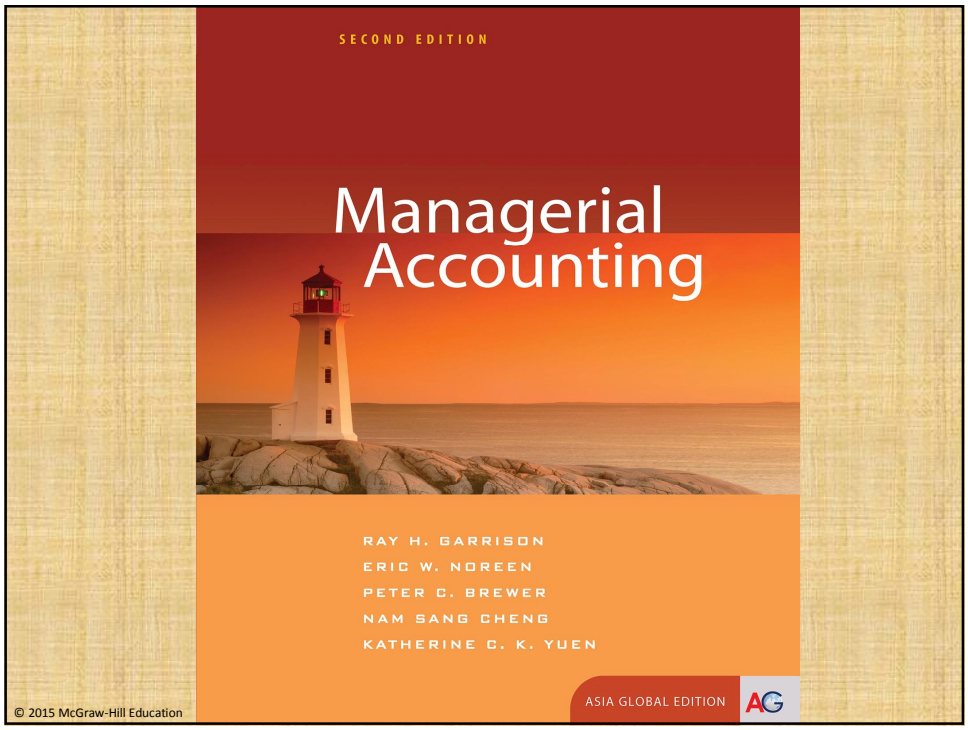
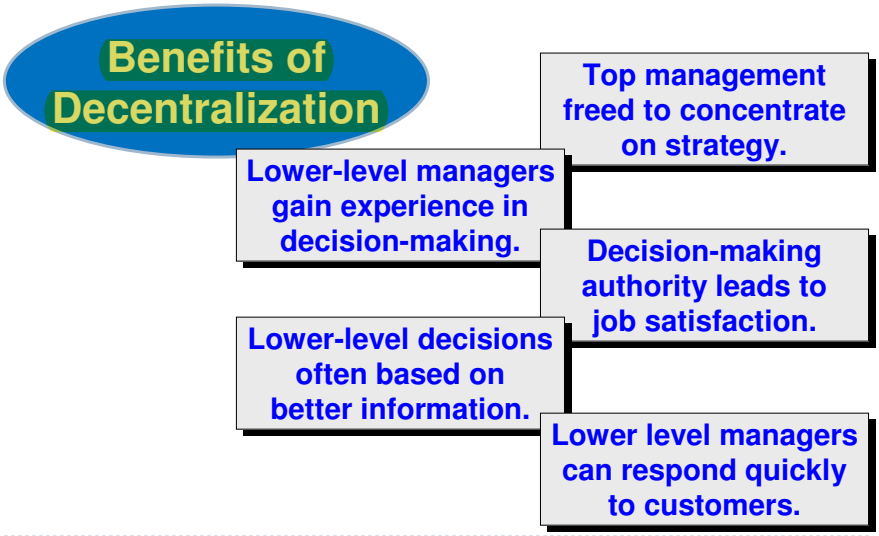


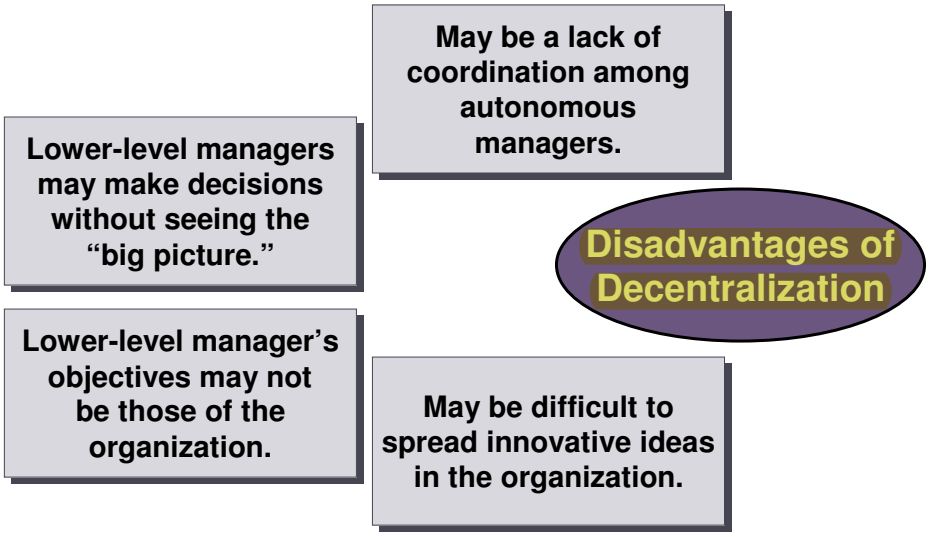
Performance Measurement in Decentralized Organizations

Chapter 13

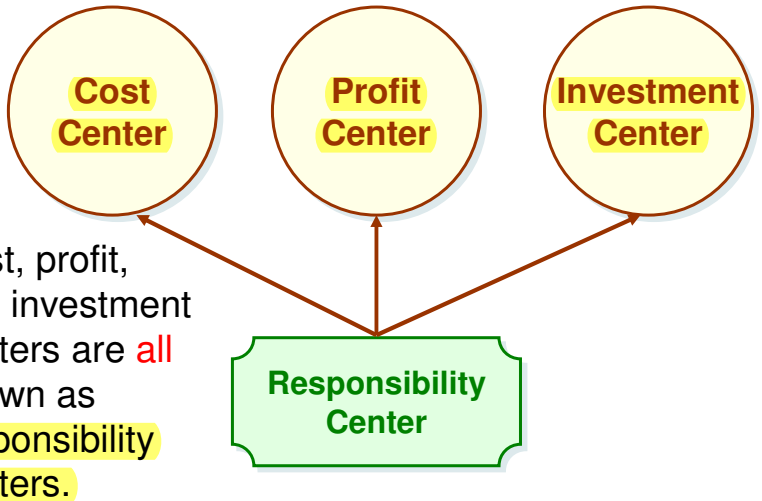
Decentralization in Organizations



Decentralization in Organizations



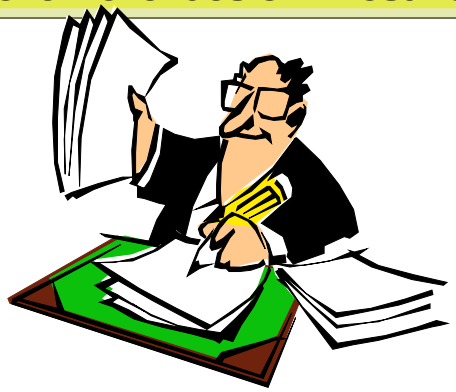
Cost, Profit, and Investments Centers



Cost, profit, and investment centers are all known as responsibility centers.

Cost Center

A segment whose manager has control over costs, but not over revenues or investment funds.



Profit Center

A segment whose manager has control over both costs and revenues, but no control over investment funds.

- Revenues
  - Sales
  - Interest
  - Other
- Costs
  - Mfg. costs
  - Commissions
  - Salaries
  - Other

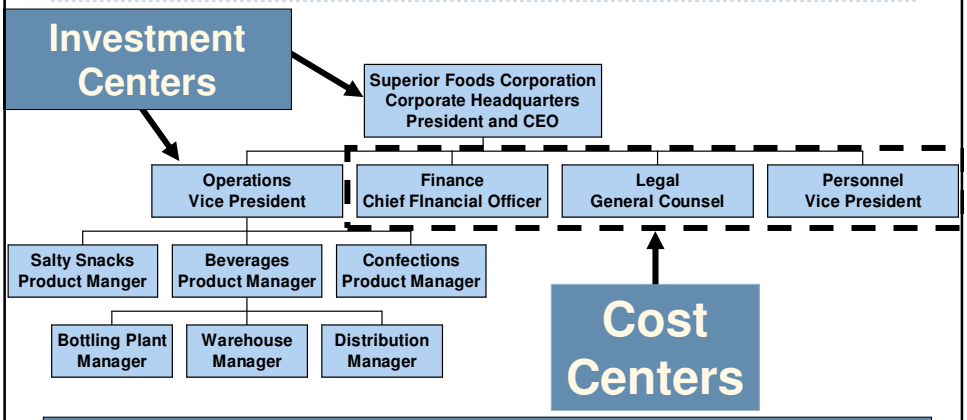
Investment Center

A segment whose manager has control over costs, revenues, and investments in operating assets.

Corporate Headquarters

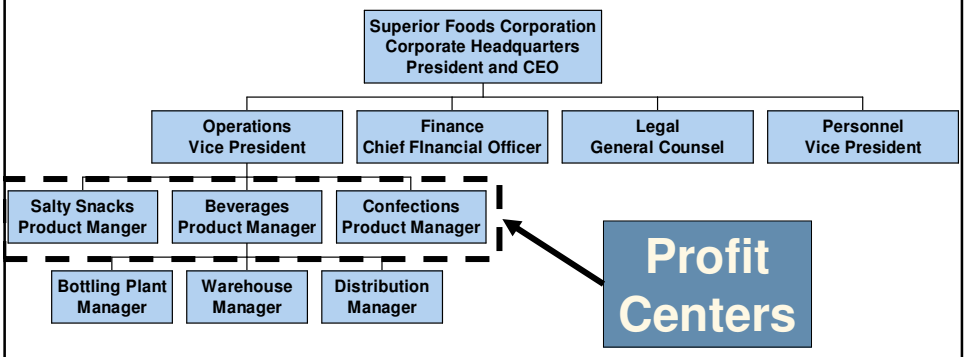
HR8

Responsibility Centers



Superior Foods Corporation provides an example of the various kinds of responsibility centers that exist in an organization.

Responsibility Centers



Superior Foods Corporation provides an example of the various kinds of responsibility centers that exist in an organization.

HR8 Slide 8
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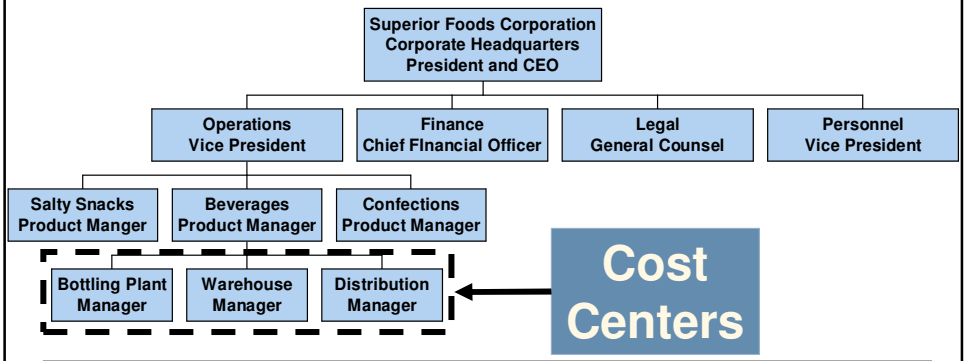
Helen Roybark, 2008/11/1

Responsibility Centers



Superior Foods Corporation provides an example of the various kinds of responsibility centers that exist in an organization.

Learning Objective 1

Prepare a segmented income statement using the contribution format, and explain the difference between traceable fixed costs and common fixed costs.

Decentralization and Segment Reporting

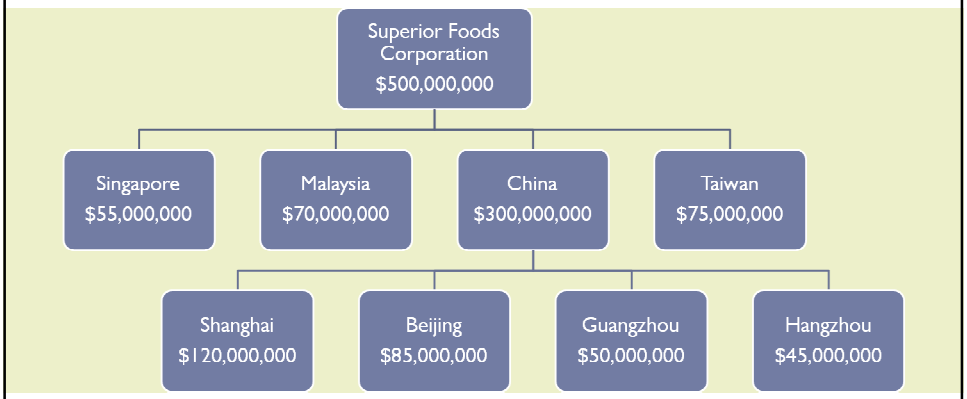
A **segment** is any part or activity of an organization about which a manager seeks cost, revenue, or profit data.

An Individual Store

A Sales Territory

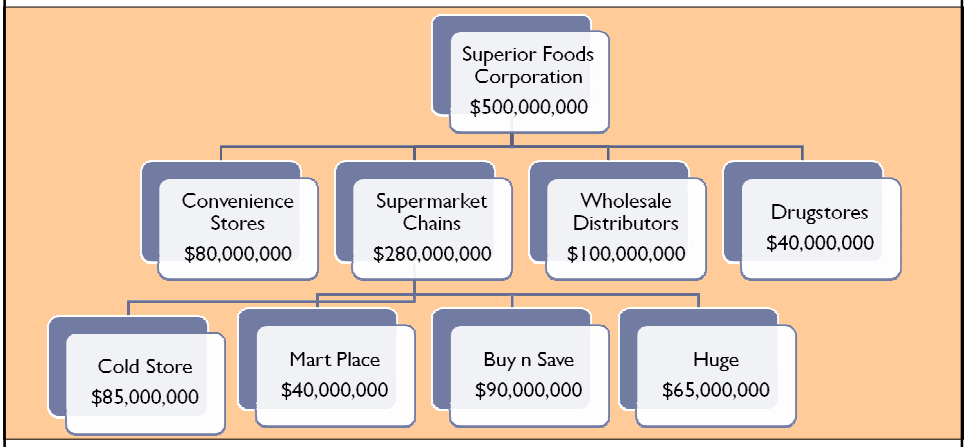
A Service Center

Superior Foods: Geographic Regions



Superior Foods Corporation could segment its business by geographic region.

Superior Foods: Customer Channel



Superior Foods Corporation could segment its business by customer channel.

Keys to Segmented Income Statements

There are two keys to building segmented income statements:

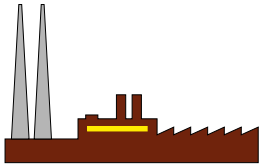
A contribution format should be used because it separates fixed from variable costs and it enables the calculation of a contribution margin.

Traceable fixed costs should be separated from common fixed costs to enable the calculation of a segment margin.

Identifying Traceable Fixed Costs

Traceable costs arise because of the existence of a particular segment and would disappear over time if the segment itself disappeared.

No computer division means . . .

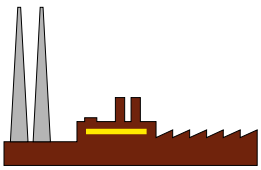


No computer division manager.

Identifying Common Fixed Costs

Common costs arise because of the overall operation of the company and would not disappear if any particular segment were eliminated.

No computer division but . . .



We still have a company president.

Traceable Costs Can Become Common Costs

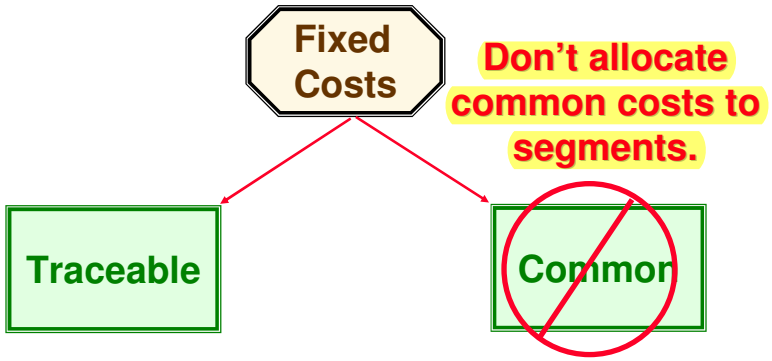
It is important to realize that the traceable fixed costs of one segment may be a common fixed cost of another segment.

For example, the landing fee paid to land an airplane at an airport is traceable to the particular flight, but it is not traceable to first-class, business-class, and economy-class passengers.

Segment Margin

The segment margin, which is computed by subtracting the traceable fixed costs of a segment from its contribution margin, is the best gauge of the long-run profitability of a segment.

Traceable and Common Costs

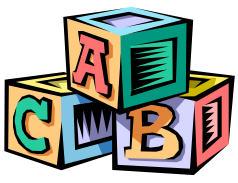


Activity-Based Costing

Activity-based costing can help identify how costs shared by more than one segment are traceable to individual segments.

Assume that three products, 9-inch, 12-inch, and 18-inch pipe, share 10,000 square feet of warehousing space, which is leased at a price of $4 per square foot.

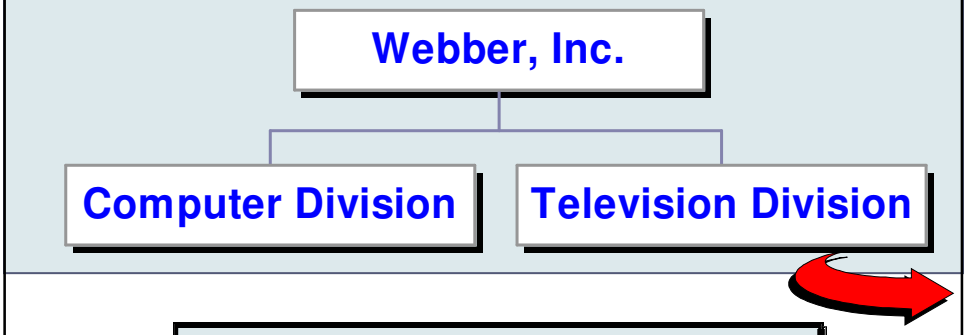
If the 9-inch, 12-inch, and 18-inch pipes occupy 1,000, 4,000, and 5,000 square feet, respectively, then ABC can be used to trace the warehousing costs to the three products as shown.



	Pipe Products			
	9-inch	12-inch	18-inch	Total
Warehouse sq. ft.	1,000	4,000	5,000	10,000
Lease price per sq. ft.	$ 4	$ 4	$ 4	$ 4
Total lease cost	$ 4,000	$ 16,000	$ 20,000	$ 40,000

Levels of Segmented Statements

Webber, Inc. has two divisions.



Let's look more closely at the Television Division's income statement.

Levels of Segmented Statements

Our approach to segment reporting uses the contribution format.

Income Statement Contribution Margin Format Television Division	
Sales	$300,000
Variable COGS	120,000
Other variable costs	30,000
Total variable costs	150,000
Contribution margin	150,000
Traceable fixed costs	90,000
Division margin	$ 60,000

Cost of goods sold consists of variable manufacturing costs.

Fixed and variable costs are listed in separate sections.

Levels of Segmented Statements

Our approach to segment reporting uses the contribution format.

Income Statement Contribution Margin Format Television Division	
Sales	$300,000
Variable COGS	120,000
Other variable costs	30,000
Total variable costs	150,000
Contribution margin	150,000
Traceable fixed costs	90,000
Division margin	$ 60,000

Contribution margin is computed by taking sales minus variable costs.

Segment margin is Television's contribution to profits.

Levels of Segmented Statements

Income Statement			
	Company	Television	Computer
Sales	$ 500,000	$ 300,000	$ 200,000
Variable costs	230,000	150,000	80,000
CM	270,000	150,000	120,000
Traceable FC	170,000	90,000	80,000
Division margin	100,000	$ 60,000	$ 40,000
Common costs			
Net operating income			

Levels of Segmented Statements

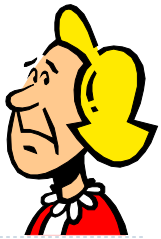
Income Statement	Company	Television	Computer
Sales	$ 500,000	$ 300,000	$ 200,000
Variable costs	230,000	150,000	80,000
CM	270,000	150,000	120,000
Traceable FC	170,000	90,000	80,000
Division margin	100,000	$ 60,000	$ 40,000
Common costs	25,000		
Net operating income	$ 75,000		

Common costs should not be allocated to the divisions. These costs would remain even if one of the divisions were eliminated.

Traceable Costs Can Become Common Costs

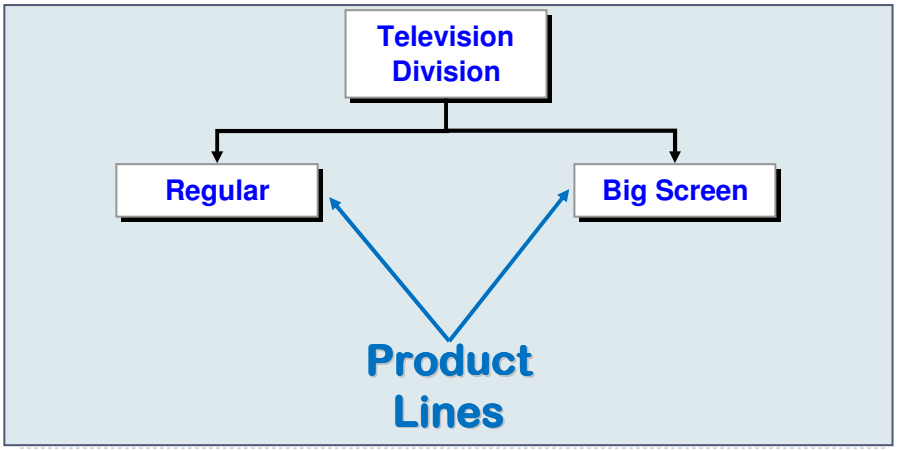
As previously mentioned, fixed costs that are traceable to one segment can become common if the company is divided into smaller segments.

Let's see how this works using the Webber, Inc. example!



Traceable Costs Can Become Common Costs

Webber's Television Division



Traceable Costs Can Become Common Costs

Income Statement

	Television Division	Regular	Big Screen
Sales		$ 200,000	$ 100,000
Variable costs		95,000	55,000
CM		105,000	45,000
Traceable FC		45,000	35,000
Product line margin		$ 60,000	$ 10,000
Common costs			
Divisional margin			

We obtained the following information from the Regular and Big Screen segments.

Traceable Costs Can Become Common Costs

Income Statement

	Television Division	Regular	Big Screen
Sales	$ 300,000	$ 200,000	$ 100,000
Variable costs	150,000	95,000	55,000
CM	150,000	105,000	45,000
Traceable FC	80,000	45,000	35,000
Product line margin	70,000	$ 60,000	$ 10,000
Common costs	10,000		
Divisional margin	$ 60,000		

Fixed costs directly traced to the Television Division
$80,000 + $10,000 = $90,000

External Reports

The International Financial Reporting Standards (IFRS) and US GAAP require companies to include segmented financial data in their annual reports.

1. In addition to some compulsory disclosure, companies must report segmented results to shareholders using the same measures to be used by the Chief Operating Decision Maker (CODM) to make decisions
2. Since the contribution approach to segment reporting does not comply with financial reporting standards, it is likely that some managers will choose to construct their segmented financial statements using the absorption approach to comply with GAAP.

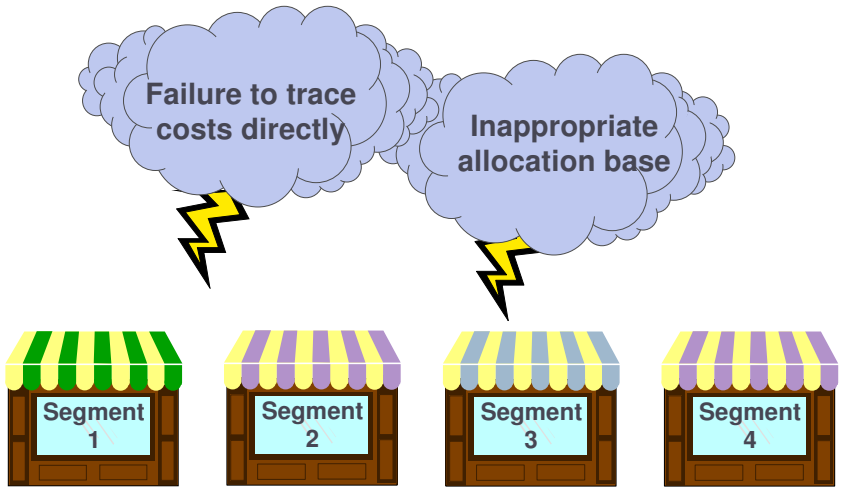
Omission of Costs

Costs assigned to a segment should include all costs attributable to that segment from the company's entire value chain.

