a profit centre. Head office has adopted a full-cost policy where the transfer price is set at full-cost plus 10 per cent.

Monthly head office expenses are \$12,000 and are allocated to the divisions equally.

So, what happens to this \$12,000 as it moves between divisions?

- When Division A transfers its intermediate product to Division B it will take the \$4,000, add 10 per cent to it and transfer \$4,400 (along with the other relevant costs) to Division B.
- Division B adds the \$4,400 to its own allocated \$4,000 and adds 10 per cent (10 per cent of \$8,400 = \$840), and transfers \$9,240 to Division C.
- Division C adds the \$9,240 to its own allocated \$4,000 and adds 10 per cent (10 per cent of \$13,240 = \$1,324) to arrive at a final external selling price of HK\$14,564.
- The result is that head office costs have been compounded at a rate of 21.4 per cent.



Management at Pembroke is puzzled as to why, despite its best efforts at cost reduction, competitors continually under-price the Pembroke organisation. It is not hard to see why!

A full cost-plus transfer pricing system has the following limitations:

- the allocation of fixed costs is arbitrary;
- pricing at full cost-plus implies a willingness to incorporate inefficiencies that may be passed on to the consumer. This may negate the operational controls used to evaluate divisional performance. The Pembroke example above illustrated this limitation; and
- the search for improved productivity and technology in the manufacturing division may be discouraged.

The following example illustrates the third limitation noted above:



#### Case study/example

Assume an organisation has a two division, full cost-plus transfer pricing situation with the following details:

- Mark-up = 10 per cent
- Full cost to manufacturing division (Division 1) = \$100
- Selling price of selling division (Division 2) = \$200
- Quantity sold/transferred (units) = 1,000
- Total selling costs of Division 2 = \$50
- The transfer price is therefore \$110  $[(1 + 10\%) \times \$100]$
- The profit of Division 2 is \$40,000  $[(\$200 - \$50 - \$110) \times 1,000]$
- The profit of Division 1 is \$10,000  $[(\$110 - \$100) \times 1,000]$
- Total company profit is \$50,000

If Division 1 discovered a breakthrough in the manufacturing process, which reduced its cost of manufacturing by half, other things being equal the new transfer price would be \$55  $[(1 + 10\%) \times \$50]$ .

In this situation the profit of Division 2 is \$95,000  $[(\$200 - \$50 - \$55) \times 1,000]$ .

The profit of Division 1 is \$5,000  $[(\$55 - \$50) \times 1,000]$ .

Total company profit is \$100,000.

The total company profit has increased by \$50,000.

All the benefit of \$50,000 has been passed onto the selling division, and the manufacturing division's profit has been halved. Why?

The reason is that the percentage mark-up for Division 1 is "fixed" at 10 per cent. Division 2, therefore, gets all the benefit of Division 1's cost-



reduction improvements. Division 2's mark-up is not fixed because it charges what the market can bear. It is likely that this will result in adverse motivational effects on Division 1.

In addition to loss of autonomy due to the central office imposed pricing method (evaluation of Division 1 by examining profit alone) is not a true reflection of that division's achievements.

An alternative may be to share the additional profit or change the mark-up percentage. However, this may be difficult in an organisation where the mark-up is centrally determined.

Globally optimal decisions will not be made under a full cost system when one pricing rule is universally adopted, as the above example illustrates.

Full cost-based methods are widely used in practice in which organisations base their price on standard full cost, so that any cost over-runs become the responsibility of the selling sub-unit. In addition the amount of the profit mark-up is negotiated by the two units, or at least is mediated by corporate head office. This makes the "standard full cost-plus profit" method, a viable practical basis for setting transfer prices.

### Negotiated price

Negotiated transfer prices are best used when a small, less-than-perfect external market exists for the intermediate product. Ideally, the negotiation process will decide on such minor adjustments to price as reduced freight, marketing and credit costs on internal sales. A second important factor is the sharing of all information between divisions. This should enable the negotiated price to be close to the opportunity cost of one or preferably both divisions. A third factor is that each divisional manager has the right to accept or reject the offer.

The most common criticism of negotiated transfer prices is that they will reflect the negotiating skills of management. The undesirable effect of this factor will vary indirectly with the existence of any external market. Therefore negotiating skills will be most influential when:

- divisions attempt to create an internal market for the good, thereby simulating an external market; or
- the selling division is producing custom-made products.

Negotiation of transfer prices satisfies the requirement for autonomy and will have positive behavioural consequences. An important factor in business is settlement of conflicts by negotiation. Installing a negotiated transfer pricing system may aid company-wide morale, not just divisional morale. Despite the positive autonomy advantages, performance may be significantly influenced by personalities and negotiating ability therefore making performance evaluation difficult. In addition, company-wide optimal decision-making is questionable without central office intervention.



### Case study/example

In this example we consider two divisions, X and Y, where X produces a product which Y requires for its production.

Division X makes a part that it sells to customers outside of the company. Data concerning this part appear below:

- Selling price to outside customers \$50
- Variable cost per unit \$30
- Total fixed costs \$400,000
- Capacity in units 25,000

Division Y of the same company would like to use the part manufactured by Division X in one of its products. Division Y currently purchases a similar part made by an outside company for \$49 per unit and would substitute the part made by Division X.

Division Y requires 5,000 units of the part each period. Division X can sell all of the units it makes to outside customers.

What is the lowest acceptable transfer price from the standpoint of the selling division?

The answer to this problem is related to the fact that Division X can sell all of its output to outside customers. So if it sells or transfers the output to Y then X loses the margin on its margin to the outside customers (this lost margin is an example of an opportunity cost).