Business Functions Making Up The Value Chain

R&D	Product Design	Manufacturing	Marketing	Distribution	Customer Service

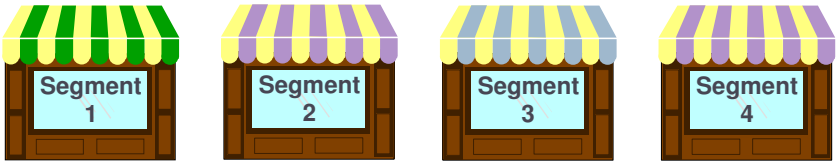
Inappropriate Methods of Allocating Costs Among Segments



Common Costs and Segments

Common costs should not be arbitrarily allocated to segments based on the rationale that "someone has to cover the common costs" for two reasons:

1. **This practice may make a profitable business segment appear to be unprofitable.**
2. **Allocating common fixed costs forces managers to be held accountable for costs they cannot control.**



Quick Check ✓

Income Statement

	Hoagland's Lakeshore	Bar	Restaurant
Sales	$ 800,000	$ 100,000	$ 700,000
Variable costs	310,000	60,000	250,000
CM	490,000	40,000	450,000
Traceable FC	246,000	26,000	220,000
Segment margin	244,000	$ 14,000	$ 230,000
Common costs	200,000		
Profit	$ 44,000		

Assume that Hoagland's Lakeshore prepared its segmented income statement as shown.

Quick Check ✓

How much of the common fixed cost of $200,000 can be avoided by eliminating the bar?

a. None of it.

b. Some of it.

c. All of it.

Quick Check ✓

How much of the common fixed cost of $200,000 can be avoided by eliminating the bar?

a. None of it.

b. Some of it.

c. All of it.

A common fixed cost cannot be eliminated by dropping one of the segments.

Quick Check ✓

Suppose square feet is used as the basis for allocating the common fixed cost of $200,000. How much would be allocated to the bar if the bar occupies 1,000 square feet and the restaurant 9,000 square feet?

a. $20,000
b. $30,000
c. $40,000
d. $50,000

Quick Check ✓

Suppose square feet is used as the basis for allocating the common fixed cost of $200,000. How much would be allocated to the bar if the bar occupies 1,000 square feet and the restaurant 9,000 square feet?

a. $20,000
b. $30,000
c. $40,000
d. $50,000

The bar would be allocated $^{1}/_{10}$ of the cost or $20,000.

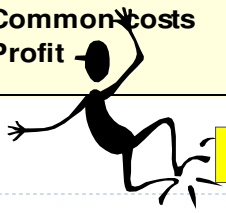
Quick Check ✓

If Hoagland's allocates its common costs to the bar and the restaurant, what would be the reported profit of each segment?

Allocations of Common Costs

Income Statement

	Hoagland's Lakeshore	Bar	Restaurant
Sales	$ 800,000	$ 100,000	$ 700,000
Variable costs	310,000	60,000	250,000
CM	490,000	40,000	450,000
Traceable FC	246,000	26,000	220,000
Segment margin	244,000	14,000	230,000
Common costs	200,000	20,000	180,000
Profit	$ 44,000	$ (6,000)	$ 50,000



Hurray, now everything adds up!!!

Quick Check ✓

Should the bar be eliminated?

a. Yes

b. No

Quick Check ✓

Should the bar be eliminated?

a. Yes

b. No

The profit was $44,000 before eliminating the bar. If we eliminate the bar, profit drops to $30,000!

	Hoagland's Lakeshore	Bar	Restaurant
Sales	$ 700,000		$ 700,000
Variable costs	250,000		250,000
CM	450,000		450,000
Traceable FC	220,000		220,000
Segment margin	230,000		230,000
Common costs	200,000		200,000
Profit	$ 30,000		$ 30,000

Learning Objective 2

Compute return on investment (ROI) and show how changes in sales, expenses, and assets affect ROI.

Return on Investment (ROI) Formula

Income before interest and taxes (EBIT)

$$\text{ROI} = \frac{\text{Net operating income}}{\text{Average operating assets}}$$

Cash, accounts receivable, inventory, plant and equipment, and other productive assets.

Net Book Value vs. Gross Cost

Most companies use the net book value of depreciable assets to calculate average operating assets.

Acquisition cost
Less: Accumulated depreciation
Net book value

Understanding ROI

$$\text{ROI} = \frac{\text{Net operating income}}{\text{Average operating assets}}$$

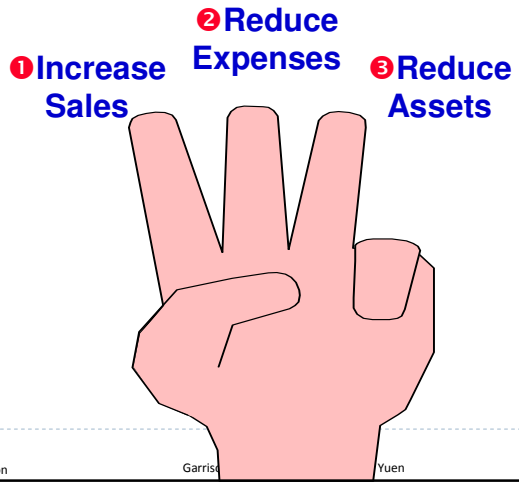
$$\text{Margin} = \frac{\text{Net operating income}}{\text{Sales}}$$

$$\text{Turnover} = \frac{\text{Sales}}{\text{Average operating assets}}$$

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

Increasing ROI

There are three ways to increase ROI . . .



Increasing ROI – An Example

Regal Company reports the following:

Net operating income	$ 30,000
Average operating assets	$ 200,000
Sales	$ 500,000
Operating expenses	$ 470,000

What is Regal Company's ROI?

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

$$\text{ROI} = \frac{\text{Net operating income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average operating assets}}$$

Increasing ROI – An Example

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

$$\text{ROI} = \frac{\text{Net operating income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average operating assets}}$$

$$\text{ROI} = \frac{\$30{,}000}{\$500{,}000} \times \frac{\$500{,}000}{\$200{,}000}$$

$$\text{ROI} = 6\% \times 2.5 = 15\%$$

Investing in Operating Assets to Increase Sales

Assume that Regal's manager invests in a $30,000 piece of equipment that increases sales by $35,000, while increasing operating expenses by $15,000.

Regal Company reports the following:

Net operating income	$ 50,000
Average operating assets	$ 230,000
Sales	$ 535,000
Operating expenses	$ 485,000

Let's calculate the new ROI.

Investing in Operating Assets to Increase Sales

ROI = Margin × Turnover

$$\text{ROI} = \frac{\text{Net operating income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average operating assets}}$$

$$\text{ROI} = \frac{\$50{,}000}{\$535{,}000} \times \frac{\$535{,}000}{\$230{,}000}$$

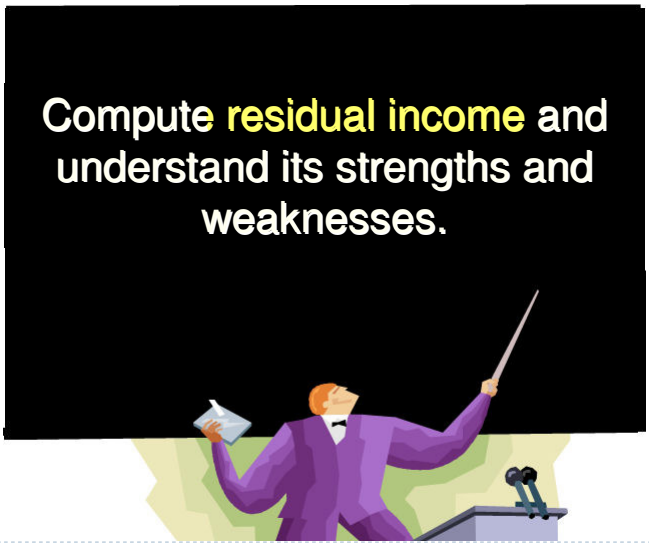
$$\text{ROI} = 9.35\% \times 2.33 = 21.8\%$$

ROI increased from 15% to 21.8%.

Criticisms of ROI

- In the absence of the balanced scorecard, management may not know how to increase ROI.
- Managers often inherit many committed costs over which they have no control.
- Managers evaluated on ROI may reject profitable investment opportunities.

Learning Objective 3



Residual Income - Another Measure of Performance

Calculating Residual Income

Residual income	=	Net operating income	-	(Average operating assets	×	Minimum required rate of return)

This computation differs from ROI.

ROI measures net operating income earned relative to the investment in average operating assets.

Residual income measures net operating income earned less the minimum required return on average operating assets.

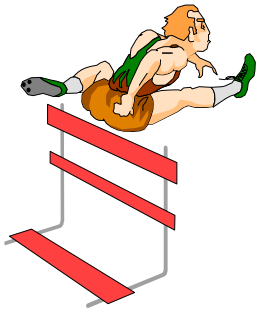
Residual Income – An Example

- The Retail Division of Zephyr, Inc. has average operating assets of $100,000 and is required to earn a return of 20% on these assets.
- In the current period, the division earns $30,000.

Let's calculate residual income.

Residual Income – An Example

Operating assets	$100,000
Required rate of return ×	20%
Minimum required return	$ 20,000



Actual income	$ 30,000
Minimum required return	(20,000)
Residual income	$ 10,000

Motivation and Residual Income

Residual income encourages managers to make profitable investments that would be rejected by managers using ROI.

Quick Check ✓

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of $60,000 and average operating assets of $300,000. The required rate of return for the company is 15%. What is the division's ROI?

a. 25%
b. 5%
c. 15%
d. 20%

Quick Check ✓

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of $60,000 and average operating assets of $300,000. The required rate of return for the company is 15%. What is the division's ROI?

a. 25%
b. 5%
c. 15%
d. 20%

ROI = NOI/Average operating assets
= $60,000/$300,000 = 20%

Quick Check ✓

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of $60,000 and average operating assets of $300,000. If the manager of the division is evaluated based on ROI, will she want to make an investment of $100,000 that would generate additional net operating income of $18,000 per year?

a. Yes

b. No

Quick Check ✓

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of $60,000 and average operating assets of $300,000. If the manager of the division is evaluated based on ROI, will she want to make an investment of $100,000 that would generate additional net operating income of $18,000 per year?

a. Yes

b. No

ROI = $78,000/$400,000 = 19.5%

This lowers the division's ROI from 20.0% down to 19.5%.

Quick Check ✓

The company's required rate of return is 15%. Would the company want the manager of the Redmond Awnings division to make an investment of $100,000 that would generate additional net operating income of $18,000 per year?

a. Yes

b. No

Quick Check ✓

The company's required rate of return is 15%. Would the company want the manager of the Redmond Awnings division to make an investment of $100,000 that would generate additional net operating income of $18,000 per year?

a. Yes

b. No

ROI = $18,000/$100,000 = 18%

The return on the investment exceeds the minimum required rate of return.

Quick Check ✓

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of $60,000 and average operating assets of $300,000. The required rate of return for the company is 15%. What is the division's residual income?

a. $240,000
b. $ 45,000
c. $ 15,000
d. $ 51,000

Quick Check ✓

Redmond Awnings, a division of Wrap-up Corp., has a net operating income of $60,000 and average operating assets of $300,000. The required rate of return for the company is 15%. What is the division's residual income?

a. $240,000
b. $ 45,000
c. $ 15,000
d. $ 51,000

Net operating income	**$60,000**
Required return (15% of $300,000)	**(45,000)**
Residual income	**$15,000**

Quick Check ✓

If the manager of the Redmond Awnings division is evaluated based on residual income, will she want to make an investment of $100,000 that would generate additional net operating income of $18,000 per year?

a. Yes

b. No

Quick Check ✓

If the manager of the Redmond Awnings division is evaluated based on residual income, will she want to make an investment of $100,000 that would generate additional net operating income of $18,000 per year?

a. Yes

b. No

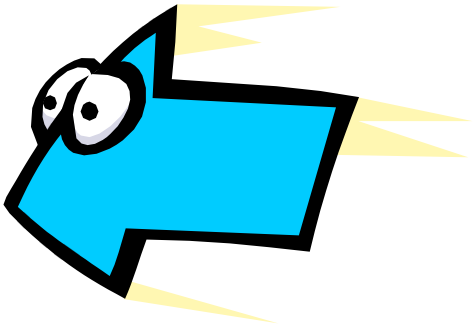
Net operating income	$78,000
Required return (15% of $400,000)	(60,000)
Residual income	$18,000

Yields an increase of $3,000 in the residual income.

Divisional Comparisons and Residual Income

The residual income approach has one major disadvantage.

It cannot be used to compare the performance of divisions of different sizes.



Zephyr, Inc. - Continued

Recall the following information for the Retail Division of Zephyr, Inc.

Assume the following information for the Wholesale Division of Zephyr, Inc.

	Retail	Wholesale
Operating assets	$ 100,000	$ 1,000,000
Required rate of return ×	20%	20%
Minimum required return	$ 20,000	$ 200,000

	Retail	Wholesale
Actual income	$ 30,000	$ 220,000
Minimum required return	(20,000)	(200,000)
Residual income	$ 10,000	$ 20,000

Zephyr, Inc. - Continued

The residual income numbers suggest that the Wholesale Division outperformed the Retail Division because its residual income is $10,000 higher. However, the Retail Division earned an ROI of 30% compared to an ROI of 22% for the Wholesale Division. The Wholesale Division's residual income is larger than the Retail Division simply because it is a bigger division.

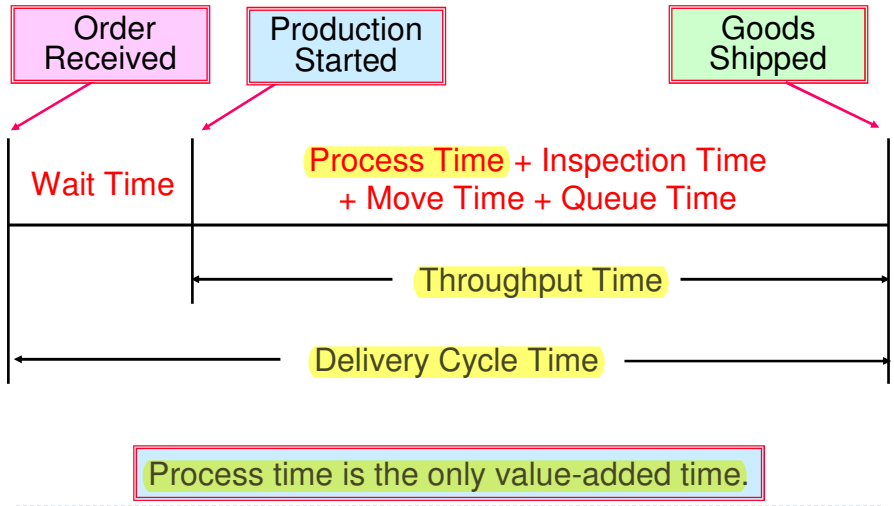
	Retail	Wholesale
Operating assets	$ 100,000	$ 1,000,000
Required rate of return ×	20%	20%
Minimum required return	$ 20,000	$ 200,000

	Retail	Wholesale
Actual income	$ 30,000	$ 220,000
Minimum required return	(20,000)	(200,000)
Residual income	$ 10,000	$ 20,000

Learning Objective 4

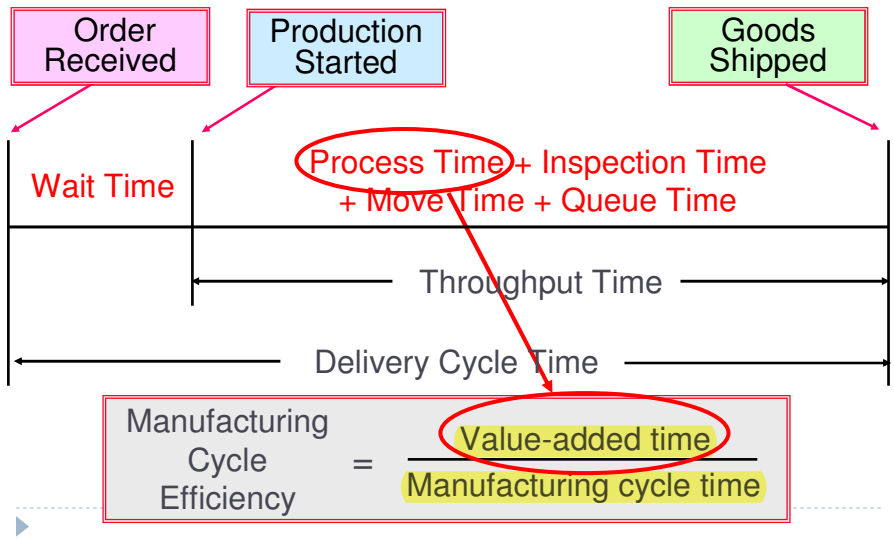
Compute delivery cycle time, throughput time, and manufacturing cycle efficiency (MCE).

Delivery Performance Measures



Process time is the only value-added time.

Delivery Performance Measures



$$\text{Manufacturing Cycle Efficiency} = \frac{\text{Value-added time}}{\text{Manufacturing cycle time}}$$

Quick Check ✓

A TQM team at Narton Corp has recorded the following average times for production:

Wait	3.0 days	Move	0.5 days
Inspection	0.4 days	Queue	9.3 days
Process	0.2 days		

What is the throughput time?

a. 10.4 days.
b. 0.2 days.
c. 4.1 days.
d. 13.4 days.

Quick Check ✓

A TQM team at Narton Corp has recorded the following average times for production:

Wait	3.0 days	Move	0.5 days
Inspection	0.4 days	Queue	9.3 days
Process	0.2 days		

What is the throughput time?

a. 10.4 days.

Throughput time = Process + Inspection + Move + Queue
= 0.2 days + 0.4 days + 0.5 days + 9.3 days
= 10.4 days

Quick Check ✓

A TQM team at Narton Corp has recorded the following average times for production:

Wait	3.0 days	Move	0.5 days
Inspection	0.4 days	Queue	9.3 days
Process	0.2 days		

What is the Manufacturing Cycle Efficiency (MCE)?

a. 50.0%.
b. 1.9%.
c. 52.0%.
d. 5.1%.

Quick Check ✓

A TQM team at Narton Corp has recorded the following average times for production:

Wait	3.0 days	Move	0.5 days
Inspection	0.4 days	Queue	9.3 days
Process	0.2 days		

What is the Manufacturing Cycle Efficiency (MCE)?

a. 50.0%.
b. 1.9%.
c. 52.0%.
d. 5.1%.

MCE = Value-added time ÷ Throughput time
= Process time ÷ Throughput time
= 0.2 days ÷ 10.4 days
= 1.9%

Quick Check ✓

A TQM team at Narton Corp has recorded the following average times for production:

Wait	3.0 days	Move	0.5 days
Inspection	0.4 days	Queue	9.3 days
Process	0.2 days		

What is the delivery cycle time (DCT)?

a. 0.5 days.
b. 0.7 days.
c. 13.4 days.
d. 10.4 days.

Quick Check ✓

A TQM team at Narton Corp has recorded the following average times for production:

Wait	3.0 days	Move	0.5 days
Inspection	0.4 days	Queue	9.3 days
Process	0.2 days		

What is the delivery cycle time (DCT)?

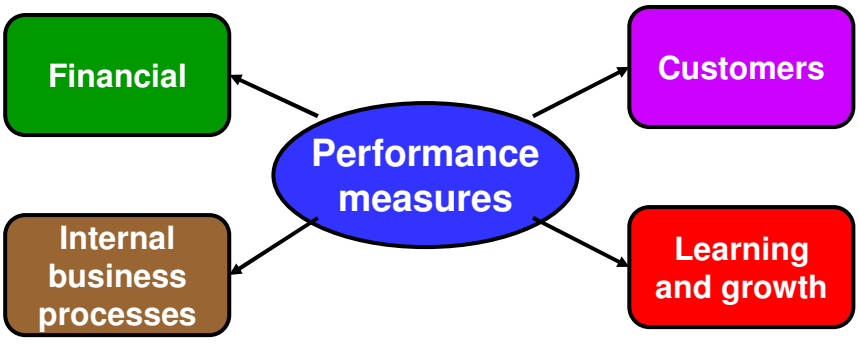
a. 0.5 days.
b. 0.7 days.
c. 13.4 days.
d. 10.4 days.

DCT = Wait time + Throughput time
= 3.0 days + 10.4 days
= 13.4 days

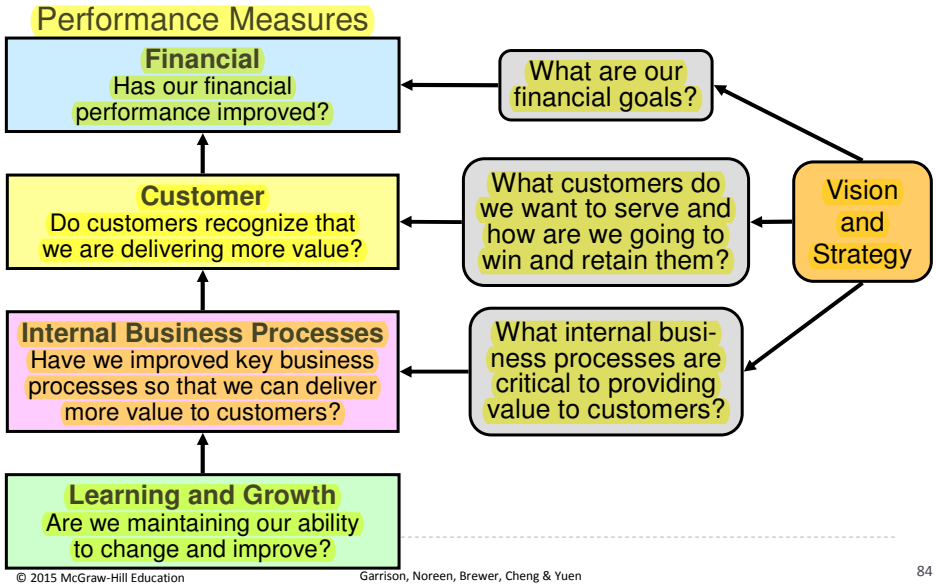
Learning Objective 5

The Balanced Scorecard

Management translates its strategy into performance measures that employees understand and influence.



The Balanced Scorecard: From Strategy to Performance Measures



The Balanced Scorecard: Non-financial Measures

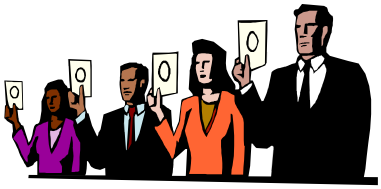
The balanced scorecard relies on non-financial measures in addition to financial measures for two reasons:

❶ Financial measures are lag indicators that summarize the results of past actions. Non-financial measures are leading indicators of future financial performance.

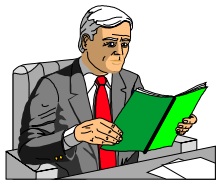
❷ Top managers are ordinarily responsible for financial performance measures – not lower level managers. Non-financial measures are more likely to be understood and controlled by lower level managers.

The Balanced Scorecard for Individuals

The entire organization should have an overall balanced scorecard.



Each individual should have a personal balanced scorecard.



A personal scorecard should contain measures that can be influenced by the individual being evaluated and that support the measures in the overall balanced scorecard.

The Balanced Scorecard

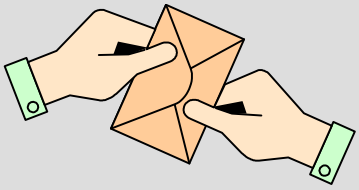
A balanced scorecard should have measures that are linked together on a cause-and-effect basis.

If we improve one performance measure . . . **Then** Another desired performance measure will improve.