So in this case, from the perspective of the selling division (X), profits would increase as a result of the transfer if, and only if:

- Transfer price > Variable cost + Opportunity cost.

The opportunity cost is the contribution margin on the lost sales, divided by the number of units transferred:

- Opportunity cost =  $[(\$50 - \$30) \times 5,000] \div 5,000 = \$20$
- Therefore, Transfer price >  $\$30 + \$20 = \$50$ .

In conclusion, all of the above discussion relates to the various transfer pricing alternatives and issues where divisions are situated in the same country. In the next section we extend the transfer pricing discussion to multi-national organisations that operate in two or more countries.

## Issues in multinational organisations

The rise of multinational organisations has generated a different range of issues and perspectives on transfer pricing. The international transfer price is the price that an organisation uses to transfer products or services between a business unit in one country and that in another country.



There are two major points to note in relation to international transfer pricing.

1. These transfers are not at arm's length.
2. In the absence of tax and tariff considerations, international transfer pricing raises the same issues that we have discussed so far.

## International tax considerations

The presence of different tax and tariff rates in different countries introduces another layer of complexity into transfer pricing.

Consider a company that manufactures products in Hong Kong that has a marginal tax rate of 16 per cent, and it sells those products in Australia, which has a marginal tax rate of, say, 30 per cent. Obviously this firm would like to locate most of its profits in Hong Kong, where the tax rate is the lowest. Therefore it will want to use the highest possible transfer price for the transaction.

For many firms, such tax considerations as these outweigh the other considerations in setting a transfer price, but may have dysfunctional behavioural effects. For example, the manager of the Australia sub-unit would be earning little or no profit and this may impact unfavourably on that person's behaviour. Nevertheless, the company may decide that this is the price that must be paid for minimising the firm's global taxes.

Taxation authorities around the world are aware of this potential behaviour and have taken steps to monitor and police it. The most important document relating to international transfer pricing is the Organisation for Economic Co-operation and Development (OECD) 1995 guidelines statement. In essence these guidelines suggest that, whenever possible, the transfer price should reflect underlying economic circumstances.



Case Study/Example

The following example illustrates the issue of international transfer pricing between countries with different income tax rates.

Hong Kong Global Limited (HKGL) is a Hong Kong company with a manufacturing plant in Thailand, and the company has been granted a 10-year tax break by the government of Thailand.

Relevant details regarding the company are as follows (HK Dollars):

- Unit manufacturing cost of product in Thailand: \$80
- Unit freight cost to ship to Hong Kong: \$20
- Selling price of product in Hong Kong: \$300
- Taxes in Thailand: 0%
- Income taxes in Hong Kong: 16%
- Tariff in Hong Kong: 0%
- Annual production and sales: 100,000 units

We will now consider two scenarios where we will consider the effect on overall after-tax company profit of two possible transfer pricing schemes:

- Scenario 1: Cost of production and freight (\$100)
- Scenario 2: Cost of production and freight plus 100% (\$200)

	Thailand		Hong Kong	
	Per unit	100,000 units	Per unit	100,000 units
Selling price	\$100	\$10,000,000	\$300	\$30,000,000
Cost (or transfer price)	<u>(\$100)</u>	<u>(\$10,000,000)</u>	<u>(\$100)</u>	<u>(\$10,000,000)</u>
Profit before tax	\$0	\$0	\$200	\$20,000,000
Income taxes (HK 16%)	<u>\$0</u>	<u>\$0</u>	<u>(\$32)</u>	<u>(\$3,200,000)</u>
Profit after tax	<u>\$0</u>	<u>\$0</u>	<u>\$168</u>	<u>\$16,800,000</u>

Figure 9: Scenario 1. Cost of production and freight (\$100)

	Thailand		Hong Kong	
	Per unit	100,000 units	Per unit	100,000 units
Selling price	\$200	\$20,000,000	\$300	\$30,000,000
Cost (or transfer price)	<u>(\$100)</u>	<u>(\$10,000,000)</u>	<u>(\$200)</u>	<u>(\$20,000,000)</u>
Profit before tax	\$100	\$10,000,000	\$100	\$10,000,000
Income taxes (HK 16%)	<u>\$0</u>	<u>\$0</u>	<u>(\$16)</u>	<u>(\$1,600,000)</u>
Profit after tax	<u>\$100</u>	<u>\$10,000,000</u>	<u>\$84</u>	<u>\$8,400,000</u>

Figure 10: Scenario 2. Cost of production and freight plus 100% (\$200)



The following is a summary of both methods:

Summary:	Cost	Cost plus 100%
Corporate taxes	\$3,200,000	\$1,600,000
Corporate profit after taxes	\$16,800,000	\$18,400,000

The above example is very simplistic, but shows that there are obvious ways to minimise corporate global taxes in the absence of income tax regulation preventing such arrangements.

There are limits to the extent to which companies can shift income in this manner. When a market price is available for the goods transferred, the taxing authorities will usually impose the market-based transfer price. When a market-based transfer price is not feasible, tax law specifies detailed and complicated rules that limit the extent to which companies can shift income out of the countries.

### Other regulatory issues

Transfer pricing sometimes becomes relevant in the context of other regulatory issues, including international trade disputes. For example, when tariffs are based on the value of goods imported, the transfer price of goods shipped from a manufacturing division in one country to a marketing division in another country can form the basis for the tariff.

As another example, in order to increase investment in their economies, developing nations sometimes restrict the extent to which multinational companies can repatriate profits. However, when product is transferred from manufacturing divisions located elsewhere into the developing nation for sale, the local marketing division can export funds to “pay” for the merchandise received.

As a final example, when nations accuse foreign companies of “dumping” product onto their markets, transfer pricing is often involved. Dumping refers to selling product below cost, and it generally violates international trade laws. Foreign companies frequently transfer product from manufacturing divisions in their home countries to marketing affiliates elsewhere, so that the determination of whether the company has dumped product depends on comparing the transfer price charged to the marketing affiliate with the upstream division’s cost of production.

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## Activity 4.3



### Activity

1. For the organisation that you are involved with, find out if products or services are transferred internally between segments or divisions.
2. If your organisation does transfer products or services internally, find out how the transfer price is established. Does this price enable a reasonable performance evaluation of both the transferring and receiving segments or divisions?

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## Activity 4.4



### Activity

1. Division A of Chopper Limited makes and sells a single product which is used by manufacturers of fork lift trucks. Presently it sells 12,000 units per year to outside customers at \$24 per unit. The annual capacity is 20,000 units and the variable cost to make each unit is \$16.

Division B of Chopper Limited would like to buy 10,000 units a year from Division A to use in its products. There would be no cost savings from transferring the units within the company rather than selling them on the outside market.

- a. What should be the lowest acceptable transfer price from the perspective of Division A?
2. Part W4 costs the East Division of Tyrone Limited \$26 to make—direct materials are \$10, direct labour is \$4, variable manufacturing overhead is \$9, and fixed manufacturing overhead is \$3. The East Division can sell all of Part W4 they can make to other companies for \$30. The West Division of Tyrone Limited can use part W4 in one of its products.
    - a. What is the lowest transfer price at which the East Division would be willing to sell part W4 to the West Division?
  3. The Pump Division of Thorn Limited produces pumps which it sells for \$20 each to outside customers. The Pump Division's cost per pump, based on normal volume of 500,000 units per period, is shown below:
    - Variable costs      \$12.00
    - Fixed costs          \$ 3.00
    - Total cost            \$15.00

Thorn has recently purchased a small company which makes automatic dishwashers. This new company is presently purchasing 100,000 pumps each year from another manufacturer. Since the Pump Division has a capacity of 600,000 pumps per year and is now selling only 500,000 pumps to outside customers, management would like the new Dishwasher Division to begin purchasing its pumps



internally. The Dishwasher Division is now paying \$20 per pump, less a 10 per cent quantity discount. The Pump Division could avoid \$1 per unit in variable costs on any sales to the Dishwasher Division.

- a. Treating each division as an independent profit centre, within what price range should the internal sales price fall?
  - b. Now assume that the Pump Division is selling 600,000 pumps per year to outside customers. Determine the appropriate transfer price.
4. Eastman Limited has a Parts Division that does work for other divisions in the company as well as for outside customers. The company's Machine Products Division has asked the Parts Division to provide it with 10,000 special parts each year. The special parts would require \$15.00 per unit in variable production costs.

The Machine Products Division has a bid from an outside supplier for the special parts at \$29.00 per unit. In order to have time and space to produce the special part, the Parts Division would have to cut back production of another part, the H5 that it presently is producing.

The H5 sells for \$32.00 per unit, and requires \$19.00 per unit in variable production costs. Packaging and shipping costs of the H5 are \$3.00 per unit. Packaging and shipping costs for the new special part would be only \$1.00 per unit. The Parts Division is now producing and selling 40,000 units of the H5 each year. Production and sales of the H5 would drop by 20 per cent if the new special part is produced for the Machine Products Division.

- a. What is the range of transfer prices within which both the divisions' profits would increase as a result of agreeing to the transfer of 10,000 special parts per year from the Parts Division to the Machine Products Division?
- b. Is it in the best interests of Eastman Limited for this transfer to take place? Explain.



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## Unit summary



### Summary

In this unit you learned that:

- The need for transfer pricing arises when segments or divisions use goods or services produced by another segment or division.
- There are different methodologies used to arrive at transfer prices.
- Individual country taxation rates further complicate transfer pricing decisions in multi-national organisations.



# Unit 10

## Balanced scorecard

### Introduction

This unit provides students with an introduction to an organisational measurement tool that attempts to incorporate both financial and non-financial measures. This tool is the balanced scorecard. This unit provides details of the four main perspectives of the balanced scorecard; how to use and construct one, and some of the issues that organisations have faced when attempting to implement a balanced scorecard.

The unit comprises:

- The purpose of a balanced scorecard
- The four perspectives of the balanced scorecard
- Applications of the scorecard and
- Implementation issues

Upon completion of this unit you will be able to:



Outcomes

- *Describe* the purpose of a balanced Scorecard.
- *Understand* how to use and construct a balanced scorecard.
- *Identify* and describe the four perspectives of the balanced scorecard.
- *Explain* the process for designing a balanced scorecard.
- *Describe* situations that lead to poor implementation of a balanced scorecard.

## Terminology



Terminology

**Balanced scorecard:** An integrated set of performance measures that are derived from and support an organisation's strategy.

## Purpose of a balanced scorecard

In the discussion so far in this module we have introduced various financial measures to track the performance of the organisation as well as segments or divisions within an organisation.

In this section we will look at a measurement tool that not only tracks financial measures but also non-financial measures and that is the balanced scorecard (BSC).

The BSC was established by two United States academics, Kaplan and Norton, in the mid-1990s. The BSC is now well-established as a performance measurement device. It is often lauded as a management approach that can lead a company or business unit to focus on achieving current financial results as well as creating future value through strategic activities. Kaplan and Norton argue that senior managers need this balanced approach because reliance on financial measures alone cannot motivate, predict or create future performance.

The BSC tracks performance from four perspectives:

- **Financial.** How do we look to shareholders?
- **Customers.** How do customers see us?
- **Internal processes.** What must we excel at?
- **Learning and growth.** Can we continue to improve and create value?