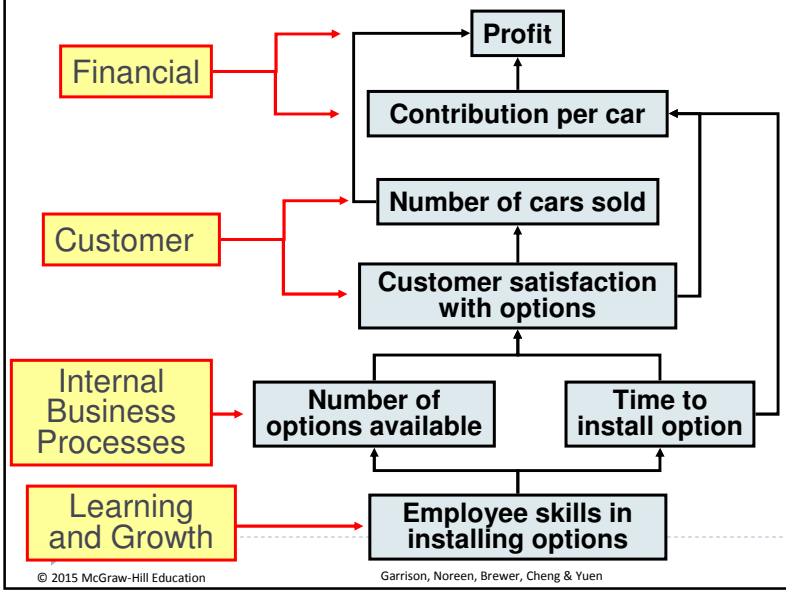
The balanced scorecard lays out concrete actions to attain desired outcomes.

The Balanced Scorecard and Compensation

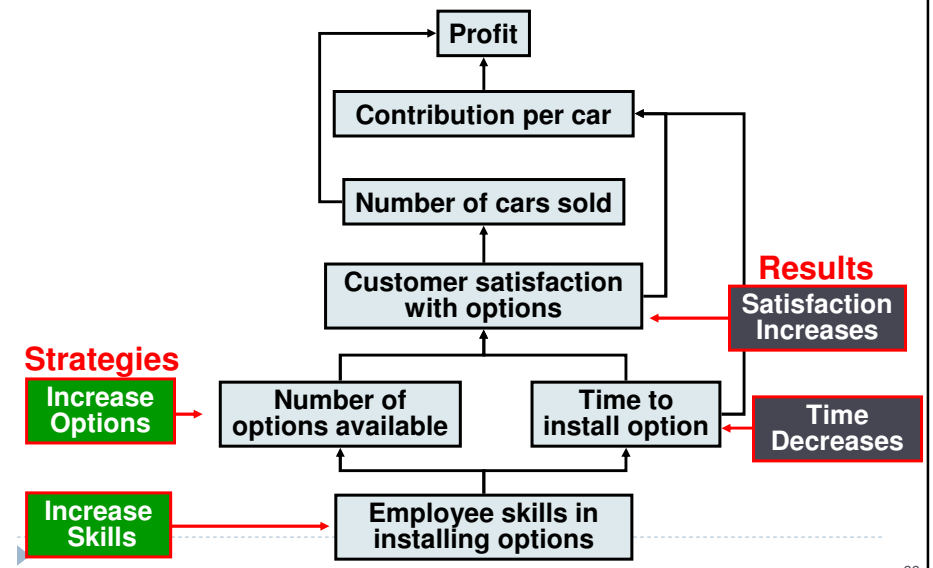
Incentive compensation should be linked to balanced scorecard performance measures.



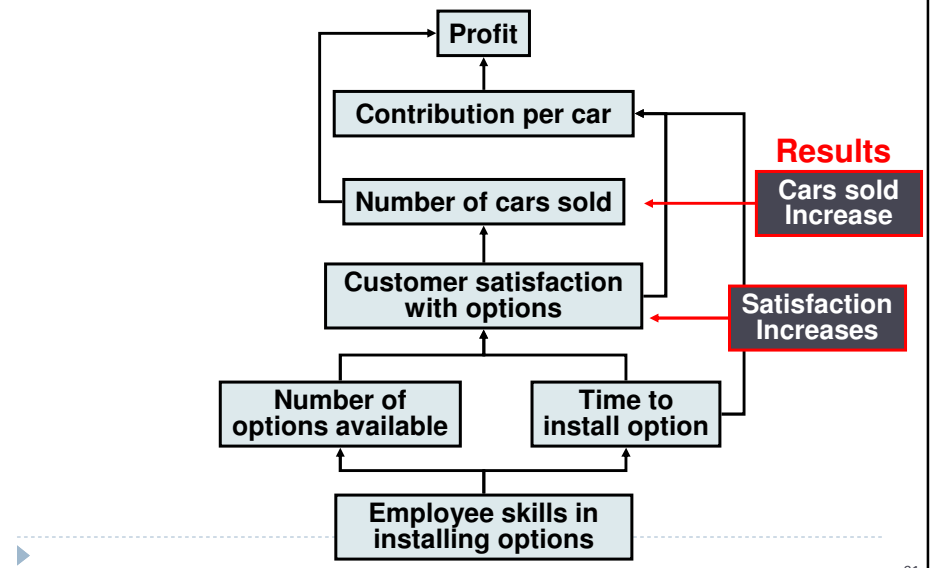
The Balanced Scorecard — Jaguar Example



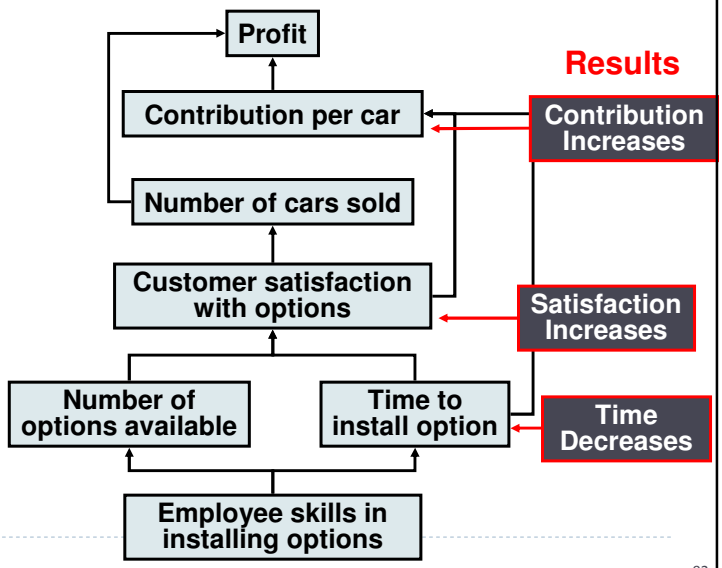
The Balanced Scorecard — Jaguar Example



The Balanced Scorecard — Jaguar Example

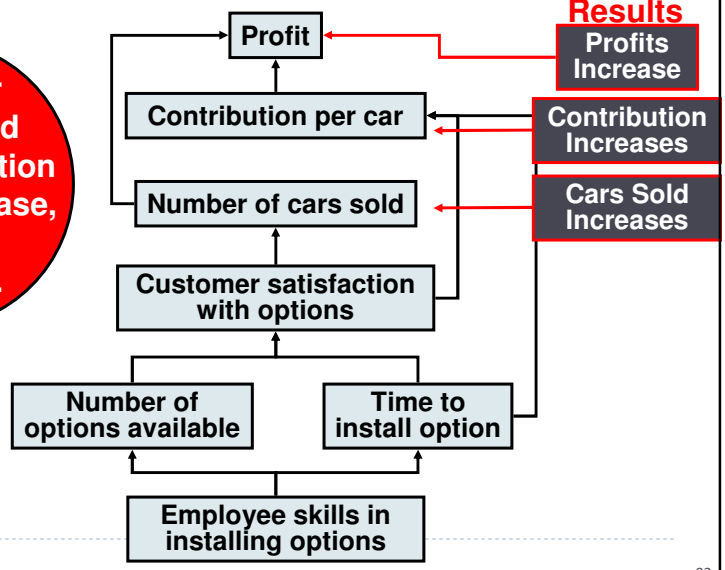


The Balanced Scorecard — Jaguar Example



The Balanced Scorecard — Jaguar Example

If number of cars sold and contribution per car increase, profits increase.



Key Performance Indicators for a Balanced Scorecard

Key performance indicators (KPIs) should address

- Missions and Vision of the organization
- Management principles and objectives (i.e. Execution of strategy)
- Critical success factors of the organization and operations
- Key objectives of the subsidiary/division/department/employee
- Balance of lead and lag measures (i.e. measures that lead to future success and measures that reflect historical performance)

Number of KPI s should b a controllable number.

Summary of the Measures and Their Purposes

		Financial		Customer		Internal Business Process		Learning & Growth	
Performance Measures		F1	F2	C1	C2	IBP1	IBP2	LG1	LG2
Objectives / Critical Success Factors									
Missions & Vision	Employee Satisfaction **							✓	✓
	Customer Satisfaction **			✓	✓				
Management Principles	Innovative Products **		✓	✓					
	Profitable Growth	✓							
	Focus on delivery of quality products to valued customers			✓			✓		
	Responsibilities to Society	✓		✓	✓			✓	✓
Critical Factors	Quality					✓	✓		
	Response Time				✓				
	Cost					✓	✓	✓	✓
Division's Objective	Sales Growth **		✓	✓					

** = Also a critical success factor
F1 = residual income (or EVA™) Improvement
F2 = sales growth
C1 = turnover percentage from key customers
C2 = percentage of delivery accuracy
IBP1 = production defect rate
IBP2 = percentage goods returned to sales
LG1 = employee productivity
LG2 = employee satisfaction index

A Balanced Scorecard Example for a Business Division of a Media Product Manufacturer

		Measures	Targets	Review Frequency	Objectives
Financial					
F1	EVA improvement	$\frac{\text{This year's EVA} - \text{Previous year's EVA}}{\text{Previous year's EVA}}$	15%	Annually	Profitability and effective use of funds
F2	Sales growth	$\frac{\text{This year's sales dollar} - \text{Previous year's sales dollar}}{\text{Previous year's sales dollar}}$	15%	Annually	Sales growth
Customer					
C1	Turnover percentage from key customers	Loss of number of customers with annual revenue of more than $10m.	0%	Frequently (Minimum Quarterly)	• Quality of products and services • Customer satisfaction • Sales and marketing effort
C2	Delivery accuracy	On-time delivery per order	100%	Frequently (Minimum Quarterly)	• Customer satisfaction • Coordinating effort
Internal Business Process					
IBP1	Defects per million units	Defects per million units	3	Monthly	• Quality • Cost
IBP2	Percentage of goods returned	$\frac{\text{Actual sales value of goods returned}}{\text{Sales value before goods returns}}$	0.3%	Monthly	• Production quality • On time delivery
Learning and Growth					
LG1	Employee productivity	Sales dollar per man-hour	$300 per man-hour	Annually	• Employee training and productivity • Employee satisfaction
LG2	Employee satisfaction index	Survey's index score	Index score 85	Six months	Employee satisfaction

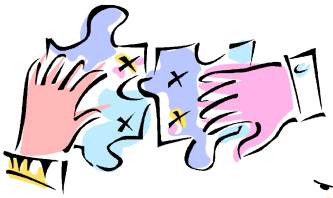
→ Strategic Linkage between measures and perspectives

Transfer Pricing

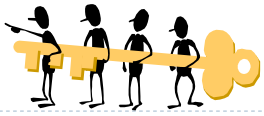
Appendix 13A

Key Concepts/Definitions

A **transfer price** is the price charged when one segment of a company provides goods or services to another segment of the company.



The fundamental objective in setting transfer prices is to motivate managers to act in the best interests of the overall company.

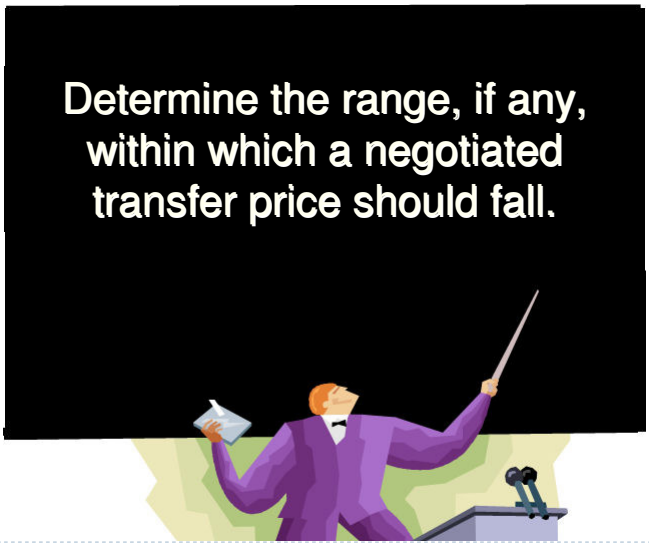


Three Primary Approaches

There are three primary approaches to setting transfer prices:

1. Negotiated transfer prices;
2. Transfers at the cost to the selling division; and
3. Transfers at market price.

Learning Objective 6

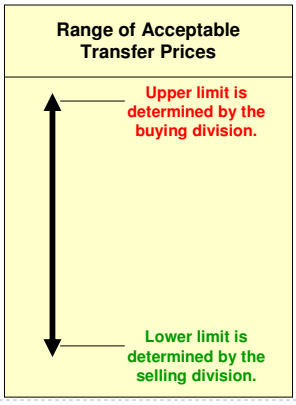


Negotiated Transfer Prices

A negotiated transfer price results from discussions between the selling and buying divisions.

Advantages of negotiated transfer prices:

1. They preserve the autonomy of the divisions, which is consistent with the spirit of decentralization.
2. The managers negotiating the transfer price are likely to have much better information about the potential costs and benefits of the transfer than others in the company.



Grocery Storehouse – An Example

Assume the information as shown with respect to West Coast Plantations and Grocery Mart (both companies are owned by Grocery Storehouse).

West Coast Plantations:			
Naval orange harvest capactiy per month		10,000	crates
Variable cost per crate of naval oranges	$	10	per crate
Fixed costs per month	$	100,000	
Selling price of navel oranges on the outside market	$	25	per crate
Grocery Mart:			
Purchase price of current naval oranges	$	20	per crate
Monthly sales of naval oranges		1,000	crates

Grocery Storehouse – An Example

The selling division's (West Coast Plantations) lowest acceptable transfer price is calculated as:

$$\text{Transfer Price} \geq \text{Variable cost per unit} + \frac{\text{Total contribution margin on lost sales}}{\text{Number of units transferred}}$$

Let's calculate the lowest and highest acceptable transfer prices under three scenarios.

The buying division's (Grocery Mart) highest acceptable transfer price is calculated as:

Transfer Price ≤ Cost of buying from outside supplier

If an outside supplier does not exist, the highest acceptable transfer price is calculated as:

Transfer Price ≤ Profit to be earned per unit sold (not including the transfer price)

Grocery Storehouse – An Example

If West Coast Plantations has sufficient idle capacity (3,000 crates) to satisfy Grocery Mart's demands (1,000 crates), without sacrificing sales to other customers, then the lowest and highest possible transfer prices are computed as follows:

Selling division's lowest possible transfer price:

$$\text{Transfer Price} \geq \$10 + \frac{\$ -}{1{,}000} = \$10$$

Buying division's highest possible transfer price:

Transfer Price ≤ Cost of buying from outside supplier = $ 20

Therefore, the range of acceptable transfer prices is $10 – $20.

Grocery Storehouse – An Example

If West Coast Plantations has no idle capacity (0 crates) and must sacrifice other customer orders (1,000 crates) to meet Grocery Mart's demands (1,000 crates), then the lowest and highest possible transfer prices are computed as follows:

Selling division's lowest possible transfer price:

$$\text{Transfer Price} \geq \$\ 10 + \frac{(\$25 - \$10) \times 1{,}000}{1{,}000} = \$\ 25$$

Buying division's highest possible transfer price:

Transfer Price ≤ Cost of buying from outside supplier = $ 20

Therefore, there is no range of acceptable transfer prices.

Grocery Storehouse – An Example

If West Coast Plantations has some idle capacity (500 crates) and must sacrifice other customer orders (500 crates) to meet Grocery Mart's demands (1,000 crates), then the lowest and highest possible transfer prices are computed as follows:

Selling division's lowest possible transfer price:

$$\text{Transfer Price} \geq \$10 + \frac{(\$25 - \$10) \times 500}{1{,}000} = \$17.50$$

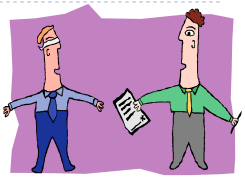
Buying division's highest possible transfer price:

Transfer Price ≤ Cost of buying from outside supplier = $ 20

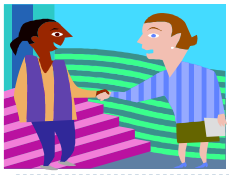
Therefore, the range of acceptable transfer prices is $17.50 – $20.00.

Evaluation of Negotiated Transfer Prices

If a transfer within a company would result in higher overall profits for the company, there is always a range of transfer prices within which both the selling and buying divisions would have higher profits if they agree to the transfer.



If managers are pitted against each other rather than against their past performance or reasonable benchmarks, a non-cooperative atmosphere is almost guaranteed.



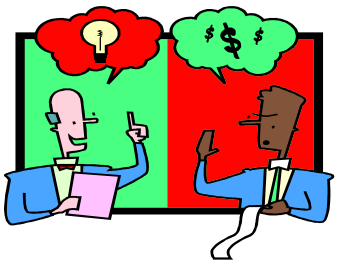
Given the disputes that often accompany the negotiation process, most companies rely on some other means of setting transfer prices.

Transfers at the Cost to the Selling Division

Many companies set transfer prices at either the variable cost or full (absorption) cost incurred by the selling division.

Drawbacks of this approach include:

1. **Using full cost as a transfer price can lead to sub-optimization.**
2. **The selling division will never show a profit on any internal transfer.**
3. **Cost-based transfer prices do not provide incentives to control costs.**



Transfers at Market Price

A market price (i.e., the price charged for an item on the open market) is often regarded as the best approach to the transfer pricing problem.

1. **A market price approach works best when the product or service is sold in its present form to outside customers and the selling division has no idle capacity.**
2. **A market price approach does not work well when the selling division has idle capacity.**

Divisional Autonomy and Suboptimization

The principles of decentralization suggest that companies should grant managers autonomy to set transfer prices and to decide whether to sell internally or externally, even if this may occasionally result in suboptimal decisions.

This way top management allows subordinates to control their own destiny.

End of Chapter 13

14

Performance management information systems

Topic list	Syllabus reference
1 Introduction to planning, control and decision making	E1(a)
2 Management accounting information for strategic planning, control and decision making	E1(a)
3 Management accounting information for management control	E1(a)
4 Management accounting information for operational control	E1(a)
5 Management information systems	E1(b)
6 Open and closed systems	E1(c)

Introduction

Performance management systems, measurement and control is the final section in this Study Text.

This chapter introduces Part E of the syllabus and covers issues relating to **performance management information systems** and their design.

We begin with a look at the **accounting information needs** at all levels of the organisation. Next, we consider the characteristics of a range of management information systems including **transaction processing systems** and **executive information systems.**

The chapter concludes with a short section on **open** and **closed systems**.

Study guide

		Intellectual level
E1	**Performance management information systems**	
(a)	Identify the accounting information requirements and describe the different types of information systems used for strategic planning, management control and operational control and decision making	2
(b)	Define and identify the main characteristics of transaction processing systems; management information systems; executive information systems; and enterprise resource planning systems	2
(c)	Define and discuss the merits of, and potential problems with, open and closed systems with regard to the needs of performance management.	2

Exam guide

Management accounting and information systems are an important part of the F5 syllabus because they play an integral part in producing the information that managers use for performance measurement and performance management.

Performance management information systems provide the information which enables performance measurement to take place.

You could face a question specifically on the topics in this chapter or you may need to use them as a framework for a wider question.

Exam focus point

Exam questions on the topics in this chapter are likely to require written rather than computational answers as the topics mainly require you to **discuss, identify** or **define** certain aspects of management accounting and information systems. For example, how well does the system in an organisation provide management with the information they need?

1 Introduction to planning, control and decision making

FAST FORWARD

Strategic planning is the process of deciding on objectives for the organisation, on changes in these objectives, on the resources to attain these objectives, and on the policies that are to govern the acquisition, use and disposition of these resources.

Management control is the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organisation's objectives. It is sometimes called **tactics** or **tactical planning**.

Operational control (or **operational planning**) is the process of assuring that specific tasks are carried out effectively and efficiently.

Within, and at all levels of the organisation, **information** is continually flowing back and forth, being used by people to formulate **plans** and take **decisions,** and to draw attention to the need for **control** action, when the plans and decisions don't work as intended.

Key terms

Planning means formulating ways of proceeding. **Decision making** means choosing between various alternatives. These two terms are virtually inseparable: you decide to plan in the first place and the plan you make is a collection of decisions.

Strategic decisions are long-term decisions and are characterised by their wide scope, wide impact, relative uncertainty and complexity.

Control is used in the sense of monitoring something so as to keep it on course, like the 'controls' of a car, not (or not merely) in the sense of imposing restraints or exercising tyrannical power over something. We have more to say about control later in this Study Text.

Question

Planning, control and decision making

This simple scenario may help you to understand how these terms are interrelated.

Mr and Mrs Average need to go to a supermarket to buy food and other household items. They make a list beforehand that sets out all the things they need. As they go round the supermarket they tick off the items on the list. If a particular item is not available they choose an alternative from the range on the shelves. They also buy a bottle of wine and two bars of chocolate. These were not on their original list.

(a) What part or parts of this activity would you describe as planning?
(b) There are several examples of decision making in this story. Identify three of them.
(c) What part or parts of this activity would you describe as control?

Answer

We would describe making the list as planning, but it could also be an example of decision making because Mr and Mrs Average have to decide what items will go on the list. Ticking off the items is control and choosing alternatives is 'control action' involving further decision making.

You should be able to answer the various parts of this question without further help.

1.1 Information for planning, control and decision making

Robert **Anthony**, a leading writer on organisational control, suggested what has become a widely used hierarchy, classifying the information used at different management levels for planning, control and decision making into three tiers: **strategic planning**, **management control** and **operational control**.

We consider each tier in turn in sections 2 – 4.

Key terms

Strategic planning. The process of deciding on objectives of the organisation, on changes in these objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use and disposition of these resources.

Management (or **tactical**) **control**. The process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organisation's objectives. It is sometimes called tactics or tactical planning.

Operational control (or **operational planning**). The process of assuring that specific tasks are carried out effectively and efficiently.

2 Management accounting information for strategic planning, control and decision making

FAST FORWARD

Management accounting information can be used to support strategic planning, control and decision making. Strategic management accounting differs from traditional management accounting because it has an **external** orientation and a **future** orientation.

This section identifies the accounting information requirements for strategic planning, control and decision making.

2.1 Future uncertainty

Much strategic planning is uncertain.

(a) Strategic plans may cover a **long period** into the future, perhaps five to ten years ahead or even longer.

(b) Many strategic plans involve big changes and **new ventures**, such as capacity expansion decisions, decisions to develop into new product areas and new markets, and so on.

Inevitably, management accounting information for strategic planning will be based on incomplete data and will use **forecasts** and **estimates.**

(a) It follows that management accounting information is unlikely to give clear guidelines for management decisions and should incorporate some **risk and uncertainty analysis** (eg sensitivity analysis).

(b) For longer term plans, **discounted cash flow techniques** ought to be used in financial evaluation.

(c) The management accountant will be involved in the following.

  (i) Project evaluation
  (ii) Managing cash and operational matters
  (iii) Reviewing the outcome of the project (post implementation review)

2.2 External and competitor orientation

Much management accounting information has been devised for internal consumption.

However, it is important to balance this with a consideration of external factors.

(a) Strategic planning and control decisions involve **environmental considerations**.
(b) A strategy is pursued in relation to **competitors.**

2.3 The challenge for management accountants

Traditional accounting systems have had a number of **perceived failings**.

(a) **Direction towards financial reporting**. Historical costs are necessary to report to shareholders, but the classifications of transactions for reporting purposes are not necessarily relevant to decision-making.

(b) **Misleading information** – particularly with regard to overhead absorption.

(c) **Neatness** rather than **usefulness**.

(d) **Internal focus**. Management accounting information has been too inward looking, (for example focusing on achieving internal performance targets, like budgets). However, organisations also need to focus on customers and competition.

(e) **Inflexibility** and an inability to cope with change.

The challenge lies in providing more relevant information for **strategic planning**, **control** and **decision making**. Traditional management accounting systems may not always provide this.

(a) **Historical costs** are not necessarily the best guide to decision making. One of the criticisms of management accounting outlined by *Kaplan, Bromwich and Bhimani* is that management accounting information is biased towards the past rather than the future.

(b) **Strategic issues** are not easily detected by management accounting systems.

(c) **Financial models** of some sophistication are needed to enable management accountants to provide useful information.

2.4 What is strategic management accounting?

The aim of strategic management accounting is to provide information that is relevant to the process of strategic planning and control.

Key term

Strategic management accounting is a form of management accounting in which emphasis is placed on information about factors which are external to the organisation, as well as non-financial and internally-generated information.

2.4.1 External orientation

The important fact, which distinguishes strategic management accounting from other management accounting activities, is its **external orientation**, towards customers and competitors, suppliers and perhaps other stakeholders. For example, whereas a traditional management accountant would report on an organisation's own revenues, the strategic management would report on market share or trends in market size and growth.