The BSC is often portrayed in the following illustration:

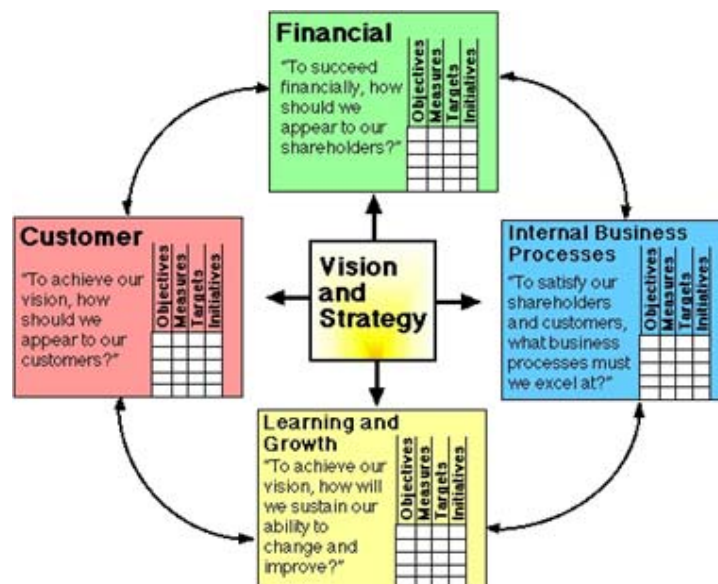


Figure 11 Source - Balanced Scorecard Institute



Kaplan and Norton (1996) describe the innovation of the balanced scorecard as follows:

*The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation.*

## The four perspectives

As noted in the previous section, the BSC highlights four different, but related, perspectives. For each of these perspectives, an organisation needs to develop measures, collect data and analyse the results relative to each of these perspectives as described below:

### The learning and growth perspective

This perspective includes employee training and corporate cultural attitudes related to both individual and corporate self-improvement. In a knowledge-worker organisation, people are the main resource. In the current climate of rapid technological change, it is becoming necessary for knowledge workers to be in a continuous learning mode. Measures can be put into place to guide managers in focusing training funds where they can help the most. In any case, learning and growth constitute the essential foundation for success of any knowledge-worker organisation.

Kaplan and Norton (1996) emphasise that “learning” is more than “training”; it also includes things like mentors and tutors within the organisation, as well as the ease of communication among workers that allows them to readily get help on a problem when it is needed.

Learning and growth measures address the question of how the firm must learn, improve, and innovate in order to meet its objectives. Much of this perspective is employee-centred. The following table outlines some examples of learning and growth measures:

Objective	Specific measure
Manufacturing learning	Time to new process maturity
Product focus	% of products representing 80% of sales
Time to market	Time compared to that of competitors

Figure 12

## The business process perspective

This perspective refers to internal business processes. Measures based on this perspective allow the managers to know how well their business is running, and whether its products and services conform to customer requirements (the mission). These measures have to be carefully designed by those who know these processes most in sufficient detail.

Internal business process objectives address the question of which processes are most critical for satisfying customers and shareholders. These are the processes in which the firm must concentrate its efforts to excel. The following table outlines some examples of process objectives and measures:

Objective	Specific measure
Manufacturing excellence	Cycle time, yield
Increase design productivity	Engineering efficiency
Reduce product launch delays	Actual launch date vs. plan

*Figure 13*

## The customer perspective

Recent management philosophy has shown an increasing realisation of the importance of customer focus and customer satisfaction in any business. These are leading indicators: if customers are not satisfied, they will eventually find other suppliers that will meet their needs. Poor performance from this perspective is thus a leading indicator of future decline, even though the current financial picture may look good.

In developing measures for satisfaction, customers should be analysed in terms of kinds of customers and the kinds of processes for which the organisation is providing a product or service to those customer groups.

The customer perspective addresses the question of how the firm is viewed by its customers and how well the firm is serving its targeted customers in order to meet the financial objectives. Generally, customers view the firm in terms of time, quality, performance, and cost. Most customer objectives fall into one of those four categories. The following table outlines some examples of specific customer objectives and measures:

Objective	Specific measure
New products	% of sales from new products
Responsive supply	On-time delivery
To be preferred supplier	Share of key accounts
Customer partnerships	Number of cooperative efforts

*Figure 14*



## The financial perspective

Kaplan and Norton do not disregard the traditional need for financial data. Timely and accurate financial data will always be required. However the current emphasis on financial considerations leads to the “unbalanced” situation with regard to other perspectives. There is perhaps a need to include additional financial-related data, such as risk assessment and cost-benefit data, in this category.

The financial perspective addresses the question of how shareholders view the firm and which financial goals are desired from the shareholder’s perspective. The specific goals depend on the company’s stage in the business life cycle.

For example:

- Growth stage. The goal is growth, such as revenue growth rate.
- Sustain stage. The goal is profitability, such as ROE, ROCE, and EVA.
- Harvest stage. The goal is cash flow and reduction in capital requirements.

The following table outlines some examples of financial measures:

Objective	Specific measure
Growth	Revenue growth
Profitability	Return on equity
Cost leadership	Unit cost

*Figure 15*

## Applications of the scorecard

### Designing the scorecard

In designing a BSC, the organisation must start with its strategy, mission and vision. Having set these, the development of the BSC should follow a logical process, as defined by Kaplan and Norton (1996), as follows:

1. **Define the measurement architecture.** When a company initially introduces the balanced scorecard, it is more manageable to apply it on the strategic business unit level rather than the corporate level. However, interactions must be considered in order to avoid optimising the results of one business unit at the expense of others.
2. **Specify strategic objectives.** The top three or four objectives for each perspective are agreed upon. Potential measures are identified for each objective.
3. **Choose strategic measures.** Measures that are closely related to the actual performance drivers are selected for evaluating the progress made toward achieving the objectives.

4. **Develop the implementation plan.** Target values are assigned to the measures. An information system is developed to link the top level measures to lower-level operational measures. The scorecard is integrated into the management system.

## Benefits of the scorecard

Some of the benefits of the balanced scorecard system include:

- translation of strategy into measurable parameters,
- communication of the strategy to everybody in the firm,
- alignment of individual goals with the firm's strategic objectives – the BSC recognises that the selected measures influence the behaviour of employees, and
- feedback of implementation results to the strategic planning process.

Since its beginnings as a performance measurement system, the balanced scorecard has evolved into a strategy implementation system that not only measures performance but also describes, communicates, and aligns the strategy throughout the organisation.

## Application of the scorecard

Balanced scorecards have been implemented by government agencies, military units, business units and companies as a whole, non-profit organisations and schools.

Many examples of balanced scorecards can be found via Web searches. However, adapting one organisation's balanced scorecard to another is generally not advised by theorists, who believe that much of the benefit of the balanced scorecard comes from the design process itself. It is suggested that many failures in the early days of balanced scorecard could be attributed to this problem, in that early balanced scorecards were often designed by consultants. Managers did not trust, and so failed to engage with and use this measurement tool created by people lacking knowledge of the organisation and management responsibility.

## Implementation issues

While the theory of the BSC is relatively simple, the implementation and maintenance of the BSC has sometimes proved to be difficult. The following are some of the issues associated with the implementation of the BSC in practice:

- **Lack of a well-defined strategy:** The balanced scorecard relies on a well-defined strategy and an understanding of the linkages between strategic objectives and the measures. Without this foundation, the implementation of the balanced scorecard is unlikely to be successful.



- **Using only lagging measures:** Many managers believe that they will reap the benefits of the balanced scorecard by using a wide range of non-financial measures. However, care should be taken to identify not only lagging measures that describe past performance, but also leading measures that can be used to plan for future performance.
- **Use of generic measures:** It usually is not sufficient simply to adopt the measures used by other successful firms. Each firm should take the effort to identify the measures that are appropriate for its own strategy and competitive position.
- **Organisation-wide** strategic statements can be very difficult to translate into specific employee actions.
- **Created strategies** can significantly change over time because of economic conditions and leadership changes.

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## Activity 4.5



### Activity

1. For the organisation you are involved with, find out if management use a scorecard to monitor progress towards achieving the organisation's strategic goals.
  - a. If a scorecard is used find out what measures are used and how often they are updated.
  - b. If a scorecard is not used, develop a scorecard that you believe is appropriate for the organisation.



## Activity 4.6



### Activity

1. With a balanced scorecard approach to business performance measurement, what difficulties could occur when trying to balance the four perspectives?
2. Why has the balanced scorecard become such an essential part of so many business management toolkits in recent years?
3. How can the balanced scorecard be used to achieve improved business performance?
4. The balanced scorecard appears to be the grouping together of a number of well-established principles and techniques. In what way does it represent a new technique?
5. Dynamic Systems Limited (DSL) is a small information systems consulting company which specialises in helping companies to implement production control software. The information systems consulting business is highly competitive and DSL must deliver quality service at a competitive cost. The company bills its clients in terms of units of work performed, which depends on the size and complexity of the client's production control system. The following data are provided:

	<u>2009</u>	<u>2010</u>
Units of work performed and sold	60	70
Selling price	\$100,000	\$96,000
Software implementation labour costs	\$3,600,000	\$4,032,000
Software implementation support costs	\$720,000	\$738,000
Selling and customer service costs	\$2,000,000	\$1,881,000
Software development staff	3	3
Software development costs	\$750,000	\$780,000
Software development costs per employee	\$250,000	\$260,000

At the beginning of each year management determines the number of software development staff for the year, but is aware that software development is an important factor in the company's strategy.

- a. Outline the four major sections of a 2010 balanced scorecard for DSL, and indicate at least two measures for each section.
- b. Outline why each measure is likely to lead to improvements in performance.



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## Unit summary



### Summary

In this unit you learned that:

- The purpose of a balanced scorecard is to provide a range of performance measures to support the organisation's strategy.
- The four perspectives of the balanced scorecard are:
  1. Learning and growth
  2. Business processes
  3. Customer
  4. Financial
- There is a four-step process to design a balanced scorecard.
- There are a number of issues that can arise when implementing a balanced scorecard.

## References



### References

Kaplan, R. & Norton, D. (1996). *The balanced scorecard: Technology strategy into action*. Harvard Business School Press.



# Activity feedback

## Activity 4.1, 4.3, 4.5

Your responses will depend on the organisation you choose.

## Activity 4.2

### 1. Forsyth Limited

	Total	Retail	Wholesale
Sales .....	\$740,000	\$500,000	\$240,000
Variable expenses .....	346,000	245,000	101,000
Contribution margin .....	394,000	255,000	139,000
Traceable fixed expenses ...	128,000	90,000	38,000
Segment margin .....	266,000	\$165,000	\$101,000
Common fixed expenses ....	152,000		
Net operating income .....	<u>\$114,000</u>		

### 2. Watford Limited

- a. Return on investment = Net operating income  $\div$  Average operating assets =  
 $\$150,000 \div \$500,000 = 30\%$

Residual income = Net operating income - (Average operating assets x Minimum required rate of return) =  
 $\$150,000 - (\$500,000 \times 0.19) = \$55,000$

- b. Return on investment = Net operating income  $\div$  Average operating assets =  
 $\$78,000 \div \$400,000 = 19.5\%$

Residual income = Net operating income - (Average operating assets x Minimum required rate of return) =  
 $\$78,000 - (\$400,000 \times 0.19) = \$2,000$

The company should invest in this project since its rate of return exceeds the minimum required rate of return. In other words, its residual income is positive.