(a) **Competitive advantage is relative**. Understanding competitors is therefore of prime importance.

For example, knowledge of competitors' costs, as well as a firm's own costs, could help inform strategic choices: a firm would be unwise to pursue a cost leadership strategy without first analysing its costs in relation to the cost structures of other firms in the industry.

(b) **Customers** determine if a firm has competitive advantage.

2.4.2 Future orientation

A criticism of traditional management accounts is that they are **backward looking**.

(a) Decision making is a forward– and outward-looking process.

(b) Accounts are based on **costs**, whereas decision making is concerned with **values**.

Strategic management accountants will use **relevant costs** (ie **incremental** costs and **opportunity** costs) for decision making. We looked at this topic in Chapter 6.

2.4.3 Goal congruence

Business strategy involves the activities of many different functions, including marketing, production and human resource management. The strategic management accounting system will require **inputs from many areas of the business**.

(a) Strategic management accounting translates the consequences of different strategies into a **common accounting language for comparison**.

(b) It **relates business operations to financial performance**, and therefore helps ensure that **business activities** are **focused on shareholders' needs** for profit. In **not-for-profit organisations** this will not apply as they do not focus on shareholder profitability. (We look at not-for-profit organisations in more detail later in this Study Text.)

It **helps to ensure goal congruence**, again by translating business activities into the common language of finance. Goal congruence is achieved when individuals or groups in an organisation take actions which are in their self-interest and also in the best interest of the organisation as a whole.

2.5 What information could strategic management accounting provide?

Bearing in mind the need for **goal congruence**, **external orientation** and **future orientation**, some **examples** of strategic management accounting are provided below.

Item	Comment
Competitors' costs	What are they? How do they compare with ours? Can we beat them? Are competitors vulnerable because of their cost structure?
Financial effect of competitor response	How might competitors respond to our strategy? How could their responses affect our sales or margins?
Product profitability	A firm should want to know not just what profits or losses are being made by each of its products, but why one product should be making good profits whereas another equally good product might be making a loss
Customer profitability	Some customers or groups of customers are worth more than others
Pricing decisions	Accounting information can help to analyse how profits and cash flows will vary according to price and prospective demand
The **value of market share**	A firm ought to be aware of what it is worth to increase the market share of one of its products
Capacity expansion	Should the firm expand its capacity, and if so by how much? Should the firm diversify into a new area of operations, or a new market?
Brand values	How much is it worth investing in a brand which customers will choose over competitors' brands?
Shareholder wealth	Future profitability determines the value of a business
Cash flow	A loss-making company can survive if it has adequate cash resources, but a profitable company cannot survive unless it has sufficient liquidity
Effect of **acquisitions** and **mergers**	How will the merger affect levels of competition in the industry?
Decisions to **enter or leave a business area**	What are the barriers to entry or exit? How much investment is required to enter the market?

3 Management accounting information for management control

FAST FORWARD

Management control is at the level below strategic planning in Anthony's decision-making hierarchy and is concerned with decisions about the efficient and effective use of resources to achieve objectives.

Management control, which we briefly touched on in Section 1, is at the level below strategic planning in Anthony's decision-making hierarchy. While strategic planning is concerned with setting objectives and strategic targets, management control is concerned with **decisions about the efficient and effective use of an organisation's resources to achieve these objectives or targets**.

(a) **Resources** (which can be categorised as a series of 'M's): **m**oney, **m**anpower, **m**achinery, **m**ethods, **m**arkets, **m**anagement, and **m**anagement information.

(b) **Efficiency** in the use of resources means that **optimum output is achieved from the input resources used**. It relates to the combinations of men, land and capital (eg how much production work should be automated) and to the productivity of labour, or material usage.

(c) **Effectiveness** in the use of resources means that the **outputs obtained are in line with the intended objectives or targets.**

The time horizon involved in management control will be shorter than at the strategic decisions level, there will be much greater precision and the focus of information will be narrower.

Management control activities are **short-term non-strategic activities**.

3.1 Examples of management control (or tactical) planning activities

(a) Preparing budgets for the next year for sales, production, inventory levels and so on
(b) Establishing measures of performance by which profit centres can be gauged
(c) Developing a product for launching in the market
(d) Planning advertising and marketing campaigns
(e) Establishing a line-of-authority structure for the organisation

3.2 Examples of management control activities

(a) Ensuring that budget targets are reached, or improved upon
(b) Ensuring that other measures of performance are satisfactory, or even better than planned
(c) Where appropriate, changing the budget because circumstances have altered

Management control is an essentially routine affair in that it tends to be carried out in a series of **regular** planning and comparison procedures, that is annually, monthly or weekly, so that all aspects of an organisation's activity are systematically reviewed. For example, a budget is usually prepared annually, and control reports issued every month or four weeks. Strategic planning, in contrast, might be irregular and occur when opportunities arise or are identified.

3.3 Information requirements

Features of management control information

(a) Primarily generated **internally** (but may have a limited external component)
(b) Embraces the **entire organisation**
(c) **Summarised** at a relatively **low level**
(d) **Routinely** collected and disseminated
(e) Relevant to the **short** and **medium terms**
(f) Often **quantitative** (labour hours, volumes of sales and production)
(g) Collected in a **standard** manner
(h) Commonly expressed in **money terms**

Types of information

(a) Productivity measurements

(b) Budgetary control or variance analysis reports
(c) Cash flow forecasts
(d) Manning levels
(e) Profit results within a particular department of the organisation
(f) Labour revenue statistics within a department
(g) Short-term purchasing requirements

3.4 Source of information

A large proportion of this information will be generated from **within the organisation** (it has an **endogenous source**) and it will often have an accounting emphasis. Tactical information is usually prepared regularly, perhaps weekly, or monthly.

3.5 Management control and strategic planning compared

The dividing line between strategic planning and management control is **not a clear one.** Many decisions include issues ranging from strategic to tactical. Nevertheless, there is a basic distinction between the two levels of decision:

(a) The decision to launch a new brand of calorie-controlled frozen foods is a strategic plan (business strategy), but the choice of ingredients for the frozen meals involves a management control decision.
(b) A decision that the market share for a product should be 25% is a strategic plan (competitive strategy), but the selection of a sales price of $2 per unit, supported by other marketing decisions about sales promotion and direct sales effort to achieve the required market share, would be a series of management control decisions.

Management control tends to be carried out in a series of **regular** planning and comparison procedures (annually, monthly, weekly). For example, a budget is usually prepared annually and control reports issued every month or four weeks. **Strategic planning**, in contrast, might be **irregular** and occur when opportunities arise or are identified.

4 Management accounting information for operational control

FAST FORWARD

Operational control, the lowest tier in Anthony's hierarchy, is concerned with assuring that specific tasks are carried out effectively and efficiently.

The third and lowest tier in Anthony's hierarchy of decision making consists of operational control decisions. Just as 'management control' plans are set within the guidelines of strategic plans, so too are 'operational control' plans set within the guidelines of both strategic planning and management control.

4.1 Example: Link between strategic plans and operational/management control decisions

(a) Senior management may decide that the company should increase sales by 5% per annum for at least five years – **a strategic plan.**
(b) The sales director and senior sales managers will make plans to increase sales by 5% in the next year, with some provisional planning for future years. This involves planning direct sales resources, advertising, sales promotion and so on. Sales quotas are assigned to each sales territory – **a tactical management control decision**.
(c) The manager of a sales territory specifies the weekly sales targets for each sales representative. This is an **operational control decision:** individuals are given tasks which they are expected to achieve.

Operational control decisions are therefore much **more narrowly focused** and have a **shorter time frame** than tactical or strategic decisions.

4.2 Operational control activities

Although we have used an example of selling tasks to describe operational control, it is important to remember that this level of decision making **occurs in all aspects of an organisation's activities**, even when the activities cannot be scheduled nor properly estimated because they are non-standard activities (such as repair work, answering customer complaints).

The scheduling of **unexpected or 'ad hoc' work** must be done at **short notice**, which is a feature of much operational decision making. In the repairs department, for example, routine preventive maintenance can be scheduled, but breakdowns occur unexpectedly and repair work must be scheduled and controlled 'on the spot' by a repairs department supervisor.

Operational control activities can also be described as **short-term non-strategic activities.**

4.3 Information requirements

(a) **Operational information** is information which is **needed for the conduct of day-to-day implementation of plans**.

(b) It will include much **'transaction data'** such as data about customer orders, purchase orders, cash receipts and payments and is likely to have an **endogenous source**.

(c) Operating information must usually be **consolidated into totals** in management reports before it can be used to prepare management control information.

(d) The amount of **detail** provided in information is likely to **vary with the purpose for which it is needed**, and operational information is likely to go into much more detail than tactical information, which in turn will be more detailed than strategic information.

(e) Whereas tactical information for management control is often expressed in money terms, operational information, although quantitative, is more often **expressed in terms of units, hours, quantities of material and so on.**

5 Management information systems

You should be aware of the main characteristics of transaction processing systems, management information systems, executive information systems and enterprise resource planning systems.

5.1 Transaction processing systems

FAST FORWARD

Transaction processing systems (TPS) collect, store, modify and retrieve the transactions of an organisation.

Key term

A **transaction** is an event that generates or modifies data that is eventually stored on an information system.

Transaction processing systems (TPS) collect, store, modify and retrieve the transactions of an organisation.

The four important characteristics of a TPS are as follows.

(a) **Controlled processing**. The processing must support an organisation's operations.

(b) **Inflexibility**. A TPS wants every transaction processed in the same way regardless of user or time. If it were flexible there would be too many opportunities for non-standard operations.

(c) **Rapid response**. Fast performance is critical. Input must become output in seconds so customers don't wait.

(d) **Reliability**. Organisations rely heavily on transaction processing systems with failure potentially stopping business. Back-up and recovery procedures must be quick and accurate.

5.1.1 Properties of a TPS

The components of a TPS include hardware, software and people. People in a TPS can be divided into three categories – users, participants and people from the environment.

The **users** are employees of the company who own the TPS. The users will not alter data themselves, but will use the TPS to provide inputs for other information systems such as inventory control.

Participants are direct users of the system. They are the people who enter the data. Participants include data entry operators, customer service staff and people working at checkouts.

People from the environment are people who sometimes require the services of a TPS as they enter transactions and validate data, such as customers withdrawing money from an ATM.

5.1.2 Types of TPS

Batch transaction processing (BTP) collects transaction data as a group and processes it later, after a time delay, as batches of identical data.

An example of BTP is cheque clearance. A cheque is a written order asking the bank to pay an amount of money to the payee. The payee cannot withdraw the money until the cheque is cleared. This involves checking that the payer has enough money in their account to cover the cheque. It usually takes three working days – cheques are cleared in a group during a quiet period of the day.

Real time transaction processing (RTTP) is the immediate processing of data. It involves using a terminal or workstation to enter data and display results and provides instant confirmation. A large number of users can perform transactions simultaneously but access to a central online database is required.

An example of an RTTP system is a reservation system involved in setting aside a service or product for the customer to use at a future time. Such systems are commonly used for flight or train bookings and hotel reservations and require an acceptable response time as transactions are made in the presence of customers.

5.2 Management information systems

FAST FORWARD

Management information systems (MIS) convert data from mainly internal sources into information (eg summary reports, exception reports). This information enables managers to make timely and effective decisions for planning, directing and controlling the activities for which they are responsible.

Key term

Management information systems (MIS) generate information for monitoring performance (eg productivity information) and maintaining co-ordination (eg between purchasing and accounts payable).

MIS extract, process and summarise data from the TPS and provide periodic (weekly, monthly, quarterly) reports to managers.

Today MIS are becoming more flexible by providing access to information whenever needed, rather than pre-specified reports on a periodic basis. Users can often generate more customised reports by selecting subsets of data (such as listing the products with 2 per cent increase in sales over the past month), using different sorting options (by sales region, by salesperson, by highest volume of sales) and different display choices (graphical, tabular).

MIS have the following characteristics:

- Support structured decisions at operational and management control levels.
- Designed to report on existing operations.
- Have little analytical capability.
- Relatively inflexible.
- Have an internal focus.

5.3 Executive information systems

FAST FORWARD

Executive information systems (EIS) draw data from the MIS and allow communication with external sources of information.

Key term

Executive information systems (EIS) provide a generalised computing and communication environment to senior managers to support strategic decisions.

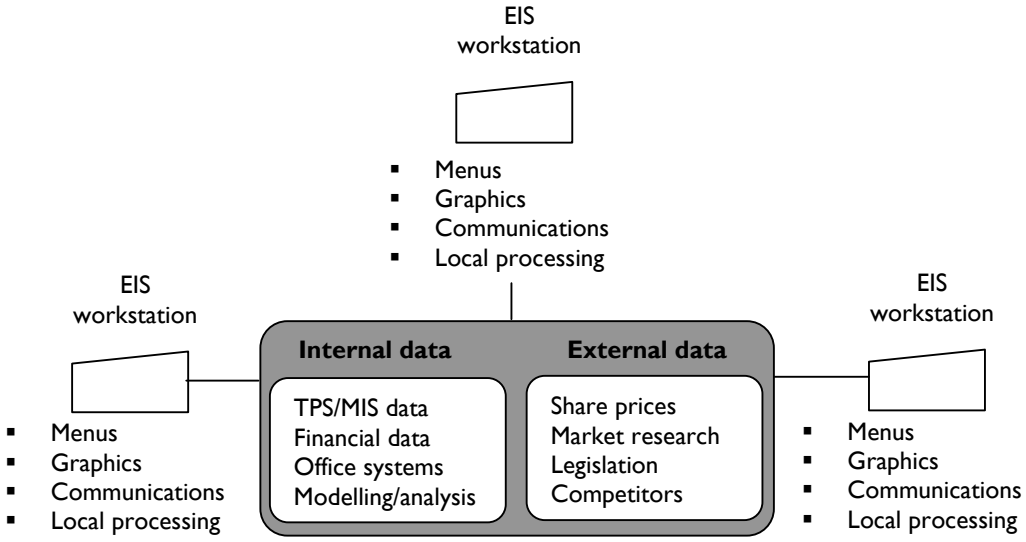
Executive Information Systems draw data from the MIS and allow communication with **external sources** of information. EIS are designed to facilitate senior managers' access to information quickly and effectively. They have

- menu driven user friendly interfaces.
- interactive graphics to help visualisation of the situation.
- communication capabilities linking the executive to external databases.

An EIS summarises and tracks **strategically critical information** from the MIS and includes data from external sources e.g. competitors, legislation and databases such as Reuters.

A good way to think about an EIS is to imagine the senior management team in an aircraft cockpit, with the instrument panel showing them the status of all the key business activities. EIS typically involve lots of data analysis and modelling tools such as **what-if analysis** to help **strategic decision making**.

A model of a typical EIS is shown below:



5.4 Enterprise resource planning systems

FAST FORWARD

Executive resource planning systems (ERP systems) are modular software packages designed to integrate the key processes in an orgnanisation so that a single system can serve the information needs of all functional areas.

Most organisations across the world have realised that in a rapidly changing environment, it is impossible to create and maintain a custom-designed software package which will cater to all their requirements and also be completely up-to-date. Realising the requirement of user organisations some of the leading software companies have designed **Enterprise resource planning** software which will offer an integrated software solution to all the functions of an organisation.

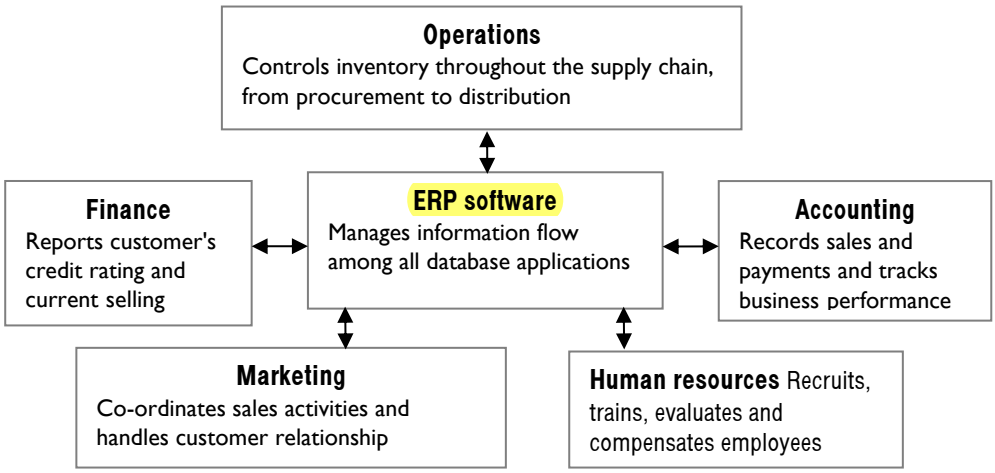
ERP systems are large-scale information systems that impact an organisation's accounting information systems . These systems permeate all aspects of the organisation. A key element necessary for the ERP to

provide business analysis is the data warehouse. This is a database designed for quick search, retrieval, query, and so on.

Key term

> **Executive resource planning systems** (ERP systems) are modular software packages designed to integrate the key processes in an organisation so that a single system can serve the information needs of all functional areas.

ERP systems primarily support business operations – those activities in an organisation that support the selling process, including order processing, manufacturing, distribution, planning, customer service, human resources, finance and purchasing. ERP systems are function-rich, and typically cover all of these activities – the principal benefit being that the same data can easily be shared between different departments.



This **integration** is accomplished through a database shared by all the application programs. For example, when a customer service representative takes a sales order it is entered in the common database and it automatically updates the manufacturing backlog, the price, the credit system and the shipping schedule.

ERP systems work in **real-time**, meaning that the **exact status** of everything is always available. Further, many of these systems are global. Since they can be deployed at sites around the world, they can work in **multiple languages and currencies**. When they are, you can immediately see, for example, exactly how much of a particular part is on-hand at the warehouse in Japan and what its value is in yen or dollars.

5.4.1 Example: ERP

Say you are running a bicycle shop. Once you make a sale, you enter the order on the ERP system. The system then updates the inventory of bicycles in the shop, incorporates the sale into the financial ledgers, prints out an invoice, and can prompt you to purchase more bikes to replace the ones that you have sold. The ERP system can also handle repair orders and manage the spare parts inventory. It can also provide automated tools to help you forecast future sales and to plan activities over the next few weeks. There may also be data query tools present to enable sophisticated management reports and graphs to be generated. In addition, the system may handle the return of defective items from unhappy customers, the sending out of regular account statements to customers, and the management of payments to suppliers.

ERP systems can assist with the scheduling and deployment of all sorts of resources, physical, monetary and human. A water company might use their ERP system to schedule a customer repair job, deploy staff to the job, verify that it got done, and subsequently bill the customer. An oil company might use it ensure that their tankers are loaded, that a shipping itinerary is prepared and completed on schedule, and that all the equipment and people required for loading and unloading the cargo in each port are present at the right times. A bus company might use their system to manage customer bookings, record receipts and plan preventative maintenance activities for their fleet.

5.4.2 Benefits of ERP

The benefits that may be realised from a successfully-implemented ERP project include:

(a) Allowing **access** to the system to any individual with a terminal linked to the system's central server.

(b) **Decision support features**, to assist management with decision-making.

(c) In many cases, extranet **links to the major suppliers and customers**, with electronic data interchange facilities for the automated transmission of documentation such as purchase orders and invoices.

(d) A lot of inefficiencies in the way things are done can be removed. The company can adopt so-called **'best practices'** – a cookbook of how similar activities are performed in world-class companies.

(e) A company can **restructure its processes**, so that different functions (such as accounting, shipping and manufacturing) work more closely together to get products produced.

(f) An organisation can align itself to a single plan, so that all activities, all across the world, are smoothly **co-ordinated**.

(g) Information and work practices can be **standardised**, so that the terminology used is similar, no matter where you work in the company.

(h) A company could do a lot more work for a lot more customers without needing to employ so many people.

6 Open and closed systems

FAST FORWARD

Systems can be **open** or **closed.**

The word **system** is impossible to define satisfactorily (the tax 'system', the respiratory 'system', the class 'system'). Basically it means **something that connects things up.**

6.1 Closed systems

Key term

A **closed system** is isolated and shut off from the environment. Information is not received from or provided to the environment.

Closed systems are seldom, if ever, found in naturally occurring situations. A typical example of a closed system would be a chemical reaction that takes place under controlled conditions within a laboratory. Closed systems can be created to **eliminate external factors** and then used to **investigate the relationship between known variables** in an experiment.

All social systems have some interaction with the environment and so cannot be closed systems. A commercial organisation, for example, could not operate as a closed system as it would be unable to react to the external environment and so would not be commercially or economically viable.

6.2 Open systems

Key term

An **open system** is connected to and interacts with the environment and is influenced by it.

An open system **accepts inputs from its surroundings, processes the inputs in some manner and then produces an output.** The **input parameters** can be **foreseen** or be **unpredictable.** Similarly, **outputs** can either be **predicted** or **unforeseen.** For example, consider a metal smelting works. Predictable inputs would include items like the raw materials and coal while the predictable outputs would be ash, smoke and the smelted metal. If the raw material to be smelted became contaminated in some way, it is likely that an undesirable product would be produced. These are examples of unforeseen inputs and outputs.

All social systems, including **business organisations,** are **open systems**. For example, a business is a system where management decisions are influenced by or have an influence on suppliers, customers, competitors, the government and society as a whole. Employees are obviously influenced by what they do in their job, but as members of society at large they are also part of the external environment, just as their views and opinions expressed within the business are often a reflection of their opinions as members of society at large.

6.3 Open and closed systems and performance management

Systems are rarely either open or closed, but open to some influences and closed to others. Organisations must carefully choose the **form of management accounting system** based on the respective scenario.

The chemical laboratory could use a **closed system.** Here, performance is largely influenced by an **internally created environment** and external factors would not affect the output or result of the activity.

However, if an organisation's performance is influenced by **environmental factors**, it should operate an open system that accepts input from the external factors and examines their impact on performance output.

The advantages of an open system are:

(a) It encourages strong **communication**, which helps an organisation to operate efficiently and become effective.

(b) It adapts to the **changing environment** and there is scope for absorbing new pieces of information into the system.

(c) It highlights the **inter-dependencies** of different operations and processes within a business and the environment in which it operates.

(d) It helps business leaders and managers to focus on the **external factors** that shape behaviours and patterns within the organisation.

Management should consider the potential limitations of open systems:

(a) **Non-linear relationships** could exist among variables. A small change in one variable could cause a large change in another and affect the business result in a positive or negative way.

(b) It could prove **difficult to measure** the success of the system, specifically metrics relating to input, processing and output as well as the interrelationship among them.

Question — Open and closed systems

Run-Smart Co manufactures sports clothing for professional athletes. Products are designed to prevent injury and aid the post-exercise recovery process. The company regularly seeks feedback from athletes regarding the effectiveness of products and recommendations to take forward.

Required
Explain which kind of marketing system the organisation has.

Answer

Run-Smart Co operates an open system. The company interacts with its environment. It takes feedback from its customers about the effectiveness of its products and accordingly advises the product design department about customer preferences. Based on customer feedback, the company may decide to alter product design and specification.

Chapter Roundup

- **Strategic planning** is the process of deciding on objectives for the organisation, on changes in these objectives, on the resources to attain these objectives, and on the policies that are to govern the acquisition, use and disposition of these resources.
- **Management control** is the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organisation's objectives. It is sometimes called **tactics** or **tactical planning**.
- **Operational control** (or **operational planning**) is the process of assuring that specific tasks are carried out effectively and efficiently.
- **Management accounting information** can be used to support strategic planning, control and decision making. Strategic management accounting differs from traditional management accounting because it has an **external** orientation and a **future** orientation.
- **Management control** is at the level below strategic planning in Anthony's decision-making hierarchy and is concerned with decisions about the efficient and effective use of resources to achieve objectives.
- **Operational control**, the lowest tier in Anthony's hierarchy, is concerned with assuring that specific tasks are carried out effectively and efficiently.
- **Transaction processing systems** (TPS) collect, store, modify and retrieve the transactions of an organisation.
- **Management information systems** (MIS) convert data from mainly internal sources into information (eg summary reports, exception reports). This information enables managers to make timely and effective decisions for planning, directing and controlling the activities for which they are responsible.
- **Executive information systems** (EIS) draw data from the MIS and allow communication with external sources of information.
- **Executive resource planning systems** (ERP systems) are modular software packages designed to integrate the key processes in an organisation so that a single system can serve the information needs of all functional areas.
- Systems can be **open** or **closed**.

Quick Quiz

1 Which of the following is **not** a feature of strategic management accounting?

A External orientation
B Historic focus
C Non-financial orientation
D Inputs from many areas of a business

2 What can strategic management accounting provide information or guidance about to a business?

3 Which of the following are characteristics of a transaction processing system?

(a) Reliability

(b) Controlled processing

(c) Inflexibility

(d) Rapid response

4 *Match the terms to the correct definitions*

Terms

(a) Transaction processing systems

(b) Executive information systems

(c) Executive resource planning systems

Definitions

1 Draw data from the MIS and allow communication with external sources of information

2 Collect, store modify and retrieve the transactions of an organisation

3 Modular software packages designed to integrate the key processes in an organisation

5 Open systems are seldom, if ever, found in naturally occurring situations. **True/False?**

6 Interaction with other systems or the outside environment is a feature of open systems. **True/False?**

Answers to Quick Quiz

1 B Strategic management accounting is forward-looking, by contrast to traditional management accounting which is a backward-looking process.

2 You could list a number of suggestions here. The Study Text gives examples but you may have others. Our list includes:

(a) **Competitors' costs**
(b) **Financial effect of competitor response**
(c) **Product profitability**
(d) **Customer profitability**
(e) **Pricing decisions**
(f) The **value of market share**
(g) **Capacity expansion**
(h) Decisions to **enter** or **leave** a **business area**
(i) **Brand values**
(j) **Shareholder wealth**
(k) **Cash flow**
(l) Effect of **acquisitions** and **mergers**
(m) Introduction of **new technology**

3 All of them

4 (a) 2; (b) 1; (c) 3

5 False. It is closed systems that are seldom found.

6 True

Now try the question below from the Exam Question Bank

Number	Level	Marks	Time
Q18	Introductory	12	22 mins

15

Sources of management information and management reports

Topic list	Syllabus reference
1 Sources of management accounting information	E2 (a)
2 Information for control purposes	E2 (b)
3 Costs of information	E2 (c),(d)
4 Costs, benefits and limitations of external information	E2 (e)
5 Controls over generating and distributing internal information	E3 (a)
6 Security and confidential information	E3 (b)

Introduction

In this chapter we look at **internal and external sources of management information** including financial accounting records, government agencies and consumer panels.

We also consider the costs, benefits and limitations of external information and the principal controls and procedures involved in generating and distributing information.

Study guide

		Intellectual level
E2	**Sources of management information**	
(a)	Identify and discuss the principal internal and external sources of management accounting information	2
(b)	Demonstrate how these principal sources of information might be used for control purposes	2
(c)	Identify and discuss the direct data capture and process costs of management accounting information	2
(d)	Identify and discuss the indirect costs of producing information	2
(e)	Discuss the limitations of using externally generated information	2
E3	**Management reports**	
(a)	Discuss the principal controls required in generating and distributing internal information.	2
(b)	Discuss the procedures that may be necessary to ensure security of highly confidential information that is not for external consumption.	2

Exam guide

The topics covered in this chapter could form part of a scenario question in the exam. Ensure that you are able to **identify** and **discuss** internal and external sources of management accounting information as well as potential controls and security procedures to safeguard data.

One of the competences you require to fulfil performance objective 12 of the PER is collating and collating data from information systems. This data forms reports to management and is key for control and monitoring performance. In this chapter we look at information sources and procedures that may be necessary to ensure security of highly confidential information.

1 Sources of management accounting information

FAST FORWARD

Internal sources of **information** include the financial accounting records and other systems closely tied to the accounting system.

Capturing data/information from inside the organisation involves the following:

(a) A **system for collecting or measuring transactions data** – eg sales, purchases, inventory, revenue and so on – which sets out procedures for **what** data is collected, **how frequently**, **by whom** and by **what methods,** and how it is **processed,** and **filed** or **communicated.**

(b) **Informal communication** of information between managers and staff (eg, by word-of-mouth or at meetings).

(c) **Communication between managers.**

1.1 Sources of monetary and non-monetary information

1.1.1 The financial accounting records

You are by now very familiar with the idea of a system of sales ledgers and purchase ledgers, general ledgers, cash books and so on. These records provide a **history of an organisation's monetary transactions**.

Some of this information is of great value outside the accounts department – most obviously, for example, sales information for the marketing function. Other information, like cheque numbers, is of purely administrative value within the accounts department.

You will also be aware that to maintain the integrity of its financial accounting records, an organisation of any size will have systems for and **controls over transactions**. These also give rise to valuable information.

An inventory control system is the classic example: besides actually recording the monetary value of purchases and inventory in hand for external financial reporting purposes, the system will include purchase orders, goods received notes, goods returned notes and so on, and these can be analysed to provide management information about **speed** of delivery, say, or the **quality** of supplies.

1.1.2 Other internal sources

Much information that is not strictly part of the financial accounting records nevertheless is closely tied in to the accounting system:

(a) Information about personnel will be linked to the **payroll** system. Additional information may be obtained from this source if, say, a project is being costed and it is necessary to ascertain the availability and rate of pay of different levels of staff.

(b) Much information will be produced by a **production** department about machine capacity, movement of materials and work in progress, set up times, maintenance requirements and so on.

(c) Many service businesses – notably accountants and solicitors – need to keep detailed records of the **time** spent on various activities, both to justify fees to clients and to assess the efficiency of operations.

Staff themselves are one of the primary sources of internal information. Information may be obtained either **informally** in the course of day-to-day business or **formally** through **meetings, interviews** or **questionnaires**.

Question Sources of information

Think of at least one piece of non-monetary information that a management accountant might obtain from the following sources in order to make a decision about a new product.

(a) Marketing manager
(b) Vehicle fleet supervisor
(c) Premises manager
(d) Public relations officer
(e) Head of research

1.2 External sources of information

FAST FORWARD

External information tends to be more relevant to strategic and tactical decisions than to operational decisions. (Benchmarking is an exception.)

Capturing information from outside the organisation might be carried out formally and entrusted to particular individuals, or might be 'informal'.

1.3 Formal collection of data from outside sources

FAST FORWARD

There are many **sources** of **external information**.

(a) A company's **tax specialists** will be expected to gather information about changes in tax law and how this will affect the company.

(b) Obtaining information about any new legislation on health and safety at work, or employment regulations, must be the responsibility of a particular person – for example the company's **legal expert** or **company secretary** – who must then pass on the information to other managers affected by it.

(c) Research and development work often relies on information about other R & D work being done by another company or by government institutions. An **R & D official** might be made responsible for finding out about R & D work outside the company.

(d) **Marketing managers** need to know about the opinions and buying attitudes of potential customers. To obtain this information, they might carry out market research exercises.

Informal gathering of information from the environment **goes on all the time, consciously or unconsciously**, because the employees of an organisation learn **what is going on in the world around** them – perhaps from the media, meetings with business associates or the trade press.

Organisations hold external information such as invoices, advertisements and so on **from customers and suppliers**. But there are many occasions when an active search outside the organisation is necessary.

1.4 Specific external sources

FAST FORWARD

Secondary data, such as government statistics or data provided by on-line databases, is not collected by or for the user. **Primary data** – more expensive than secondary data – is more tailored to the user's exact needs. Market research is an example.

1.4.1 Directories

Examples (of business directories) include the following (although there are many others).

(a) Kompass Register (Kompass)
(b) Who owns Whom (Dun and Bradstreet)
(c) Key British Enterprises (Dun and Bradstreet)

1.4.2 Associations

There are associations in almost every field of business and leisure activity, and ACCA itself is an organisation. Associations collect and publish data for their members that can be of great interest to other users. For example, although the services of the Road Haulage Association (RHA) are geared towards transport businesses, their analysis of fuel prices rises could be useful to all motorists.

1.4.3 Government agencies

The government is a major source of economic information and information about industry and population trends. Examples of UK government publications are as follows. Most of these are available online and can be downloaded for free.

(a) **National Statistics**, divided into 12 separate themes such as economy, health and labour
(b) The **Digest of UK Energy Statistics** (published annually)
(c) **Housing and Construction Statistics** (published quarterly)
(d) **Financial Statistics** (monthly)
(e) **Economic Trends** now published with **Labour Market Trends** in the **Economic Labour Market Review**
(f) **Public Sector Employment Trends** (annual) gives details of employment in the public sector in the UK
(g) **A variety of publications on the Department for Business, Innovation and Skills website** give data on industrial and commercial trends at home and overseas
(h) **Social Trends** (annual)

Official statistics are also published by other government bodies such as the European Union, the United Nations and local authorities.

1.4.4 Other published sources

This group includes all other publications, including some **digests** and **pocket books** and **periodicals** (often available in the public libraries).

1.4.5 Syndicated services

The sources of secondary data we have looked at so far have generally been **free** because they are **in the public domain**. Inexpensiveness is an advantage that can be offset by the fact that the information is **unspecific** and needs **considerable analysis** before being useable. A middle step between adapting secondary data and commissioning primary research is the **purchase of data collected by market research companies**. The data tend to be expensive but less costly than primary research.

1.4.6 Consumer panels

A form of continuous research which result in secondary data often bought in by marketers is that generated by **consumer panels**. These constitute a representative sample of individuals and households whose buying activity in a defined area is monitored either continuously (every day, with results aggregated) or at regular intervals, **over a period of time**. There are panels set up to monitor purchases of groceries, consumer durables, cars, baby products and many others.

1.5 Information from customers

Customers can provide useful information.

(a) Firms send out satisfaction questionnaires and market research.
(b) Customer comments and complaints sent voluntarily can suggest improvements.

1.6 Information from suppliers

Supplier information comes in several categories.

Information	Comment
'Bid' information	A supplier pitching for a product will detail products, services and prices. This is before a deal is done.
Operational information	If a firm has placed a particular job or contract with a supplier, the supplier may provide details of the stages in the manufacturing process, eg the delivery time.
Pricing information	Component prices vary from industry to industry; some are volatile.
Technology	Technological developments in the supplier's industry can affect the type of input components, their cost and their availability.

1.7 The Internet

FAST FORWARD

The **Internet** increases the richness of external data and reduces the cost of searching for it.

Key term

The **Internet** is a global network connecting millions of computers.

The Internet offers efficient, fast and cost effective **email**, and massive information **search and retrieval facilities**. There is a great deal of financial information available and users can also **access publications** and news releases issued by the Treasury and other Government departments.

Businesses are also using it to **provide information (cheaply) about their own products and services** and to conduct **research** into their competitors' activities.

The Internet offers a **speedy** and **impersonal** way of getting to know the basics (or even the details) of the services that a company provides.

The Internet is commonly used to **access information about suppliers**.

(a) A firm can visit a supplier's website for details of products and services.

(b) The user can search a number of websites through a browser. Note that the Internet may not contain every supplier; arguably it should not be relied upon as the sole source.

(c) A number of business-to-business sites have been opened. Participating members offer their services, and can offer quotes. A lot of the communication search problem is avoided.

Case Study

papiNet.org is a global community involved in supply chain processes for the paper and printing industries. It supports the use of papiNet.xml, a standard language in which suppliers and customers can exchange information about paper.

Significance

- Printers have a wider opportunity to source paper from suppliers all over the world.
- The lead-time between finding information and obtaining a quote is much reduced, leading to quicker decision making.
- Customers (publishers) can have a better idea of conditions and trends in the market.
- This information is now much cheaper to obtain.

1.8 Database information

A **management information system** or **database** should provide managers with a **useful flow** of **relevant information** which is **easy to use** and **easy to access**. Information is an important corporate resource. Managed and used effectively it can provide considerable competitive advantage and so it is a worthwhile investment.

It is now possible to access large volumes of generally available information through databases held by public bodies and businesses.

(a) Some **newspapers** offer computerised access to old editions, with search facilities looking for information on particular companies or issues. FTPROFILE, for example, provides on-line business information.

(b) **Public databases** are also available for inspection.

Dun and Bradstreet provide general business information. **AC Nielsen** operate on-line information regarding products and market share.

Developments in information technology allow businesses to have access to the databases of **external organisations**. Reuters, for example, provides an on-line information system about money market interest rates and foreign exchange rates to firms involved in money market and foreign exchange dealings, and to the treasury departments of a large number of companies. The growing adoption of technology at **point of sale** provides a potentially invaluable source of data to both retailer and manufacturer.

Case Study

CACI is a company which provides market analysis, information systems and other data products to clients. It advertises itself as 'the winning combination of marketing and technology'.

As an illustration of the information available to the marketing manager through today's technology, here is an overview of some of their products.

Paycheck	This provides income data for all 1.6 million individual post codes across the UK. This enables companies to see how mean income distribution varies from area to area
People* UK	This is a mix of geodemographics, life stage and lifestyle data. It is person rather than household specific and is designed for those companies requiring highly targeted campaigns
iConnect	Allows the marketer to communicate with online potential customers
Channel Choice	Provides a detailed picture of channel preference in the UK. How customers manage and arrange financial services products
StreetValue	A residential property price database based on postcode with over 9 million records
Acorn	This stands for A Classification of Residential Neighbourhoods, and has been used to profile residential neighbourhoods by post code since 1976. It has recently been updated to reflect demographic shifts such as increased car ownership and people working from home. ACORN classifies people in any trading area or on any customer database into 56 types
GreenACORN	Classifies and groups consumers' attitudes and behaviours to green issues
Ocean	This database contains 40 million names and addresses in the UK. It offers actual and modelled lifestyle data, consumer classifications, email addresses and phone numbers

Marketing resources and techniques are used all over the world especially in growing markets. The *BRIC economies* of Brazil, Russia, India and China are expected to outgrow all others according to Goldman Sachs's working paper *BRICs Monthly* May 2010. (*www2.goldmansachs.com/ideas/brics/brics-decade-doc.pdf*, accessed 10 July 2010.)

According to *Goldman Sachs*, over the ten years to 2010, the BRIC economies have delivered over one third of world growth in GDP and grown to one quarter of the world economy. Whilst industrial production may continue to grow, a new element, the growth in new middle class consumers will drive global consumption. This trend also suggests that the types of products the BRICs import will change – with there being a shift away from low value-added items, and an increase in the import of high value-added items such as cars, office equipment and technology.

1.8.1 On-line databases

Most external databases are online databases, which are very large computer files of information, supplied by **database providers** and managed by **'host'** companies whose business revenue is generated through charges made to **users**. Access to such databases is open to anyone prepared to pay, and who is equipped with a PC plus internet access and communication software. These days there are an increasing number of companies offering free Internet access. Most databases can be accessed around the clock.

1.9 Data warehouses

A **data warehouse** contains **data from a range of internal** (for instance sales order processing system, nominal ledger) **and external sources**. One reason for including individual transaction data in a data warehouse is that the user can drill-down to access transaction-level detail if necessary. Data is increasingly obtained from newer channels such as customer care systems, outside agencies or Web sites.

The warehouse provides a coherent **set of information** to be **used across the organisation** for management **analysis** and **decision making**. The reporting and query tools available within the warehouse should facilitate management reporting and analysis. This analysis can be enhanced through using **data mining** software to identify trends and patterns in the data.

2 Information for control purposes

FAST FORWARD

Much control is achieved through the **feedback** of internal information.

Control is dependent on the **receipt and processing of information**, both to plan in the first place and to compare actual results against the plan, so as to judge what control measures are needed.

Plans will be based on an **awareness of the environment** (from externally-sourced information) and on the **current performance of the organisation** (based on internal information such as, for example, sales volumes, costs and so on).

Control is achieved through **feedback** – information about actual results produced from within the organisation (that is internal information) such as variance control reports for the purpose of helping management with control decisions.

The sources of information outlined earlier in the chapter are used to supply **management with data for control**.

For instance **payroll records** give information on the total cost of staff and a breakdown into cost by function, role, bonuses, taxes and so on which can show management how different cost areas are performing. As payroll is often a large cost and to some extent discretionary or variable it is important to monitor and control.

Equally, information on **wage payments** will also be relevant to an organisation's cash flow planning. As far as possible, organisations like to keep their cash balances within certain limits. So, by knowing the amount and timing of wages and salary payments the organisation can make any adjustments to ensure cash balances remain within the desire limits.

Information about **inventory** levels can also be instructive. For example, some lines of inventory may be slow moving, but management will need to establish why this is. Has a competitor introduced a rival product, or reduced its prices? Have there been any quality issues with the product which have damaged its reputation in the market place? Is the product in a long-term decline and should production of it be discontinued? In this respect, information about quantities of a product sold compared to quantities produced could also be very useful. For example, if a product is selling very well, production may need to be increased so that demand can be satisfied and any stock-outs avoided.

Customer data is vital in any business that strives to focus on customers. Thus data on buying habits, where customers shop, what they buy and who the main customers are all gives feedback for control purposes.

Equally, data from customer sales accounts can provide useful information on how customer debts are aged. A report on the ageing of debt can provide management with information on how successful its receivables control policy is. Management's response will be different if half of the customer debt has been outstanding for more than say, 60 days, compared with only 5% of the debt being outstanding for more than 60 days.

External data is useful for benchmarking provided the correct or appropriate benchmarks are selected.

3 Costs of information

FAST FORWARD

Be aware of the **cost** of inefficient use of information.

The costs to an organisation of the collection, processing and production of internal information can be divided into three types. These are direct data capture costs, process costs, and indirect costs of producing internal information.

Cost	Examples
Direct data capture	• Use of bar coding and scanners (eg, in retailing and manufacturing) • Employee time spent filling in timesheets • Secretary time spent taking minutes at a meeting
Processing	• Payroll department time spent processing and analysing personnel costs • Time for personnel to input data (eg, in relation to production) on to the MIS
Inefficient use of information	• Information collected but not needed • Information stored long after it is needed • Information disseminated more widely than necessary • Collection of the same information by more than one method • Duplication of information

4 Costs, benefits and limitations of external information

FAST FORWARD

There are specific **costs** not only in obtaining data, but also in maintaining the infrastructure supporting data collection and distribution.

4.1 Costs

Identifying the costs of obtaining external data is not difficult. Effectively there are five types of cost.

Cost	Examples
Direct search costs	• Cost of a marketing research survey (these can be considerable) • Subscriptions to online databases • Subscriptions to magazines, services • Download fees
Indirect access costs	• Management and employee time spent finding useful information • Wasted management and employee time on unsuccessful searches for information • Spurious accuracy / redundancy • Wasted management and employee time on excessive searching • Wasted time on trying to find spurious accuracy
Management costs	• Recording, processing and dissemination of external information • Wasted time due to information overload • Wasted time on excessive processing

Cost	Examples
Infrastructure costs	• Installation and maintenance of computer networks, servers, landlines etc to facilitate Internet searching and internal electronic communication
Time-theft	• Wasted time caused by abuse of Internet and e-mail access facilities • Lost time • Cost of monitoring and disciplinary procedures • Information overload

As can be seen from the earlier case example, the **Internet** can significantly reduce search time and search cost. More information can be had for less money.

4.2 Benefits and limitations of external data

The benefits can be quantified in the following terms:

(a) The quality of **decisions** that the data has influenced

(b) **Risk / uncertainties** avoided by having the data

(c) The organisation's ability to **respond** appropriately to the environment or to **improve** its performance

One of the principal **limitations** of external data is that its **quality** cannot be guaranteed. Its **quality** will depend on the following characteristics:

(a) The **producers** of the data. (They may have an axe to grind; trade associations may not include data which runs counter to the interests of its members.)

(b) The **reason for the data** being collected in the first place

(c) The **collection method**. (Random samples with a poor response rate are particularly questionable.)

(d) The **age** of the data. (Government statistics and information based on them are often relatively dated, though information technology has speeded up the process.)

(e) **How parameters were defined**. (For instance, the definition of family used by some researchers could well be very different to that used by others.)

Using poor quality external data can have disastrous consequences: projects may proceed on the basis of overstated demand levels; opportunities may not be grasped because data is out of date and does not show the true state of the market.

4.2.1 Advantages arising from the use of secondary (as opposed to primary) data

(a) The data may solve the problem without the need for any primary research: **time and money is thereby saved**.

(b) **Cost savings** can be substantial because secondary data sources are a great deal **cheaper** than those for primary research.

(c) **Secondary data**, while not necessarily fulfilling all the needs of the business, can be of great use:

  (i) **Setting the parameters**, defining a hypothesis, highlighting variables, in other words, helping to focus on the central problem.

  (ii) **Providing guidance**, by showing past methods of research and so on, for primary data collection.

  (iii) **Helping to assimilate the primary research** with past research, highlighting trends and the like.

  (iv) **Defining sampling parameters** (target populations, variables and so on).

4.2.2 Disadvantages to the use of secondary data

(a) **Relevance**. The data may not be relevant to the research objectives in terms of the data content itself, classifications used or units of measurement.

(b) **Cost**. Although secondary data is usually cheaper than primary data, some specialist reports can cost large amounts of money. A cost benefit analysis will determine whether such secondary data should be used or whether primary research would be more economical.

(c) **Availability**. Secondary data may not exist in the specific product or market area.

(d) **Bias**. The secondary data may be biased, depending on who originally carried it out and for what purpose. Attempts should be made to obtain the most original source of the data, to assess it for such bias.

(e) **Accuracy**. The accuracy of the data should be questioned.

The golden rule when using secondary data is **use only meaningful data**. It is obviously sensible to begin with internal sources and a firm with a good management information system should be able to provide a great deal of data. External information should be consulted in order of ease and speed of access.

5 Controls over generating and distributing internal information

FAST FORWARD

Controls need to be in place over the generation of internal information in routine and ad-hoc reports.

One of the competencies you require to fulfil performance objective 6 of the PER is the ability to protect software and data from security risks such as theft, viruses or unauthorised access. You can apply the knowledge you obtain from this section to help to demonstrate this competence.

5.1 Controls over generating internal information in routine reports

(a) Carry out a **cost/benefit analysis.** How **easy** is the report to prepare **compared** with the **usefulness** of the decisions that can be taken as a result of its production? The cost of preparing the report will in part be determined by **who** is preparing it. The cost can be reduced if its preparation can be **delegated** by a director to a junior member of staff.

(b) A **trial** preparation process should be carried out and a **prototype** prepared. Users should be asked to confirm that their requirements will be met.

(c) A **consistent** format and consistent definitions should be used to ensure that reporting is **accurate** and the chance of misinterpretation is minimised. Standard **house styles** will ensure that time is not wasted by managers, staff and report writers on designing alternative layouts.

(d) The **originator** of the report should be clearly identified so that users' queries can be dealt with quickly.

(e) The report should set out clearly **limits to the action** that users **can take as a result** of the information in the report. This will ensure that the organisation's system of responsibilities is maintained.

(f) The **usefulness** of the report should be **assessed** on a periodic basis to ensure that its production is necessary.

5.2 Controls over generating internal information in ad hoc reports

(a) Carry out a **cost/benefit** analysis as above.

(b) Ensure that the required information **does not already exist** in another format.

(c) Brief the report writer so that the **relevant information only** is provided.

(d) Ensure that the **originator** is clearly identified.

(e) Ensure that report writers have access to the **most up-to-date information.**

5.3 Controls over distributing internal information

FAST FORWARD

A **procedures manual** sets out controls over distributing internal information.

(a) **Procedures manual** (for standard reports)

(i) Indicates what standard reports should be issued and when (eg budgetary control report for department X on a monthly basis)

(ii) Sets out the format of standard reports

(iii) Makes clear who should receive particular standard reports

(iv) Indicates whether reports should be shredded (if confidential) or just binned

(v) Makes clear what information should be regarded as highly confidential

(b) **Other controls**

(i) **Payroll and personnel information** should be kept in a **locked** cabinet or be protected by **password** access on a computer system.

(ii) All employees should be **contractually required not to divulge confidential information.**

(iii) The internal mail system should make use of **'private and confidential' stamps**.

(iv) An appropriate **e-mail policy** should be set up.

(1) E-mail is best suited to short messages rather than detailed operational problems.

(2) E-mail provides a relatively permanent means of communication, which may be undesirable for confidential/'off-the-record' exchanges.

(3) Staff may suffer from information overload.

(4) It is uncomfortable to read more than a full screen of information. Longer messages will either not be read properly or will be printed out (in which case they may just as well have been circulated in hard copy form).

(v) **Physical computer security**

Internal security: Management can regulate which staff members have access to different types of data. For instance, access to HR records may be restricted to members of the HR team by keeping these records on a separate server or database. In this way, only certain terminals may access servers with sensitive or confidential data stored on them.

External security: The organisation can also protect its data from external access by using **firewalls.**

A firewall is designed **to restrict access** to a network be selectively allowing or blocking inbound traffic to parts of an organisation's system. It examines message entering and exiting the system and blocks any not conforming to specified criteria. In this way, firewalls can be used to protect data and databases from being access by unauthorised people or terminals. For example, access to key servers could be restricted to a small number of terminals only.

5.4 If information is held on a server

(a) Controls over viruses and hacking
(b) Clearly understood policy on the use of e-mails and corporate IT
(c) Password system to restrict access to particular files

6 Security and confidential information

FAST FORWARD

A number of procedures can be used to ensure the **security of highly confidential information that is not for external consumption:**

- Passwords
- Logical access systems
- Database controls
- Firewalls
- Personnel security planning
- Anti-virus and anti-spyware software

Disaffected employees have potential to do deliberate damage to valuable corporate data or systems, especially if the information system is networked, because they may have access to parts of the system that they are not really authorised to use.