### 3. Old Limited

Net operating income .....	\$72,900
Minimum required return (16% $\times$ \$470,000).....	75,200
Residual income .....	<u>(\$2,300)</u>

### 4. Geraldo Limited

- a. Minimum required return =  $\$300,000 \times 16\% = \$48,000$

- b. Residual income = Net operating income - Minimum required rate of return x Average operating assets =  
 $\$46,900 - (16\% \times \$300,000) = -\$1,100$

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## Activity 4.4

### 1. Chopper Limited

From the perspective of division A, profits would increase as a result of the transfer if, and only if:

$$\text{Transfer price} > \text{Variable cost} + \text{Opportunity cost.}$$

The opportunity cost is the contribution margin on the lost sales, divided by the number of units transferred:

$$\begin{aligned} \text{Opportunity cost} &= [(\$24 - \$16) \times 2,000^*] \div 10,000 = \$1.60 \\ *10,000 - (20,000 - 12,000) &= 2,000 \end{aligned}$$

$$\text{Therefore, Transfer price} > \$16 + \$1.60 = \$17.60.$$

### 2. Tyrone Limited

From the perspective of the East division, profits would increase as a result of the transfer if and only if:

$$\text{Transfer price} > \text{Variable cost} + \text{Opportunity cost}$$

The opportunity cost is the contribution margin on the lost sales, divided by the number of units transferred:

$$\text{Opportunity cost} = \$30 - \$10 - \$4 - \$9 = \$7 \text{ each}$$

$$\text{Therefore, Transfer price} > \$23 + \$7 = \$30.$$

### 3. Thorn Limited

- a. Current price being paid by the Dishwasher Division:

$$\$20 - (10\% \times \$20) = \$18$$

Using the transfer pricing formula, the minimum transfer price is:

$$\begin{aligned} \text{Transfer Price} &> \text{Variable Costs} + \text{Lost Contribution Margin} \\ &> \$11 + \$0 = \$11 \end{aligned}$$

Therefore, the transfer price would be between \$11 and \$18 per unit.

- b. In this case there is no idle capacity. Therefore, the appropriate transfer price would be:

$$\begin{aligned} \text{Transfer Price} &> \text{Variable Costs} + \text{Lost Contribution} \\ \text{Margin} &> \$11 + (\$20 - \$12) = \$11 + \$8 = \$19 \end{aligned}$$

### 4. Eastman Limited

- a. From the perspective of the Parts Division, profits would increase as a result of the transfer if, and only if:

$$\text{Transfer price} > \text{Variable cost} + \text{Opportunity cost.}$$



The opportunity cost is the contribution margin on the lost sales, divided by the number of units transferred:

$$\text{Opportunity cost} = [(\$32.00 - \$19.00 - \$3.00) \times 8,000^*] / 10,000 = \$8.00$$

$$* 20\% \times 40,000 = 8,000$$

Therefore, Transfer price >  $(\$15.00 + \$1.00) + \$8.00 = \$24.00$ .

From the viewpoint of the Machine Products Division, the transfer price must be less than the cost of buying the units from the outside supplier. Therefore, Transfer price < \$29.00.

Combining the two requirements, we get the following range of transfer prices:  $\$24.00 < \text{Transfer price} < \$29.00$ .

- b. Yes, the transfer should take place. From the viewpoint of the entire company, the cost of transferring the units within the company is \$24.00, but the cost of purchasing the special parts from the outside supplier is \$29.00. Therefore, the company's profits increase on average by \$5.00 for each of the special parts that is transferred within the company, even though this would cut into production and sales of another product.

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## Activity 4.6

1. With a balanced scorecard approach to business performance measurement, what difficulties could occur when trying to balance the four perspectives?

Answers could include:

- The four perspectives are quite different, and may well be strongly put by experts in one of the areas.
  - Ensuring that the debate is actually balanced will likely prove very difficult.
  - Determining appropriate measures of performance for the four areas will also be difficult, given that some are more easily measurable than others. Measurement scales will be a particular problem.
  - Getting all participants to think strategically.
  - Developing links with all stakeholders, especially avoiding cynicism.
2. Why has the balanced scorecard become such an essential part of so many business management toolkits in recent years?

The balanced scorecard has become an essential part of the management process because it gives top managers a quick but comprehensive view of the business. The balanced scorecard not only includes financial measures, but also includes non-financial (operational) measures on customer satisfaction, internal

processes, and the organisation's innovation and improvement activities – operational measures that are the drivers of future financial performance.

The balanced scorecard provides a framework for translating management strategy into operational terms. It is a performance measurement system that identifies and reports on performance measures for each key strategic area of the business. Performance measures are developed for each level of the organisation that reflect the four perspectives inherent in the scorecard, namely financial, customer, internal business processes, and learning and growth.

The measures in the scorecard provide balance between:

- short-term and long-term objectives,
- the four perspectives,
- outcome measures and the measures of the drivers of those outcomes, and
- measures that are objective and easily quantified versus subjective performance measures.

3. How can the balanced scorecard be used to achieve improved business performance?

The balanced scorecard can be used to improve business performance because the system identifies:

- key performance indicators,
- key performance drivers, and
- critical success factors.

Performance measurement systems should focus on these factors.

4. The balanced scorecard appears to be the grouping together of a number of well-established principles and techniques. In what way does it represent a new technique?