If the organisation is linked to an external network, **people outside** the company (hackers) may also be able to get into the company's internal network, either to steal data or to damage the system.

Case Study

Sony PlayStation

In April 2011, a hacker breached the security surrounding Sony's PlayStation system.

Reports at the time suggested that up to 77 million PlayStation users could have personal details, email addresses and credit card numbers stolen following the hacker getting into the company's systems and obtaining customer information. There were also suggestions that the breach could lead to the information of every PlayStation user who plays online video games being compromised.

Following the breach, Sony admitted that an 'illegal and unauthorised intrusion' had occurred, which resulted in the loss of a significant amount of personal information, which could potentially be used in identity theft scams.

Following the attack, Sony employed an independent security firm to conduct a thorough investigation into what happened, and it contacted all users to ensure them it had 'taken steps to enhance security and strengthen out network infrastructure by re-building our system to provide you with greater protection of your personal information.'

Various **procedures** are therefore necessary to **ensure the security of highly confidential information that is not for external consumption.**

6.1 Passwords

Passwords are a set of characters allocated to a person, terminal or facility which have to be keyed into the system before further access is permitted.

In order to access a system the user needs first to enter a string of characters. If what is entered matches a password issued to an authorised user or valid for that particular terminal, the system permits access. Otherwise the system **shuts down** and may **record the attempted unauthorised access.**

Keeping track of these attempts can alert managers to repeated efforts to break into the system; in these cases the culprits might be caught, particularly if there is an apparent pattern to their efforts.

The restriction of access to a system with passwords is effective and widely used but the widespread and growing use of PCs and networks is making physical isolation virtually impossible. The wider use of information systems requires that access to the system becomes equally widespread and easy. Requirements for system security must be balanced by the operational requirements for access: rigidly enforced isolation of the system may significantly reduce the value of the system.

6.2 Logical access systems

Whereas **physical access control (doors, locks and so on)** is concerned with the prevention of unauthorised persons **gaining access to the hardware**, **logical access control** is concerned with **preventing those who already have access to a terminal or a computer from gaining access to data or software.**

In a logical access system, data and software, or individual computer systems, will be **classified according to the sensitivity and confidentiality of data:**

(a) Thus payroll data or details of the draft corporate budget for the coming year may be perceived as highly sensitive and made available to identified individuals only.
(b) Other financial information may be made available to certain groups of staff only, for example members of the finance function or a certain grade of management.
(c) Other data may be unrestricted.

A logical access system performs three operations when access is requested:

(a) Identification of the user
(b) Authentication of user identity
(c) Check on user authority

6.3 Database controls

Databases present a particular problem for computer security. In theory, the database can be **accessed by large numbers of people**, and so the possibility of **alteration, unauthorised disclosure or fraud is so much greater than with application-specific files.**

It is possible to construct **complicated password systems**, and the system can be **programmed** to give a limited view of its contents to particular users or restrict the disclosure of certain types of information to particular times of day. It is possible to build a set of **privileges** into the system, so allowing authorised users with a particular password to access more information.

There are problems ensuring that individuals do not circumvent the database by means of **inference**, however. If you ask enough questions, you should be able to infer from the replies the information you are really seeking.

For example, the database forbids you to ask if John is employee Category A. However, if you know there are only three employee categories, A, B, and C, and there is no prohibition on asking about categories B and C, you can work out the members of category A by process of elimination (ie neither B, nor C, therefore A).

These so-called **inference controls** exist to make this difficult by **limiting the number of queries, or by controlling the overlap between questions.**

6.4 Firewalls

Systems can have firewalls to **prevent unauthorised access into company systems**. Firewalls can be implemented in both **hardware and software**, or a combination of both. Firewalls are frequently used to **prevent unauthorised Internet users from accessing private networks connected to the Internet, especially Intranets.** All messages entering or leaving the Intranet pass through the firewall, which examines each message and blocks those that do not meet specified security criteria.

As well as preventing unauthorised access onto company systems, firewalls can also be used to help protect a company's data from corruption by viruses.

6.5 Encryption

Information transmitted from one part of an organisation to another may be intercepted. Data can be encrypted (**scrambled**) in an attempt to make it **unintelligible to eavesdroppers**.

6.6 Other safety measures

Authentication is a technique for making sure that a message has come from an authorised sender.

Dial back security operates by requiring the person wanting access to the network to dial into it and identify themselves first. The system then dials the person back on their authorised number before allowing them access.

All attempted violations of security should be automatically **logged** and the log checked regularly. In a multi-user system, the terminal attempting the violation may be automatically disconnected.

6.7 Personal data

In recent years there has been a growing popular fear that **information about individuals which is stored on computer files** and processed by computer can be **misused**.

In particular, it is felt that an individual could easily be **harmed** by the existence of computerised data about himself which was **inaccurate** or **misleading** and which could be **transferred** to unauthorised third parties at high speed and little cost.

As a result most countries have introduced **legislation** designed to protect the individual. In the UK the current legislation is the Data Protection Act 1998.

6.8 Personnel security planning

Certain employees will always be placed in a position of trust, for example senior systems analysts, the database administrator and the computer security officer. With the growth of networks, almost all employees may be in a position to do damage to a computer system. A recent report claims that 80% of hacking is done by employees.

Although most employees are honest and well intentioned, it may be relatively easy for individuals to **compromise the security** of an organisation if they wish to do so. The following types of measure are therefore necessary.

(a) Careful recruitment
(b) Job rotation
(c) Supervision and observation by a superior
(d) Review of computer usage (eg via systems logs)
(e) Enforced vacations

The key is that **security should depend on the minimum possible number of personnel;** although this is a weakness, it is also a strength.

6.9 Anti-virus and anti-spyware software

The growth of the Internet has led to increased exposure to security risks. Two particular risks derive from exposure to **computer viruses** and to **spyware.**

Computer viruses typically arrive by email and are triggered when the user opens the email and an attachment. **The virus** is a self-replicating computer programme that **infiltrates and then damages a computer system.**

Spyware is a type of programme that **watches** what users do with their computer and then **sends that information** over the Internet to a third party. Customers of online bank accounts have experienced particular problems with spyware when their personal financial data has been captured by keylogging software.

Software has been developed to counteract these risks. **Anti-virus software** works to achieve this by

(a) **Scanning files** to look for known viruses
(b) **Identifying suspicious behaviour** from any computer programme that might indicate infection

Anti-spyware software combats spyware in two ways.

(a) Real-time protection which prevents the installation of spyware by **blocking software** and activities known to represent spyware

(b) **Detection** and **removal** of spyware by scanning software and removing files and entries that match known spyware

Chapter Roundup

- **Internal** sources of **information** include the financial accounting records and other systems closely tied to the accounting system.
- **External information** tends to be more relevant to strategic and tactical decisions than to operational decisions. (Benchmarking is an exception.)
- There are many sources of external information.
- **Secondary data**, such as government statistics or data provided by on-line databases, is not collected by or for the user. **Primary data** – more expensive than secondary data – is more tailored to the user's exact needs. Market research is an example.
- The **Internet** increases the richness of external data and reduces the cost of searching for it.
- Much control is achieved through the **feedback** of internal information.
- Be aware of the **cost** of inefficient use of information.
- There are specific **costs** to obtaining data, but also to maintaining the infrastructure supporting data collection and distribution.
- **Controls** need to be in place over the generation of internal information in routine and ad-hoc reports.
- A **procedures manual** sets out controls over distributing internal information.
- A number of procedures can be used to ensure **the security of highly confidential information that is not for external consumption:**
  - Passwords
  - Logical access systems
  - Database controls
  - Firewalls
  - Personnel security planning
  - Anti-virus and anti-spyware software

Quick Quiz

1 'Published data is always reliable.' **True or false?**

2 *Provide an example for each of the following costs of obtaining external information.*

Direct search costs ……..

Indirect access costs ……..

Management costs ……..

Infrastructure costs ……..

Time-theft ……..

3 Organisations have many sources they can use for external data. List six of these.

4 *Choose the correct words from those highlighted.*

Logical/physical access control is concerned with preventing those who **do not have access/already have access** to a terminal or computer from gaining access to **hardware/data or software.**

5 Five measures to control the ability of individuals to compromise the security of an organisation were listed in the chapter. What are they?

1 ……..

2 ……..

3 ……..

4 ……..

5 ……..

6 A number of procedures can be used to make sure confidential data is kept secure. List five of these.

Answers to Quick Quiz

1 False. 'Reliability' of data for a decision is determined by its age, the sample and data definitions. By 'published' data, include the Internet – a source of falsehoods as well as information.

2 See Section 4.1.

3 Directories, Trade associations, Government agencies, periodicals/journals, market research data, and consumer panels

4 Logical
already have access
data or software

5
- Careful recruitment
- Job rotation
- Supervision and observation by a superior
- Review of computer usage (for example via systems logs)
- Enforced vacations

6 Passwords, logical access systems, database controls, firewalls, encryption, personnel security planning, anti-virus and anti-spyware software

(We list more than five to cover all of the possibilities mentioned in the chapter)

Now try the question below from the Exam Question Bank

Number	Level	Marks	Time
Q19	Introductory	15	27 mins

16

Performance measurement

Topic list	Syllabus reference
1 Performance measurement	E4
2 Financial performance indicators	E4 (a)
3 Non-financial performance indicators	E4 (b)
4 Short-termism and manipulation	E4 (c)
5 The balanced scorecard	E4 (d)
6 Building Block model	E4 (d), (e)

Introduction

This chapter begins by introducing the term **performance measurement** and then describes the various performance measures that are used by various types of entity. Variances are an important measure of performance that you have already met.

It is important that the performance of an organisation is monitored, and this is most commonly done by calculating a number of ratios.

The chapter concludes by considering alternative views of performance measurement such as the **balanced scorecard** and **building blocks** which offer a contrast to the more **traditional** approaches.

Study guide

		Intellectual level
E4	**The scope of performance measurement**	
(a)	Describe, calculate and interpret financial performance indicators (FPIs) for profitability, liquidity and risk in both manufacturing and service businesses. Suggest methods to improve these measures	2
(b)	Describe, calculate and interpret non-financial performance indicators (NFPIs) and suggest methods to improve the performance indicated	2
(c)	Explain the causes and problems created by short-termism and financial manipulation of results and suggest methods to encourage a long term view	2
(d)	Explain and interpret the Balanced Scorecard, and the Building Block model proposed by Fitzgerald and Moon	2
(e)	Discuss the difficulties of target setting in qualitative areas	2

Exam guide

You must be able to **explain** as well as calculate performance indicators and **apply** your analysis to the organisation in the question. This has been a feature of all of the F5 exams so far. The organisations will not necessarily be limited companies.

There is an article on interpreting financial data in *Student Accountant*, April 2008.

1 Performance measurement 6/08, 12/10

FAST FORWARD

Performance measurement aims to establish how well something or somebody is doing in relation to a plan.

Performance measures may be divided into two groups.

- Financial performance indicators
- Non-financial performance indicators

Exam focus point

The July 2010 issue of *Student Accountant* contains an article on **performance management** written by the **examiner**. Ensure that you are familiar with this article.

Performance measurement aims to establish how well something or somebody is doing in relation to a plan. The 'thing' may be a machine, a factory, a subsidiary company or an organisation as a whole. The 'body' may be an individual employee, a manager or a group of people.

Performance measurement is a **vital part of** the **control process.**

1.1 Performance measures

Different measures are appropriate for different businesses. Factors to consider:

(a) **Measurement needs resources –** people, equipment and time to collect and analyse information. The costs and benefits of providing resources to produce a performance indicator must be carefully weighed up.

(b) **Performance must be measured in relation to something**, otherwise measurement is meaningless. Overall performance should be measured against the **objectives** of the organisation and the **plans** that result from those objectives. If the organisation has no clear objectives, the first step in performance measurement is to set them. The second is to identify the factors that are critical to the success of those objectives.

(c) **Measures must be relevant**. This means finding out what the organisation does and how it does it so that measures reflect what actually occurs.

(d) **Short** and **long-term achievement** should be measured. Short-term targets can be valuable, but exclusive use of them may direct the organisation away from opportunities that will mean success for the business in the long-term.

(e) Measures should be **fair.** They should only include factors which managers can control by their decisions, and for which they can be held **responsible**. Measuring controllable costs, revenues and assets may prove controversial however.

(f) A **variety** of measures should be used. Managers may be able to find ways to distort a single measure, but should not be able to affect a variety of measures. The balanced scorecard (Section 5) provides a method of measuring performance from a number of perspectives.

(g) **Realistic estimates** may be required for measures to be employed. These include estimates of financial items whose value is not certain, such as the cost of capital, and estimates of the impact of non-financial items.

(h) Measurement needs **responses,** above all managers to make decisions in the best interests of the organisation. Managers will only respond to measures that they find useful. The management accountant therefore needs to adopt a modern marketing philosophy to the provision of performance measures: satisfy customer wants, not pile 'em high and sell 'em cheap.

Once suitable performance measures have been selected they must be **monitored on a regular basis** to ensure that they are providing useful information. There is little point in an organisation devoting considerable resources to measuring market share if an increase in market share is not one of the organisation's objectives.

1.2 Quantitative and qualitative performance measures

Quantitative information is capable of being expressed in numbers. Qualitative information is not numeric. Qualitative information can sometimes be converted into numeric through tools such as ranking scales. For example 1 = Good, 2 = Average, 3 = Poor.

(a) An example of a **quantitative** performance measure is 'You have been late for work **twice** this week and it's only Tuesday!'.

(b) An example of a **qualitative** performance measure is 'My bed is **very** comfortable'.

The first measure is likely to find its way into a **staff appraisal report**. The second would feature in a bed manufacturer's **customer satisfaction survey**. Both are indicators of whether their subjects are doing as good a job as they are required to do.

Qualitative measures are by nature **subjective** and **judgmental** but they can still be useful. They are especially valuable when they are derived from several **different sources**, as the likelihood of an unreliable judgement is reduced.

Consider the statement.

> 'Seven out of ten customers think our beds are very comfortable.'

This is a **quantitative measure** of customer satisfaction (7 out of 10), as well as a **qualitative measure** of the perceived performance of the beds (very comfortable).

2 Financial performance indicators (FPIs)

Pilot paper, 12/07, 12/08,12/09, 12/10

FAST FORWARD

Financial performance indicators analyse profitability, liquidity and risk.

Financial indicators (or **monetary** measures) include:

Measure	Example
Profit	**Profit** is the commonest measure of all. Profit maximisation is usually cited as the main objective of most business organisations: 'ICI increased pre-tax profits to $233m'; 'General Motors... yesterday reported better-than-expected first-quarter net income of $513m.. Earnings improved $680m from the first quarter of last year when GM lost $167m.
Revenue	'the US businesses contributed $113.9m of total group turnover of $409m'.
Costs	'Sterling's fall benefited pre-tax profits by about $50m while savings from the cost-cutting programme instituted in 1991 were running at around $100m a quarter'; 'The group interest charge rose from $48m to $61m'.
Share price	'The group's shares rose 31p to 1,278p despite the market's fall'.
Cash flow	'Cash flow was also continuing to improve, with cash and marketable securities totalling $8.4bn on March 31, up from $8bn at December 31'.

Note that the monetary amounts stated are **only given meaning in relation to something else**. Financial results should be compared against a **yard-stick** such as:

- Budgeted **sales**, **costs** and **profits**
- **Standards** in a standard costing system
- The **trend** over time (last year/this year, say)
- The results of **other parts of the business**
- The results of **other businesses**
- The **economy** in general
- **Future potential** (for example the performance of a new business may be judged in terms of nearness to breaking even).

Exam focus point

Knowledge of how to calculate and interpret key ratios is a weak point for many students. Make sure it is one of your strong points.

2.1 Profitability

A company ought of course to be profitable, and there are obvious checks on **profitability**.

(a) Whether the company has made a profit or a loss on its ordinary activities.
(b) By how much this year's profit or loss is bigger or smaller than last year's profit or loss.

It is probably better to consider separately the profits or losses on exceptional items if there are any. Such gains or losses should not be expected to occur again, unlike profits or losses on normal trading.

Question

A company has the following summarised income statements for two consecutive years.

	Year 1	*Year 2*
	$	$
Turnover	70,000	100,000
Less cost of sales	42,000	55,000
Gross profit	28,000	45,000
Less expenses	21,000	35,000
Net profit	7,000	10,000

Although the net profit margin is the same for both years at 10%, the gross profit margin is not.

Year 1 $\frac{28,000}{70,000} = 40\%$ Year 2 $\frac{45,000}{100,000} = 45\%$

Is this good or bad for the business?

Answer

An increased profit margin must be good because this indicates a wider gap between selling price and cost of sales. Given that the net profit ratio has stayed the same in the second year, however, expenses must be rising. In year 1 expenses were 30% of turnover, whereas in year 2 they were 35% of turnover. This indicates that administration, selling and distribution expenses or interest costs require tight control.

Percentage analysis of profit between year 1 and year 2

	Year 1	*Year 2*
	%	%
Cost of sales as a % of sales	60	55
Gross profit as a % of sales	40	45
	100	100
Expenses as a % of sales	30	35
Net profit as a % of sales	10	10
Gross profit as a % of sales	40	45

Profit on ordinary activities before taxation is generally thought to be a **better** figure to use than profit after taxation, because there might be unusual variations in the tax charge from year to year which would not affect the underlying profitability of the company's operations.

Another profit figure that should be calculated is **PBIT**: **profit before interest and tax**. This is the amount of profit which the company earned **before having to pay interest to the providers of loan capital**. By providers of loan capital, we usually mean longer-term loan capital, such as debentures and medium-term bank loans, which will be shown in the balance sheet as 'Payables: amounts falling due after more than one year.' This figure is of particular importance to bankers and lenders.

PBIT = profit on ordinary activities before taxation + interest charges on long-term loan capital

2.1.1 Sales margin

Key term

Sales margin is turnover less cost of sales.

Look at the following examples.

(a) **Wyndeham Press, a printer**

	20X5
	$'000
Turnover	89,844
Cost of sales	(60,769)
Gross profit	29,075
Distribution expenses	(1,523)
Administrative expenses	(13,300)
Goodwill amortisation	(212)
Operating profit (15.6%)	14,040
(Interest etc)	

Cost of sales comprises **direct material** cost, such as paper, and **direct labour**. Distribution and administrative expenses include depreciation. **Sales margin = 32%**.

Sales margin at least shows the contribution that is being made, especially when direct variable costs are very significant.

(b) **Arriva, a bus company**

	20X4
	$m
Turnover	1,534.3
Cost of sales	1,282.6
Gross profit	251.7
Net operating expenses	133.8
Operating profit (7.6%)	117.9
(Interest etc)	

Sales margin = 16%. Clearly a higher percentage of costs are operating costs.

(c) **Lessons to be learnt**

(i) Sales margin as a measure is **not really any use in comparing different industries**.

(ii) Sales margin is **influenced** by the level of **fixed costs**.

(iii) **Trends** in sales margin are of interest. A falling sales margin suggests an organisation has not been able to pass on input price rises to customers.

(iv) **Comparisons** with similar companies are of interest. If an organisation has a lower sales margin than a similar business, this suggests problems in controlling input costs.

In short, the value of sales margin as a measure of performance depends on the **cost structure** of the industry and the **uses** to which it is put.

2.1.2 Earnings per share (EPS)

EPS is a convenient measure as it shows how well the shareholder is doing.

EPS is widely used as a **measure of a company's performance**, especially in **comparing** results over a period **of several years**. A company must be able to sustain its earnings in order to pay dividends and re-invest in the business so as to achieve future growth. Investors also look for **growth in the EPS** from one year to the next.

Key term

Earnings per share (EPS) is defined as the profit attributable to each equity (ordinary) share.

Question — EPS

Walter Wall Carpets made profits before tax in 20X8 of $9,320,000. Tax amounted to $2,800,000.

The company's share capital is as follows.

	$
Ordinary share (10,000,000 shares of $1)	10,000,000
8% preference shares	2,000,000
	12,000,000

Required

Calculate the EPS for 20X8.

Answer

	$
Profits before tax	9,320,000
Less tax	2,800,000
Profits after tax	6,520,000
Less preference dividend (8% of $2,000,000)	160,000
Earnings	6,360,000
Number of ordinary shares	10,000,000
EPS	63.6c

EPS on its own does not really tell us anything. It must be seen **in context**.

(a) EPS is used for comparing the results of a company **over time**. Is its EPS growing? What is the rate of growth? Is the rate of growth increasing or decreasing?

(b) EPS should not be used blindly to compare the earnings of one company with another. For example, if A plc has an EPS of 12c for its 10,000,000 10p shares and B plc has an EPS of 24c for its 50,000,000 25c shares, we must take account of the numbers of shares. When **earnings are used to compare one company's shares with another**, this is done **using** the **P/E ratio or perhaps the earnings yield**.

(c) If EPS is to be a reliable basis for comparing results, it **must be calculated consistently**. The EPS of one company must be directly comparable with the EPS of others, and the EPS of a company in one year must be directly comparable with its published EPS figures for previous years. Changes in the share capital of a company during the course of a year cause problems of comparability.

(d) EPS is a figure based on past data, and it is easily manipulated by changes in accounting policies and by mergers or acquisitions. **The use of the measure in calculating management bonuses makes it particularly liable to manipulation.** The attention given to EPS as a performance measure by City analysts is arguably disproportionate to its true worth. Investors should be more concerned with **future earnings**, but of course estimates of these are more difficult to reach than the readily available figure.

2.1.3 Profitability and return: the return on capital employed (ROCE)

It is impossible to assess profits or profit growth properly without relating them to the amount of funds (the capital) employed in making the profits. An important profitability ratio is therefore **return on capital employed (ROCE)**, which states the profit as a **percentage of the amount of capital employed**.

Key terms

Return on Capital Employed = $\frac{\text{PBIT}}{\text{Capital employed}}$

Capital employed = Shareholders' funds *plus* 'payables: amounts falling due after more than one year' *plus* any long-term provisions for liabilities.

= Total assets less current liabilities.

What does a company's ROCE tell us? What should we be looking for? There are three **comparisons** that can be made.

(a) The change in ROCE from **one year to the next**

(b) The ROCE being earned by **other companies**, if this information is available

(c) A comparison of the ROCE with **current market borrowing rates**

(i) What would be the cost of extra borrowing to the company if it needed more loans, and is it earning an ROCE that suggests it could make high enough profits to make such borrowing worthwhile?

(ii) Is the company making an ROCE which suggests that it is making profitable use of its current borrowing?

2.1.4 Analysing profitability and return in more detail: the secondary ratios

We may analyse the ROCE, to find out why it is high or low, or better or worse than last year. There are two factors that contribute towards a return on capital employed, both related to turnover.

(a) **Profit margin**. A company might make a high or a low profit margin on its sales. For example, a company that makes a profit of 25c per $1 of sales is making a bigger return on its turnover than another company making a profit of only 10c per $1 of sales.

(b) **Asset turnover**. Asset turnover is a measure of how well the assets of a business are being used to generate sales. For example, if two companies each have capital employed of $100,000, and company A makes sales of $400,000 a year whereas company B makes sales of only $200,000 a year, company A is making a higher turnover from the same amount of assets and this will help company A to make a higher return on capital employed than company B. Asset turnover is expressed as 'x times' so that assets generate x times their value in annual turnover. Here, company A's asset turnover is 4 times and company B's is 2 times.

Profit margin and asset turnover together explain the ROCE, and if the ROCE is the primary profitability ratio, these other two are the secondary ratios. The relationship between the three ratios is as follows.

Profit margin × **asset turnover** = **ROCE**

$$\frac{\text{PBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital employed}} = \frac{\text{PBIT}}{\text{Capital employed}}$$

It is also worth commenting on the **change in turnover** from one year to the next. Strong sales growth will usually indicate volume growth as well as turnover increases due to price rises, and volume growth is one sign of a prosperous company.

2.2 Gearing

The assets of a business must be financed somehow, and when a business is growing, the additional assets must be financed by additional capital. **Capital structure** refers to the **way in which an organisation** is **financed**, by a combination of long-term capital (ordinary shares and reserves, preference shares, debentures, bank loans, convertible bonds and so on) and short-term liabilities, such as a bank overdraft and trade payables.

2.2.1 Debts and financial risk

There are two main **reasons why companies should keep their debt burden under control**.

(a) When a company is heavily in debt, and seems to be getting even more heavily into debt, banks and other would-be lenders are very soon likely to refuse further borrowing and the company might well find itself in trouble.

(b) When a company is earning only a modest profit before interest and tax, and has a heavy debt burden, there will be very little profit left over for shareholders after the interest charges have been paid. And so if interest rates were to go up or the company were to borrow even more, it might soon be incurring interest charges in excess of PBIT. This might eventually lead to the liquidation of the company.

A high level of debt creates **financial risk**. Financial risk can be seen from different points of view.

(a) **The company** as a whole. If a company builds up debts that it cannot pay when they fall due, it will be forced into liquidation.

(b) **Payables**. If a company cannot pay its debts, the company will go into liquidation owing creditors money that they are unlikely to recover in full.

(c) **Ordinary shareholders**. A company will not make any distributable profits unless it is able to earn enough profit before interest and tax to pay all its interest charges, and then tax. The lower the profits or the higher the interest-bearing debts, the less there will be, if there is anything at all, for shareholders.

When a company has preference shares in its capital structure, ordinary shareholders will not get anything until the preference dividend has been paid.

2.3 Gearing ratios

FAST FORWARD

Gearing ratios measure the financial **risk** of a company's capital structure. Business risk can be measured by calculating a company's operational gearing.

Key term

Financial leverage/gearing is the use of debt finance to increase the return on equity by using borrowed funds in such a way that the return generated is greater than the cost of servicing the debt. If the return on borrowed funds is less than the cost of servicing the debt, the effect of gearing is to reduce the return on equity.

Gearing measures the **relationships between shareholders' capital plus reserves, and debt**. Debt is any loans which pay fixed interest and are secured. In this exam, overdrafts do not form part of debt in a gearing ratio.
The common gearing ratios are:

$$\text{Gearing} = \frac{\text{Debt}}{\text{Debt plus equity}} \quad \text{and} \quad \text{Gearing} = \frac{\text{Debt}}{\text{Equity}}$$

When applying the above ratios, remember **to compare like with like** (apply the same gearing ratio throughout to enable accurate comparisons to be made).

A gearing ratio of over 50% indicates **high** gearing.

There is **no absolute limit** to what a **gearing ratio** ought to be. Many companies are highly geared, but if a highly geared company is increasing its gearing, it is likely to have difficulty in the future when it wants to borrow even more, unless it can also boost its shareholders' capital, either with retained profits or with a new share issue.

2.3.1 The effect of gearing on earnings

The level of gearing has a considerable effect on the earnings attributable to the ordinary shareholders. A **highly geared** company must **earn enough profits to cover its interest charges before anything is available for equity**. On the other hand, if borrowed funds are invested in projects which provide returns in excess of the cost of debt capital, then shareholders will enjoy increased returns on their equity.

Gearing, however, also **increases the probability of financial failure** occurring through a company's inability to meet interest payments in poor trading circumstances.

2.3.2 Example: Gearing

Suppose that two companies are identical in every respect except for their gearing. Both have assets of $20,000 and both make the same operating profits (profit before interest and tax: PBIT). The only difference between the two companies is that Nonlever Co is all-equity financed and Lever Co is partly financed by debt capital, as follows.

	Nonlever Co	*Lever Co*
	$	$
Assets	20,000	20,000
10% Bonds	0	(10,000)
	20,000	10,000
Ordinary shares of $1	20,000	10,000

Because Lever has $10,000 of 10% bonds it must make a profit before interest of at least $1,000 in order to pay the interest charges. Nonlever, on the other hand, does not have any minimum PBIT requirement because it has no debt capital. A company, which is lower geared, is considered less **risky** than a higher geared company because of the greater likelihood that its PBIT will be high enough to cover interest charges and make a profit for equity shareholders.

2.3.3 Operating gearing

Financial risk, as we have seen, can be measured by financial gearing. **Business risk** refers to the **risk of making only low profits**, or even losses, **due to the nature of the business** that the company is involved in. One way of measuring business risk is by calculating a company's **operating gearing** or **'operational gearing'**.

Key term

Operating gearing or leverage = $\frac{\text{Contribution}}{\text{Profit before interest and tax (PBIT)}}$

If contribution is high but PBIT is low, fixed costs will be high, and only just covered by contribution. **Business risk**, as measured by operating gearing, will be **high**. If contribution is not much bigger than PBIT, fixed costs will be low, and fairly easily covered. Business risk, as measured by operating gearing, will be low.

2.4 Liquidity

FAST FORWARD

A company can be profitable but at the same time get into cash flow problems. Liquidity ratios (**current** and **quick**) and **working capital turnover ratios** give some idea of a company's liquidity.

Profitability is of course an important aspect of a company's performance, and debt or gearing is another. Neither, however, addresses directly the key issue of liquidity. A company needs liquid assets so that it can meet its debts when they fall due.

Key term

Liquidity is the amount of cash a company can obtain quickly to settle its debts (and possibly to meet other unforeseen demands for cash payments too).

2.4.1 Liquid assets

Liquid funds include:

(a) Cash
(b) Short-term investments for which there is a ready market, such as investments in shares of other companies (NB **not** subsidiaries or associates)
(c) Fixed-term deposits with a bank or building society, for example six month deposits with a bank
(d) Trade receivables
(e) Bills of exchange receivable

Some assets are more liquid than others. Inventories of goods are fairly liquid in some businesses. Inventories of finished production goods might be sold quickly, and a supermarket will hold consumer goods for resale that could well be sold for cash very soon. Raw materials and components in a manufacturing company have to be used to make a finished product before they can be sold to realise cash, and so they are less liquid than finished goods. Just how liquid they are depends on the speed of inventory turnover and the length of the production cycle.

Non-current assets are not liquid assets. A company can sell off non-current assets, but unless they are no longer needed, or are worn out and about to be replaced, they are necessary to continue the company's operations. Selling non-current assets is certainly not a solution to a company's cash needs, and so although there may be an occasional non-current asset item which is about to be sold off, probably

because it is going to be replaced, it is safe to disregard non-current assets when measuring a company's liquidity.

In summary, **liquid assets are current asset items that will or could soon be converted into cash, and cash** itself. Two common definitions of liquid assets are **all current assets** or **all current assets with the exception of inventories.**

The main source of liquid assets for a trading company is sales. A company can obtain cash from sources other than sales, such as the issue of shares for cash, a new loan or the sale of non-current assets. But a company cannot rely on these at all times, and in general, obtaining liquid funds depends on making sales and profits.

2.4.2 The current ratio

The **current ratio** is the standard test of liquidity.

Key term

$$\textbf{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

A company should have enough current assets that give a promise of 'cash to come' to meet its commitments to pay its current liabilities. Obviously, a ratio in **excess of 1** should be expected. In practice, a ratio comfortably in excess of 1 should be expected, but what is 'comfortable' varies between different types of businesses.

Companies are not able to convert all their current assets into cash very quickly. In particular, some manufacturing companies might hold large quantities of raw material inventories, which must be used in production to create finished goods. Finished goods might be warehoused for a long time, or sold on lengthy credit. In such businesses, where inventory turnover is slow, most inventories are not very liquid assets, because the cash cycle is so long. For these reasons, we calculate an additional liquidity ratio, known as the quick ratio or acid test ratio.

2.4.3 The quick ratio

Key term

$$\textbf{Quick ratio or acid test ratio} = \frac{\text{Current assets less inventories}}{\text{Current liabilities}}$$

This ratio should ideally be **at least 1** for companies with a **slow inventory turnover**. For companies with a **fast inventory turnover**, a quick ratio can be **less than 1** without suggesting that the company is in cash flow difficulties.

Do not forget the other side of the coin. The current ratio and the quick ratio can be bigger than they should be. A company that has large volumes of inventories and receivables might be over-investing in working capital, and so tying up more funds in the business than it needs to. This would suggest poor management of receivables or inventories by the company.

2.4.4 The accounts receivable payment period

Key term

$$\textbf{Accounts receivable days or accounts receivable payment period} = \frac{\text{Trade receivables}}{\text{Credit sales turnover}} \times 365 \text{ days}$$

This is a rough measure of the average length of time it takes for a company's accounts receivable to pay what they owe.

The trade accounts receivable are not the *total* figure for accounts receivable in the balance sheet, which includes prepayments and non-trade accounts receivable. The trade accounts receivable figure will be itemised in an analysis of the total accounts receivable, in a note to the accounts.

The estimate of accounts receivable days is only approximate.

(a) The **balance sheet value** of accounts receivable might be **abnormally high** or low compared with the 'normal' level the company usually has. This may apply especially to smaller companies, where the size of year-end accounts receivable may largely depend on whether a few or even a single large customer pay just before or just after the year-end.

(b) Turnover in the income statement excludes sales tax, but the accounts receivable figure in the balance sheet includes sales tax. We are not strictly comparing like with like.

2.4.5 The inventory turnover period

Key term

$$\textbf{Inventory days} = \frac{\text{Inventory}}{\text{Cost of sales}} \times 365 \text{ days}$$

This indicates the average number of days that items of inventory are held for. As with the average accounts receivable collection period, this is only an approximate figure, but one which should be reliable enough for finding changes over time.

A lengthening inventory turnover period indicates:

(a) A **slowdown** in **trading**, or

(b) A **build-up** in **inventory levels**, perhaps suggesting that the investment in inventories is becoming excessive

If we add together the inventory days and the accounts receivable days, this should give us an indication of how soon inventory is convertible into cash, thereby giving a further indication of the **company's liquidity**.

2.4.6 The accounts payable payment period

Key term

$$\textbf{Accounts payable payment period} = \frac{\text{Average trade payables}}{\text{Credit purchases or Cost of sales}} \times 365 \text{ days}$$

The accounts payable payment period often helps to assess a company's liquidity; an increase in accounts payable days is often a sign of lack of long-term finance or poor management of current assets, resulting in the use of extended credit from suppliers, increased bank overdraft and so on.

All the ratios calculated above will **vary by industry**; hence **comparisons** of ratios calculated with other similar companies in the same industry are important.

One of the competencies you require to fulfil performance objective 12 of the PER is the ability to provide analysis of performance against key financial performance indicators (KPIs). You can apply the knowledge you obtain from this section of the text to help to demonstrate this competence.

Question

Liquidity and working capital ratios

Calculate liquidity and working capital ratios from the accounts of a manufacturer of products for the construction industry, and comment on the ratios.

	20X8	*20X7*
	$m	$m
Turnover	2,065.0	1,788.7
Cost of sales	1,478.6	1,304.0
Gross profit	586.4	484.7
Current assets		
Inventories	119.0	109.0
Receivables (note 1)	400.9	347.4
Short-term investments	4.2	18.8
Cash at bank and in hand	48.2	48.0
	572.3	523.2
Payables: amounts falling due within one year		
Loans and overdrafts	49.1	35.3
Corporation taxes	62.0	46.7
Dividend	19.2	14.3
Payables (note 2)	370.7	324.0
	501.0	420.3
	$m	$m
Net current assets	71.3	102.9
Notes		
1 Trade receivables	329.8	285.4
2 Trade payables	236.2	210.8

Answer

	20X8	*20X7*
Current ratio	572.3/501.0 = 1.14	523.2/420.3 = 1.24
Quick ratio	453.3/501.0 = 0.90	414.2/420.3 = 0.99
Receivables' payment period	329.8/2,065.0 × 365 = 58 days	285.4/1,788.7 × 365 = 58 days
Inventory turnover period	119.0/1,478.6 × 365 = 29 days	109.0/1,304.0 × 365 = 31 days
Payables' turnover period	236.2/1,478.6 × 365 = 58 days	210.8/1,304.0 × 365 = 59 days

As a manufacturing group serving the construction industry, the company would be expected to have a comparatively lengthy receivables' turnover period, because of the relatively poor cash flow in the construction industry. It is clear that the company compensates for this by ensuring that they do not pay for raw materials and other costs before they have sold their inventories of finished goods (hence the similarity of receivables' and payables' turnover periods).

The company's current ratio is a little lower than average but its quick ratio is better than average and very little less than the current ratio. This suggests that inventory levels are strictly controlled, which is reinforced by the low inventory turnover period. It would seem that working capital is tightly managed, to avoid the poor liquidity which could be caused by a high receivables' turnover period and comparatively high payables.

3 Non-financial performance indicators (NFPIs)

Pilot paper, 12/07, 6/09, 12/10

FAST FORWARD

Changes in cost structures, the competitive environment and the manufacturing environment have led to an **increased use of non-financial performance indicators** (NFPIs).

There has been a growing emphasis on NFPIs for a number of reasons.

(a) **Concentration on too few variables**. If performance measurement systems focus entirely on those items which can be expressed in monetary terms, managers will concentrate on only those variables and ignore other important variables that cannot be expressed in monetary terms.

(b) **Lack of information on quality.** Traditional responsibility accounting systems fail to provide information on the quality or importance of operations.

(c) **Changes in cost structures.** Modern technology requires massive investment and product life cycles have got shorter. A greater proportion of costs are sunk and a large proportion of costs are planned, engineered or designed into a product/service before production/delivery. At the time the product/service is produced/delivered, it is therefore too late to control costs.

(d) **Changes in competitive environment.** Financial measures do not convey the full picture of a company's performance, especially in a modern business environment.

(e) **Changes in manufacturing environment**. New manufacturing techniques and technologies focus on minimising throughput times, inventory levels and set-up times. But managers can reduce the costs for which they are responsible by increasing inventory levels through maximising output. If a performance measurement system focuses principally on costs, managers may concentrate on cost reduction and ignore other important strategic manufacturing goals.

(f) **NFPIs are a better indicator of future prospects**. Financial performance indicators tend to focus on the short term. They can give a positive impression of what is happening now but problems may be looming. For example, falling quality will ultimately damage profitability.

3.1 The value of NFPIs

Unlike traditional variance reports, NFPIs can be provided **quickly** for managers, per shift, daily or even hourly as required. They are likely to be easy to calculate, and easier for non-financial managers to **understand** and therefore to **use effectively**.

The beauty of non-financial indicators is that **anything can be compared** if it is **meaningful** to do so. The measures should be **tailored** to the circumstances so that, for example, number of coffee breaks per 20 pages of Study Text might indicate to you how hard you are studying!

Many suitable measures combine elements from the chart shown below. The chart is not intended to be prescriptive or exhaustive.

Errors/failure	Time	Quantity	People
Defects	Second	Range of products	Employees
Equipment failures	Minute	Parts/components	Employee skills
Warranty claims	Hour	Units produced	Customers
Complaints	Shift	Units sold	Competitors
Returns	Cycle	Services performed	Suppliers
Stockouts	Day	kg/litres/metres	
Lateness/waiting	Month	m^2/m^3	
Misinformation	Year	Documents	
Miscalculation		Deliveries	
Absenteeism		Enquiries	

Traditional measures derived from these lists like 'kg (of material) per unit produced' or 'units produced per hour' are fairly obvious, but what may at first seem a fairly **unlikely combination** may also be very revealing. 'Absenteeism per customer', for example, may be of no significance at all or it may reveal that a particularly difficult customer is being avoided, and hence that some action is needed.

There is clearly a need for the information provider to work more closely with the managers who will be using the information to make sure that their needs are properly understood. The measures used are likely to be **developed and refined over time**. It may be that some will serve the purpose of drawing attention to areas in need of improvement but will be of no further relevance once remedial action has been taken. A flexible, responsive approach is essential.

Question

NFPIs

Using the above chart make up five non-financial indicators and explain how each might be useful.

Answer

Here are five indicators, showing you how to use the chart, but there are many other possibilities.

(a) Services performed late v total services performed
(b) Total units sold v total units sold by competitors (indicating market share)
(c) Warranty claims per month
(d) Documents processed per employee
(e) Equipment failures per 1,000 units produced

Don't forget to explain how the ones that you chose might be useful.

3.2 NFPIs in relation to employees

FAST FORWARD

NFPIs can usefully be applied to **employees** and product/service **quality**.

One of the many criticisms of traditional accounting performance measurement systems is that they **do not measure the skills, morale and training of the workforce**, which can be as **valuable to an organisation as its tangible assets**. For example if employees have not been trained in the manufacturing practices required to achieve the objectives of the new manufacturing environment, an organisation is unlikely to be successful.

Employee attitudes and morale can be measured by **surveying** employees. Education and skills levels, promotion and training, absenteeism and labour turnover for the employees for which each manager is responsible can also be monitored.

3.3 Performance measurement in a TQM environment

Total Quality Management is a highly significant trend in modern business thinking. Because **TQM embraces every activity** of a business, performance measures cannot be confined to the production process but must also cover the work of sales and distribution departments and administration departments, the efforts of external suppliers, and the reaction of external customers.

In many cases the measures used will be non-financial ones. They may be divided into three types.

(a) **Measuring the quality of incoming supplies.** Quality control should include procedures for acceptance and inspection of goods inwards and measurement of rejects.

(b) **Monitoring work done as it proceeds.** 'In-process' controls include statistical process controls and random sampling, and measures such as the amount of scrap and reworking in relation to good production. Measurements can be made by product, by worker or work team, by machine or machine type, by department, or whatever is appropriate.

(c) **Measuring customer satisfaction.** This may be monitored in the form of letters of complaint, returned goods, penalty discounts, claims under guarantee, or requests for visits by service engineers. Some companies adopt a more pro-active approach to monitoring customer satisfaction

by surveying their customers on a regular basis. They use the feedback to obtain an index of customer satisfaction which is used to identify quality problems before they affect profits.

3.4 Quality of service

Service quality is measured principally by **qualitative measures**, as you might expect, although some quantitative measures are used by some businesses.

(a) If it were able to obtain the information, a retailer might use number of lost customers in a period as an indicator of service quality.

(b) Lawyers use the proportion of time spent with clients.

3.4.1 Measures of customer satisfaction

You have probably filled in **questionnaires** in fast food restaurants or on aeroplanes without realising that you were completing a customer attitude survey for input to the organisation's management information system.

Other possible measures of customer satisfaction include:

(a) Market research information on customer preferences and customer satisfaction with specific product features

(b) Number of defective units supplied to customers as a percentage of total units supplied

(c) Number of customer complaints as a percentage of total sales volume

(d) Percentage of products which fail early or excessively

(e) On-time delivery rate

(f) Average time to deal with customer queries

(g) New customer accounts opened

(h) Repeat business from existing customers

4 Short-termism and manipulation 6/08

FAST FORWARD

Short-termism is when there is a bias towards short-term rather than long-term performance. It is often due to the fact that managers' performance is measured on short-term results.

Key term

Short-termism is when there is a bias towards short-term rather than long-term performance.

Organisations often have to make a trade-off between short-term and long-term objectives. Decisions which involve the **sacrifice of longer-term objectives** include the following.

(a) Postponing or abandoning capital expenditure projects, which would eventually contribute to growth and profits, in order to protect short term cash flow and profits.

(b) Cutting R&D expenditure to save operating costs, and so reducing the prospects for future product development.

(c) Reducing quality control, to save operating costs (but also adversely affecting reputation and goodwill).

(d) Reducing the level of customer service, to save operating costs (but sacrificing goodwill).

(e) Cutting training costs or recruitment (so the company might be faced with skills shortages).

Managers may also **manipulate** results, especially if rewards are linked to performance. This can be achieved by changing the timing of capital purchases, building up inventories and speeding up or delaying payments and receipts.

4.1 Methods to encourage a long-term view

Steps that could be taken to encourage managers to take a long-term view, so that the 'ideal' decisions are taken, include the following.

(a) **Making short-term targets realistic**. If budget targets are unrealistically tough, a manager will be forced to make trade-offs between the short and long term.

(b) **Providing sufficient management information** to allow managers to see what trade-offs they are making. Managers must be kept aware of long-term aims as well as shorter-term (budget) targets.

(c) **Evaluating managers' performance** in terms of contribution to long-term as well as short-term objectives.

(d) **Link managers' rewards to share price**. This may encourage goal congruence.

(e) **Set quality based targets** as well as financial targets. Multiple targets can be used.

5 The balanced scorecard 6/11

FAST FORWARD

The **balanced scorecard** approach to performance measurement focuses on four different perspectives and uses financial and non-financial indicators.

Although segments of a business may be measured by a single performance indicator such as ROI, profit, or cost variances, it might be more suitable to use multiple measures of performance where each measure reflects a **different aspect of achievement**. Where multiple measures are used, several may be **non-financial.**

The most popular approach in current management thinking is the use of a **'balanced scorecard'** consisting of a variety of indicators both financial and non-financial.

Key term

The **balanced scorecard** approach emphasises the need to provide management with a set of information which covers all relevant areas of performance in an objective and unbiased fashion. The information provided may be both financial and non-financial and cover areas such as profitability, customer satisfaction, internal efficiency and innovation.

5.1 Perspectives

The balanced scorecard focuses on **four different perspectives**, as follows.

Perspective	Question	Explanation
Customer	What do existing and new customers value from us?	Gives rise to targets that matter to customers: cost, quality, delivery, inspection, handling and so on.
Internal	What processes must we excel at to achieve our financial and customer objectives?	Aims to improve internal processes and decision making.
Innovation and learning	Can we continue to improve and create future value?	Considers the business's capacity to maintain its competitive position through the acquisition of new skills and the development of new products.
Financial	How do we create value for our shareholders?	Covers traditional measures such as growth, profitability and shareholder value but set through talking to the shareholder or shareholders direct.

Performance targets are set once the key areas for improvement have been identified, and the balanced scorecard is the main monthly report.

The scorecard is **'balanced'** as managers are required to think in terms of **all four** perspectives, to prevent improvements being made in one area at the expense of another.

Important features of this approach are as follows.

(a) It looks at both **internal and external** matters concerning the organisation.
(b) It is related to the key elements of a company's **strategy**.
(c) **Financial and non-financial** measures are linked together.

5.2 Example

An example of how a balanced scorecard might appear is offered below.

Balanced Scorecard

Financial Perspective	
GOALS	**MEASURES**
Survive	Cash flow
Succeed	Monthly sales growth and operating income by division
Prosper	Increase market share and ROI

Customer Perspective	
GOALS	**MEASURES**
New products	Percentage of sales from new products
Responsive supply	On-time delivery (defined by customer)
Preferred supplier	Share of key accounts' purchases
	Ranking by key accounts
Customer partnership	Number of cooperative engineering efforts

Internal Business Perspective	
GOALS	**MEASURES**
Technology capability	Manufacturing configuration vs competition
Manufacturing excellence	Cycle time
	Unit cost
	Yield
Design productivity	Silicon efficiency
	Engineering efficiency
New product introduction	Actual introduction schedule vs plan

Innovation and Learning Perspective	
GOALS	**MEASURES**
Technology leadership	Time to develop next generation of products
Manufacturing learning	Process time to maturity
Product focus	Percentage of products that equal 80% sales
Time to market	New product introduction vs competition

5.3 Example: Balanced scorecard and not-for-profit organisations

Not-for-profit organisations such as charities are likely to have significantly different goals in comparison to profitable businesses. The following are goals that may be relevant to a charity.

Financial perspective

- Increase income from charitable donations
- Improve margins

Internal business perspective

- Reduce overheads
- Claim back tax on gift aid

Customer perspective

- Continued donor support
- Donor involvement in initiatives

Innovation and learning perspective

- More projects supported
- More fundraisers
- More money pledged

Required

Suggest some performance measures for each of the goals outlined above.

Solution

The balanced scorecard for the charity may appear as follows.

Financial perspective	
GOALS	**MEASURES (KPI)**
Income from charitable donations	Donations received
Improved margins	Lower costs and/or increased income from all sources

Customer perspective	
GOALS	**MEASURES (KPI)**
Continued donor support	Pledges given and direct debits set up
Donor involvement in initiatives	Fundraising and charity dinners

Internal business perspective	
GOALS	**MEASURES (KPI)**
Reduce overheads	Lower overheads measured by monitoring and accounts
Claim back tax on gift aid	Improved reclaim times for gift aided donation

Innovation and learning perspective	
GOALS	**MEASURES (KPI)**
More projects supported	Number of projects given support
More fundraisers	Number of fundraisers recruited
More money pledged	Amount of donations promised

Question — Balanced scorecard

Spotlight Productions has in the past produced just one fairly successful product. Recently, however, a new version of this product has been launched. Development work continues to add a related product to the product list. Given below are some details of the activities during the month of November.

Units produced	– existing product	25,000
	– new product	5,000
Cost of units produced	– existing product	$375,000
	– new product	$70,000
Sales revenue	– existing product	$550,000
	– new product	$125,000
Hours worked	– existing product	5,000
	– new product	1,250
Development costs		$47,000

Required

(a) Suggest and calculate performance indicators that could be calculated for each of the four perspectives on the balanced scorecard.

(b) Suggest how this information would be interpreted.

Answer

(a) **Customer**

- Percentage of sales represented by new products $= \frac{\$125,000}{\$550,000 + \$125,000} \times 100$

$= 18.5\%$

Internal

- Productivity – existing product $= \frac{25,000 \text{ units}}{5,000 \text{ units}}$

$= 5$ units per hour

– new product $= \frac{5,000 \text{ units}}{1,250 \text{ units}}$

$= 4$ units per hour

- Unit cost – existing product $= \frac{\$375,000}{25,000 \text{ units}}$

$= \$15$ per unit

– new product $= \frac{\$70,000}{5,000 \text{ units}}$

$= \$14$ per unit

Financial

- Gross profit – existing product $= \frac{\$550,000 - 375,000}{\$550,000}$

$= 32\%$

– new product $= \frac{\$125,000 - 70,000}{\$125,000}$

$= 44\%$

Innovation and learning

- Development costs as % of sales $= \frac{\$47,000}{\$675,000}$

$= 7\%$

(b) Using a range of performance indicators will allow Spotlight Productions to look at the success of the new product in wider terms than just its profitability. For example, productivity is lower for the new product than the existing product, so managers may wish to examine the processes involved in order to make improvements. Sales of the new product look very promising but some additional measure of customer satisfaction could provide a better view of long-term prospects.