The balanced scorecard is a tool that incorporates the various types of key performance indicators (KPIs) and key performance drivers (KPDs) into a type of map that demonstrates how an entity can improve the outcome measures, such as return on assets, by making improvements in the aspects of the business that drive the improvements.

It integrates a wide range of non-financial performance measures with financial performance measures.

The balanced scorecard is structured to reflect cause and effect relationships between the objectives and measuring these objectives.

5. DSL balanced scorecard

- Balanced scorecard measures for 2010 follow:



a. **Financial perspective**

- operating income
- revenues per employee
- cost reductions in key areas, for example, software implementation and overhead costs.

These measures indicate whether DSL has been able to reduce costs and achieve operating income increases through cost leadership.

b. **Customer perspective**

- market share
- new customers
- speed of responding to customers
- customer satisfaction.

DSL's strategy should result in improvements in these customer measures that help evaluate whether DSL's cost leadership strategy is succeeding with its customers. These measures are leading indicators of superior financial performance.

c. **Internal business process perspective**

- time to complete customer jobs
- time lost due to errors
- quality of job (e.g. Is system running smoothly after the job is completed? What is the number of reported breakdowns?)
- Time required to analyse and design implementation steps
- time taken to perform key steps implementing the software.

Improvements in these measures are key drivers of achieving cost leadership and are expected to lead to more satisfied customers, lower costs, and superior financial performance.

d. **Learning and growth perspective**

- skill levels of employees
- hours of employee training
- employee satisfaction and motivation.

Improvements in these measures are likely to improve DSL's ability to achieve cost leadership and have a cause-and-effect relationship with improvements in internal business processes, customer satisfaction, and financial performance.





*[Add institute name here]*  
**Accounting and Finance**

# Assignment 1

Semester x, 20xx



Assignment

<b>Date issued:</b>	xxxxxx 20xx		
<b>Due date and time:</b>	xxxxxxxx 20xx at xxxpm		
<b>Delivery:</b>	Post to xxxxxxxx, or bring to class on xxxxx 20xx.		
<b>Total marks:</b>	100 marks		
<b>Weighting:</b>	25% of final course grade		
<b>Instructions:</b>	<ul style="list-style-type: none"><li>• Complete this cover sheet and attach it to your assignment.</li><li>• Where applicable, show details of your workings.</li><li>• This is an individual assignment and must be your own work.</li><li>• Collusion, copying or plagiarism may result in disciplinary action</li><li>• We advise that you keep a copy of this assignment.</li></ul>		
<b>Student Name:</b>			
<b>Student ID No:</b>			
<b>Lecturer:</b>	xxxxx	Course ID: xxxx	Sem x, 20xx
<b>Student declaration:</b>	I confirm that: <ul style="list-style-type: none"><li>• This is an original assessment and is entirely my own work.</li><li>• This assignment has not previously been submitted as assessed work for any academic course.</li></ul>		
<b>Student signature:</b>			
<b>ID No:</b>			
<b>Date of signature:</b>			



## Instructions

The purpose of this assignment is to provide you with experience in answering a number of questions based on the Management Accounting Modules in this course.

**Instructions:** Answer **ALL** questions.  
Read each question carefully.  
Answer only what is asked for.  
Please type your responses or write clearly.

**Summary of assignment:**

Question	Type/Topic	Marks
1	Discussion Questions	10
2	Relevant Costs	10
3	Activity Based Costing	18
4	Cost-Volume-Profit Analysis	7
5	Standard Costing — Variances	16
6	Flexible Budgets — Variances	15
7	Performance Measurement	10
8	Balanced Scorecard	14
<b>TOTAL</b>		<b>100</b>

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## Question 1

### Discussion questions

(10 marks)

- a. Explain why the balanced scorecard differs from company to company. Identify the appropriate personnel responsible for the implementation of the balanced scorecard.

**5 marks**

- b. Dunn and Evans started the DE Restaurant in 2007. They rented a building, bought equipment, and hired two employees to work full time at a fixed monthly salary. Utilities and other operating charges remain fairly constant during each month.

During the past two years, the business has grown with average sales increasing 1% a month. This situation pleases both Dunn and Evans, but they do not understand how sales can grow by 1% a month while profits are increasing at an even faster pace. They are afraid that one day they will wake up to increasing sales but decreasing profits.

Explain why the profits have increased at a faster rate than sales.

**5 marks**



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## Question 2

### Relevant costs: Make or buy

(10 marks)

Custom Bicycles has been manufacturing its own wheels for its bikes. The company is currently operating at 100% capacity, and variable manufacturing overhead is charged to production at the rate of 30% of direct labour cost. The direct materials and direct labour cost per unit to make the wheels are \$1.50 and \$1.80, respectively. Normal production is 200,000 wheels per year.

A supplier offers to make the wheels at a price of \$4 each. If the bicycle company accepts this offer, all variable manufacturing costs will be eliminated, but the \$42,000 of fixed manufacturing overhead currently being charged to the wheels will have to be absorbed by other products.

- a. Prepare an analysis for the decision to make or buy the wheels and recommend whether Custom Bicycles should buy the wheels from the outside supplier.

**8 marks**

- b. What other factors should Custom Bicycles consider in making the decision to manufacture or buy the wheels?

**2 marks**

## Question 3

### Activity-based costing

(18 marks)

Able Fancy Cake Company manufactures and sells three flavours of small cakes: chocolate, apple, and cream. The batch size for the cakes is limited to 1,000 cakes per batch based on the size of the ovens and cake moulds owned by the company. Based on budgetary projections, the information listed below is available:

	Chocolate	Apple	Cream
Projected sales in units	500,000	800,000	600,000
PER CAKE data:			
Selling price	\$0.80	\$0.75	\$0.60
Direct materials	\$0.20	\$0.15	\$0.14
Direct labour	\$0.04	\$0.02	\$0.02
Hours per 1000-cake batch:			
Direct labour hours	2	1	1
Oven hours	1	1	1
Packaging hours	0.5	0.5	0.5

Total overhead costs and activity levels for the year are estimated as follows:

Activity	Overhead costs	Activity levels
Direct labour		2,400 hours
Oven	\$210,000	1,900 oven hours
Packaging	\$150,000	950 packaging hours

- a. Use activity based costing (ABC) for the chocolate cake, to calculate the estimated overhead costs per thousand cakes and the estimated operating profit per thousand cakes.

**8 marks**

- b. Using a traditional costing system (with direct labour hours as the overhead allocation base), for the chocolate cake, calculate the estimated overhead costs per thousand cakes and the estimated operating profit per thousand cakes.

**6 marks**

- c. Explain the difference between the profits obtained from the traditional costing system and the ABC system. In doing so, briefly explain which system provides a better estimate of profitability and why.

**4 marks**



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## Question 4

### Cost-volume-profit analysis

(7 marks)

Miller Limited sells car batteries to service stations for an average price of \$30 each. The variable cost of each battery is \$20 and monthly fixed manufacturing costs total \$10,000. Other monthly fixed costs of the company total \$8,000.

- a. Determine the breakeven point and the margin of safety, both in number of batteries and in dollars. Assume sales total \$60,000.

**4 marks**

- b. Determine the breakeven level in number of batteries, assuming variable costs increase by 20%.

**2 marks**

- c. Determine the breakeven level in number of batteries, assuming the selling price goes up by 10%, fixed manufacturing costs decline by 10%, and other fixed costs decline by \$100.

**1 mark**

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## Question 5

### Standard costing – variances

(16 marks)

Wilson's Woollens manufactures jackets and other wool clothing. A certain designed ski jacket requires the following:

Direct materials standard:                      2 square metres at \$13.50 per  
metre

Direct manufacturing labour                      1.5 hours at \$20.00 per hour  
standard:

During the third quarter, the company made 1,500 jackets and used 3,150 metres of fabric costing \$39,375. Direct labour totalled 2,100 hours for \$45,150.

The company's chief financial officer is interested to know how actual production costs compared against standard costs during the third quarter and asks you to provide a variance analysis report.

Prepare a variance analysis report for the chief financial officer for the standard cost variances for direct materials and direct labour, indicating whether the variances are favourable or unfavourable with possible reasons for each of the variances.

**16 marks**



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## Question 6

### Flexible budgets — variances

(15 marks)

Different managers in Gates Limited require varying degrees of managerial accounting information. Because of the need to comply with the managers' requests, four different variances for manufacturing overhead are calculated each month. The information for the September overhead expenditure is as follows:

Budgeted output units	3,200 units
Budgeted fixed manufacturing overhead	\$20,000
Budgeted variable manufacturing overhead	\$5 per direct labour hour
Budgeted direct manufacturing labour hours	2 hours per unit
Actual fixed manufacturing costs incurred	\$26,000
Actual direct manufacturing labour hours used	7,200 direct labour hours
Actual variable manufacturing costs incurred	\$35,600
Actual units manufactured	3,400 units

Prepare a variance report for variable and fixed overhead costs explaining the possible reasons for the variances.

**15 marks**



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## Question 7

### Performance measurement

(10 marks)

Kaiser Tool Company allows its divisions to operate as autonomous units. The operating data for 2010 follow:

	Drills (\$)	Hammers (\$)	Saws (\$)
Revenues	2,250,000	500,000	4,800,000
Accounts receivable	800,000	152,500	1,435,000
Operating assets	1,000,000	400,000	1,750,000
Net operating income	220,000	60,000	480,000
Taxable income	165,000	90,000	385,000

- a. Calculate the return on investment for each division and identify the division manager that is doing best with a brief explanation.

**6 marks**

- b. Identify and briefly explain other factors that should be included when evaluating the managers.

**4 marks**



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## Question 8

### Balanced scorecard

(14 marks)

Para Water (PW) is a manufacturer of bottled water. PW has been experiencing increased competition from other manufacturers. In an effort to improve performance, management intends to create a balanced scorecard. In a meeting, several measures were suggested by various managers to deal with the issue of declining profitability.

In the meeting, management has identified a key problem. Customers are taking too long to pay their invoices, and the company has an abnormal amount of bad debts. If this problem were solved, the company would have far more cash to invest in plant improvements. Investigation has revealed that much of the problem with late payments and unpaid invoices is apparently due to disputes about incorrect charges on the customer invoices. Incorrect charges usually occur because sales clerks enter data incorrectly on the sales orders.

In order to develop the balanced scorecard to deal with the identified problem, managers have suggested the following performance measures:

- Total sales revenue
- Sales to total assets
- Customer satisfaction with accuracy of customer invoices from monthly customer survey
- Customer wait time for service
- Average age of accounts receivable
- Written-off accounts receivable as a percentage of sales
- Percentage of customer invoices containing errors
- Percentage of employees who have attended the company's cultural diversity workshop
- Total profit
- Profit per employee
- Percentage of sales clerks trained to correctly enter data on sales orders

- a. Create an integrated balanced scorecard using only the performance measures suggested by the managers. You do not have to use all the measures, but build a balanced scorecard that reveals the action plan for dealing with the problems with accounts receivable.

**5 marks**

- b. Briefly describe the company's action plan to resolve the problem.

**1 mark**

- c. Link each of the perspectives to achieve the desired outcome and briefly explain how the company is able to determine if the action plan is being effective.

**8 marks**