6 Building Block model

FAST FORWARD

Fitzgerald and Moon's **building blocks** for **dimensions, standards** and **rewards** attempt to overcome the problems associated with performance measurement of service businesses.

Question

Services v manufacturing

In Chapter 2b we looked at five major characteristics of services that distinguish services from manufacturing. Can you relate them to the provision of a haircut?

Answer

(a) **Intangibility**. A haircut is intangible in itself, and the performance of the service comprises many other intangible factors, like the music in the salon, the personality of the hairdresser.

(b) **Simultaneity/inseparability**. The production and consumption of a haircut are simultaneous, and so cannot be inspected for quality in advance, nor returned if it is not what was required.

(c) **Perishability**. Haircuts are perishable, so they cannot be stored. You cannot buy them in bulk, and the hairdresser cannot do them in advance and keep them in stock in case of heavy demand.

(d) **Heterogeneity/variability**. A haircut is heterogeneous and so the exact service received will vary each time: not only will Justin and Nigel cut hair differently, but Justin will not consistently deliver the same standard of haircut.

(e) **No transfer of ownership.** A haircut does not become the property of the customer.

Performance measurement in service businesses has sometimes been perceived as difficult because of the five factors listed above, but the modern view is that if something is difficult to measure this is because it has not been defined clearly enough. **Fitzgerald & Moon** adopted a framework for the design and analysis of performance management systems in service organisations. They based their analysis on three building blocks; **standards, rewards** and **dimensions**.

6.1 Standards

These are the measures that are used. To ensure success, Fitzgerald and Moon believe it is vital that employees view standards as achievable, fair, and take ownership of them. The key elements are **ownership**, **achievability** and **equity**.

(a) To ensure that employees take **ownership** of standards, they need to **participate** in the budget and standard-setting processes. They are then more likely to **accept** the standards, feel more **motivated** as they perceive the standards to be achievable and **morale** is improved. The disadvantage to participation is that it offers the opportunity for the introduction of **budgetary slack**.

(b) Standards need to be set **high enough** to ensure that there is some **sense of achievement** in attaining them, but **not so high** that there is a **demotivating** effect because they are unachievable. It is management's task to find a **balance** between what the organisation perceives as achievable and what employees perceive as achievable.

(c) It is vital that **equity** is seen to occur when applying standards for performance measurement purposes. The performance of different business units should not be measured against the same standards if some units have an inherent advantage unconnected with their own efforts. For example, divisions operating in different countries should not be assessed against the same standards.

6.2 Rewards

Fitzgerald and Moon's theory states that reward structures of performance measurement systems should motivate individuals to work towards standards and that targets should be clear and linked to controllable factors. Three issues need to be considered if the performance measurement system is to operate successfully: **clarity**, **motivation** and **controllability**.

(a) The organisation's objectives need to be **clearly understood** by those whose performance is being appraised. They need to know what goals they are working towards.

(b) Individuals should be **motivated** to work in pursuit of the organisation's strategic objectives. Goal clarity and participation have been shown to contribute to higher levels of motivation to achieve targets, providing managers accept those targets. Bonuses can be used to motivate.

(c) Managers should have a certain level of **controllability** for their areas of responsibility. For example they should not be held responsible for costs over which they have no control.

6.3 Dimensions

Dimensions are the areas of business performance which need to be monitored and controlled if business goals are to be achieved. For overall assessment of business performance, performance needs to be measured from various perspectives. There are **six dimensions** in the building block model.

The dimensions can be divided into **two sets**, called **results** and **determinants**.

The **results** indicate performance (success/failure) as an outcome of decisions and actions taken in the past.

(a) **Competitive performance**, focusing on factors such as sales growth and market share.

(b) **Financial performance**, concentrating on profitability, capital structure and so on.

The **determinants** indicate competitive performance (success/failure) at present and accordingly are relevant for current performance measurement.

(c) **Quality of service** looks at matters like reliability, courtesy and competence.

(d) **Flexibility** is an apt heading for assessing the organisation's ability to deliver at the right speed, to respond to precise customer specifications, and to cope with fluctuations in demand.

(e) **Resource utilisation**, not unsurprisingly, considers how efficiently resources are being utilised. This can be problematic because of the complexity of the inputs to a service and the outputs from it and because some of the inputs are supplied by the customer (he or she brings their own hair, for example). Many measures are possible, however, for example 'number of customers per hairdresser'. Performance measures can be devised easily if it is known what activities are involved in the service.

(f) **Innovation** is assessed in terms of both the innovation process and the success of individual innovations.

Focus on the examination and improvement of the determinants should lead to improvement in the results.

There is no need to elaborate on **competitive performance**, **financial performance** and **quality of service** issues, all of which have been covered already. The other three dimensions deserve more attention.

6.3.1 Flexibility

Flexibility has three aspects.

(a) **Speed of delivery**

Punctuality is vital in some service industries like passenger transport: indeed punctuality is currently one of the most widely publicised performance measures in the UK, because organisations like railway companies are making a point of it. **Measures** include waiting time in queues, as well as late trains. In other types of service it may be more a question of **timeliness**. Does the auditor turn up to do the annual audit during the appointed week? Is the audit done within the time anticipated by the partner or does it drag on for weeks? These aspects are all easily measurable in terms of **'days late'**. Depending upon the circumstances, 'days late' may also reflect an inability to cope with fluctuations in demand.

(b) **Response to customer specifications**

The ability of a service organisation to respond to **customers' specifications** is one of the criteria by which Fitzgerald *et al* distinguish between the three different types of service. Clearly a professional service such as legal advice and assistance must be tailored exactly to the customer's needs. Performance is partly a matter of customer perception and so **customer attitude surveys** may be

appropriate. However it is also a matter of the diversity of skills possessed by the service organisation and so it can be measured in terms of the **mix of staff skills** and the amount of time spent on **training**. In **mass service** business customisation is not possible by the very nature of the service.

(c) **Coping with demand**

This is clearly measurable in quantitative terms in a mass service like a railway company which can ascertain the extent of **overcrowding**. It can also be very closely monitored in service shops: customer **queuing** time can be measured in banks and retailers, for example. Professional services can measure levels of **overtime** worked: excessive amounts indicate that the current demand is too great for the organisation to cope with in the long term without obtaining extra human resources.

6.3.2 Resource utilisation measures

Resource utilisation is usually measured in terms of **productivity**. The ease with which this may be measured varies according to the service being delivered.

The main resource of a firm of accountants, for example, is the **time** of various grades of staff. The main output of an accountancy firm is **chargeable hours**.

In a restaurant it is not nearly so straightforward. Inputs are highly **diverse**: the ingredients for the meal, the chef's time and expertise, the surroundings and the customers' own likes and dislikes. A **customer attitude survey** might show whether or not a customer enjoyed the food, but it could not ascribe the enjoyment or lack of it to the quality of the ingredients, say, rather than the skill of the chef.

Here are some of the resource utilisation ratios listed by Fitzgerald *et al*.

Business	Input	Output
Ernst & Young Consulting	Man hours available	Chargeable hours
Commonwealth Hotels	Rooms available	Rooms occupied
Railway companies	Train miles available	Passenger miles
Barclays Bank	Number of staff	Number of accounts

6.3.3 Innovation

In a modern environment in which product quality, product differentiation and continuous improvement are the order of the day, a company that can find innovative ways of satisfying customers' needs has an important **competitive advantage**.

Fitzgerald *et al* suggest that **individual innovations** should be measured in terms of whether they bring about **improvements in the other five 'dimensions'**.

The innovating **process** can be measured in terms of how much it **costs** to develop a new service, how **effective** the process is (that is, how innovative is the organisation, if at all?), and how **quickly** it can develop new services. In more concrete terms this might translate into the following.

(a) The amount of **R&D** spending and whether (and how quickly) these costs are recovered from new service sales

(b) The proportion of **new** services to **total** services provided

(c) The time between **identification** of the need for a new service and making it **available**

Question — Competitiveness and resource utilisation

A service business has collected some figures relating to its year just ended.

		Budget	*Actual*
Customer enquiries:	New customers	6,000	9,000
	Existing customers	4,000	3,000
Business won:	New customers	2,000	4,000
	Existing customers	1,500	1,500

		Budget	*Actual*
Types of services performed:	Service A	875	780
	Service B	1,575	1,850
	Service C	1,050	2,870
Employees:	Service A	5	4
	Service B	10	10
	Service C	5	8

Required

Calculate figures that illustrate competitiveness and resource utilisation.

Answer

Competitiveness can only be measured from these figures by looking at how successful the organisation is at converting enquiries into firm orders.

Percentage of enquiries converted into firm orders

	Budget	*Actual*
New customers (W1)	33%	44%
Existing customers (W1)	37.5%	50%

Resource utilisation can be measured by looking at average services performed per employee.

	Budget	*Actual*	*Rise*
Service A (W2)	175	195	+11.4%
Service B (W2)	157.5	185	+17.5%
Service C (W2)	210	358.75	+70.8%

Workings

1 For example 2,000/6,000 = 33%
2 For example 875/5 = 175

What comments would you make about these results? How well is the business doing?

Exam focus point

Be prepared to think up performance measures for different areas of an organisation's business. Remember to make the measures relevant to the organisation in question. There is little point in suggesting measures such as waiting times in queues to assess the quality of the service provided by an educational establishment.

Question

Performance indicators

Suggest two separate performance indicators that could be used to assess each of the following areas of a fast food chain's operations.

(a) Food preparation department
(b) Marketing department

Answer

Here are some suggestions.

(a) Material usage per product
Wastage levels
Incidences of food poisoning

(b) Market share
Sales revenue per employee
Growth in sales revenue

Chapter Roundup

- **Performance measurement** aims to establish how well something or somebody is doing in relation to a plan.

  Performance measures may be divided into two groups.

  – Financial performance indicators
  – Non-financial performance indicators
- **Financial performance indicators** analyse profitability, liquidity and risk.
- **Gearing ratios** measure the financial **risk** of a company's capital structure. Business risk can be measured by calculating a company's operational gearing.
- A company can be profitable but at the same time get into cash flow problems. Liquidity ratios (**current** and **quick**) and **working capital turnover ratios** give some idea of a company's liquidity.
- Changes in cost structures, the competitive environment and the manufacturing environment have lead to an **increased use of non-financial performance indicators** (NFPIs).
- NFPIs can usefully be applied to **employees** and product/service **quality**.
- **Short-termism** is when there is a bias towards short-term rather than long-term performance. It is often due to the fact that managers' performance is measured on short-term results.
- The **balanced scorecard** approach to performance measurement focuses on four different perspectives and uses financial and non-financial indicators.
- Fitzgerald and Moon's **building blocks** for **dimensions, standards** and **rewards** attempt to overcome the problems associated with performance measurement of service businesses.

Quick Quiz

1 Give five examples of a financial performance measure.

- ……
- ……
- ……
- ……
- ……

2 How do quantitative and qualitative performance measures differ?

3 Choose the correct words from those highlighted.

In general, a current ratio **in excess of 1/less than 1/approximately zero** should be expected.

4 **Service quality** is measured principally by quantitative measures.

True ☐ False ☐

5 *Fill in the blanks.*

NFPIs are less likely to be ……. than traditional profit-related measures and they should therefore offer a means of counteracting …….. .

6 What are the three most important features of the balanced scorecard approach?

7 *Fill in the blanks.*

The five characteristics of a service business are …….. , ……., ……., ……. and …… .

8 Fitzgerald and Moon's standards for performance measurement systems are ownership, achievability and controllability. **True or false?**

9 *Fill in the gaps.*

Fitzgerald and Moon's dimensions can be divided into the results (…….. and ……..) and the determinants (…… , ……., …… and …….) .

Answers to Quick Quiz

1
- Profit
- Revenue
- Costs
- Share price
- Cash flow

2 Quantitative measures are expressed in numbers whereas qualitative measures are not.

3 in excess of 1

4 False. Service quality is measured principally by **qualitative** measures.

5 manipulated
short termism

6
- It looks at both internal and external matters concerning the organisation
- It is related to the key elements of a company's strategy
- Financial and non-financial measures are linked together

7 Heterogeneity/variability
Perishability
Intangibility
Simultaneity/inseparability
No transfer of ownership

8 False. They are ownership, achievability and equity.

9 *Results*

Financial performance
Competitive performance

Determinants

Quality
Flexibility
Innovation
Resource utilisation

Now try the question below from the Exam Question Bank

Number	Level	Marks	Time
Q19	Examination	20	36 mins

17

Divisional performance measures

Topic list	Syllabus reference
1 Divisionalisation	E5
2 Return on investment (ROI)	E5 (c)
3 Residual income (RI)	E5 (c), (d)
4 Transfer pricing	E5 (a), (b)

Introduction

This chapter looks at **divisional performance** and **transfer pricing** which is a system of charging other divisions of your organisation when you provide them with your division's goods or services.

In a **divisionalised organisation** structure of any kind, if one division does work that is used by another division, transfer pricing may be required. Do not be misled by the term 'price': there is not necessarily any suggestion of **profit** as there usually is with an external selling price. But as we shall see, transfer pricing is particularly appropriate where divisions are designated as **profit centres**.

Study guide

		Intellectual level
E5	**Divisional performance and transfer pricing**	
(a)	Explain and illustrate the basis for setting a transfer price using variable cost, full cost and the principles behind allowing for intermediate markets	2
(b)	Explain how transfer prices can distort the performance assessment of divisions and decisions made	2
(c)	Explain the meaning of, and calculate, Return on Investment (ROI) and Residual Income (RI), and discuss their shortcomings	2
(d)	Compare divisional performance and recognise the problems of doing so	2

Exam guide

You may be required to calculate transfer prices in this exam. You must be able to explain how and why they are used and the problems they can create.

1 Divisionalisation

FAST FORWARD

There are a number of advantages and disadvantages to **divisionalisation**.

In general, a large organisation can be **structured in one of two ways: functionally** (all activities of a similar type within a company, such as production, sales, research, are under the control of the appropriate departmental head) or **divisionally** (split into divisions in accordance with the products or services made or provided).

Divisional managers are therefore responsible for all operations (production, sales and so on) relating to their product, the functional structure being applied to each division. It is possible, of course, that only part of a company is divisionalised and activities such as administration are structured centrally on a functional basis with the responsibility of providing services to *all* divisions.

1.1 Decentralisation

In general, a **divisional structure will lead to decentralisation** of the decision-making process and divisional managers may have the freedom to set selling prices, choose suppliers, make product mix and output decisions and so on. Decentralisation is, however, a matter of degree, depending on how much freedom divisional managers are given.

1.2 Advantages of divisionalisation

(a) Divisionalisation can **improve** the **quality of decisions** made because divisional managers (those taking the decisions) know local conditions and are able to make more informed judgements. Moreover, with the personal incentive to improve the division's performance, they ought to take decisions in the division's best interests.

(b) **Decisions should be taken more quickly** because information does not have to pass along the chain of command to and from top management. Decisions can be made on the spot by those who are familiar with the product lines and production processes and who are able to react to changes in local conditions quickly and efficiently.

(c) The authority to act to improve performance should **motivate divisional managers**.

(d) Divisional organisation **frees top management** from detailed involvement in day-to-day operations and allows them to devote more time to strategic planning.

(e) Divisions provide **valuable training grounds for future members of top management** by giving them experience of managerial skills in a less complex environment than that faced by top management.

(f) In a large business organisation, the **central head office will not have the management resources or skills to direct operations closely enough itself**. Some authority must be delegated to local operational managers.

1.3 Disadvantages of divisionalisation

(a) A danger with divisional accounting is that the business organisation will divide into a number of self-interested segments, each acting at times against the wishes and interests of other segments. Decisions might be taken by a divisional manager in the best interests of his own part of the business, but against the best interest of other divisions and possibly against the interests of the organisation as a whole.

A task of **head office** is therefore to try to **prevent dysfunctional decision making** by individual divisional managers. To do this, head office must reserve some power and authority for itself so that divisional managers cannot be allowed to make entirely independent decisions. A **balance** ought to be kept **between decentralisation** of authority to provide incentives and motivation, **and retaining centralised authority** to ensure that the organisation's divisions are all working towards the same target, the benefit of the organisation as a whole (in other words, **retaining goal congruence** among the organisation's separate divisions).

(b) It is claimed that the **costs of activities that are common** to all divisions such as running the accounting department **may be greater** for a divisionalised structure than for a centralised structure.

(c) **Top management**, by delegating decision making to divisional managers, may **lose control** since they are not aware of what is going on in the organisation as a whole. (With a good system of performance evaluation and appropriate control information, however, top management should be able to control operations just as effectively.)

1.4 Responsibility accounting

FAST FORWARD

Responsibility accounting is the term used to describe decentralisation of authority, with the performance of the decentralised units measured in terms of accounting results.

With a system of responsibility accounting there are five types of **responsibility centre: cost centre; revenue centre; profit centre; contribution centre; investment centre**.

The creation of divisions allows for the operation of a system of **responsibility accounting**. There are a number of types of responsibility accounting unit, or responsibility centre that can be used within a system of responsibility accounting.

In the weakest form of decentralisation a system of **cost centres** might be used. As decentralisation becomes stronger the responsibility accounting framework will be based around **profit centres**. In its strongest form **investment centres** are used.

Type of responsibility centre	Manager has control over ...	Principal performance measures
Cost centre	Controllable costs	Variance analysis Efficiency measures
Revenue centre	Revenues only	Revenues

Type of responsibility centre	Manager has control over …	Principal performance measures
Profit centre	Controllable costs Sales prices (including transfer prices)	Profit
Contribution centre	As for profit centre except that expenditure is reported on a marginal cost basis	Contribution
Investment centre	Controllable costs Sales prices (including transfer prices) Output volumes Investment in non-current assets and working capital	Return on investment Residual income Other financial ratios

2 Return on investment (ROI) 12/08, 6/11, 6/12

FAST FORWARD

The performance of an investment centre is usually monitored using either or both of **return on investment (ROI)** and **residual income (RI).**

ROI is generally regarded as the **key performance measure.** The main reason for its **widespread use** is that it **ties in directly with the accounting process**, and is identifiable from the income statement and balance sheet. However it does have limitations, as we will see later in this chapter.

Key term

Return on investment (ROI) shows how much profit has been made in relation to the amount of capital invested and is calculated as (profit/capital employed) × 100%.

For example, suppose that a company has two investment centres A and B, which show results for the year as follows.

	A	*B*
	$	$
Profit	60,000	30,000
Capital employed	400,000	120,000
ROI	15%	25%

Investment centre A has made double the profits of investment centre B, and in terms of profits alone has therefore been more 'successful'. However, B has achieved its profits with a much lower capital investment, and so has earned a much higher ROI. This suggests that B has been a more successful investment than A.

2.1 Measuring ROI

FAST FORWARD

There is no generally agreed method of calculating ROI and it can have **behavioural implications** and lead to dysfunctional decision making when used as a guide to investment decisions. It focuses attention on short-run performance whereas investment decisions should be evaluated over their full life.

ROI can be measured in different ways.

2.1.1 Profit after depreciation as a % of net assets employed

This is probably the **most common method**, but it does present a problem. If an investment centre maintains the same annual profit, and keeps the same assets without a policy of regular replacement of non-current assets, its ROI will increase year by year as the assets get older. This **can give a false impression of improving performance over time**.

For example, the results of investment centre X, with a policy of straight-line depreciation of assets over a 5-year period, might be as follows.

Year	*Non-current assets at cost*	*Depreciation in the year*	*NBV (mid year)*	*Working capital*	*Capital employed*	*Profit*	*ROI*
	$'000	$'000	$'000	$'000	$'000	$'000	
0	100			10	110		
1	100	20	90	10	100	10	10.0%
2	100	20	70	10	80	10	12.5%
3	100	20	50	10	60	10	16.7%
4	100	20	30	10	40	10	25.0%
5	100	20	10	10	20	10	50.0%

This table of figures is intended to show that an investment centre can **improve its ROI** year by year, simply **by allowing its non-current assets to depreciate**, and there could be a **disincentive to** investment centre managers to **reinvest in new or replacement assets**, because the centre's ROI would probably fall.

This example has used a mid year NBV but a year end or start of year NBV can also be used.

Question

ROI calculation (1)

A new company has non-current assets of $460,000 which will be depreciated to nil on a straight line basis over 10 years. Net current assets will consistently be $75,000, and annual profit will consistently be $30,000. ROI is measured as return on net assets.

Required

Calculate the company's ROI in years 2 and 6.

Answer

Year 2 – 6.8%
Year 6 – 11.6%

A further disadvantage of measuring ROI as profit divided by net assets is that, for similar reasons, it is not **easy to compare** fairly the **performance of investment centres**.

For example, suppose that we have two investment centres.

	Investment centre P		*Investment centre Q*	
	$	$	$	$
Working capital		20,000		20,000
Non-current assets at cost	230,000		230,000	
Accumulated depreciation	170,000		10,000	
Net book value		60,000		220,000
Capital employed		80,000		240,000
Profit		$24,000		$24,000
ROI		30%		10%

Investment centres P and Q have the same amount of working capital, the same value of non-current assets at cost, and the same profit. But P's non-current assets have been depreciated by a much bigger amount (presumably P's non-current assets are much older than Q's) and so P's ROI is three times the size of Q's ROI. The conclusion might therefore be that P has performed much better than Q. This comparison, however, would not be 'fair', because the difference in performance might be entirely attributable to the age of their non-current assets.

The arguments for using net book values for calculating ROI

(a) It is the **'normally accepted'** method of calculating ROI.

(b) Organisations are continually buying new non-current assets to replace old ones that wear out, and so on the whole, the **total net book value** of all non-current assets together **will remain fairly constant** (assuming nil inflation and nil growth).

2.1.2 Profit after depreciation as a % of gross assets employed

Instead of measuring ROI as return on net assets, we could measure it as return on gross assets ie before depreciation. This would **remove the problem of ROI increasing over time as non-current assets get older**.

If a company acquired a non-current asset costing $40,000, which it intends to depreciate by $10,000 pa for 4 years, and if the asset earns a profit of $8,000 pa after depreciation, ROI might be calculated on net book values or gross values, as follows.

Year	*Profit*	*NBV(mid-year value)*	*ROI based on NBV*	*Gross value*	*ROI based on gross value*
	$	$		$	
1	8,000	35,000	22.9%	40,000	20%
2	8,000	25,000	32.0%	40,000	20%
3	8,000	15,000	53.3%	40,000	20%
4	8,000	5,000	160.0%	40,000	20%

The ROI based on **net book value** shows an **increasing trend over time**, simply because the asset's value is falling as it is depreciated. The ROI based on gross book value suggests that the asset has **performed consistently** in each of the four years, which is probably a more valid conclusion.

Question — ROI calculation (2)

Repeat **Question: ROI calculation (1)**, measuring ROI as return on gross assets.

Answer

Year 2 – 5.6%
Year 6 – 5.6%

However, using gross book values to measure ROI has its **disadvantages**. Most important of these is that measuring ROI as return on gross assets ignores the age factor, and **does not distinguish between old and new assets**.

(a) **Older non-current assets** usually **cost more to repair and maintain**, to keep them running. An investment centre with old assets may therefore have its profitability reduced by repair costs, and its ROI might fall over time as its assets get older and repair costs get bigger.

(b) **Inflation** and **technological change alter the cost of non-current assets**. If one investment centre has non-current assets bought ten years ago with a gross cost of $1 million, and another investment centre, in the same area of business operations, has non-current assets bought very recently for $1 million, the quantity and technological character of the non-current assets of the two investment centres are likely to be very different.

2.1.3 Constituent elements of the investment base

Although we have looked at how the investment base should be valued, we need to consider its appropriate constituent elements.

(a) If a **manager's performance is being evaluated**, only those **assets** which can be **traced directly to the division** and are **controllable by the manager should be included**. Head office assets or investment centre assets controlled by head office should not be included. So, for example, only those cash balances actually maintained within an investment centre itself should be included.

(b) If it is the performance of the investment centre that is being appraised**, a proportion of the investment in head office assets would need to be included** because an investment centre could not operate without the support of head office assets and administrative backup.

2.1.4 Profits

We have looked at how to define the asset base used in the calculations but what about profit? If the **performance of the investment centre manager is being assessed** it should seem reasonable to **base profit on the revenues and costs controllable by the manager** and exclude service and head office costs except those costs specifically attributable to the investment centre. If it is the **performance of the investment centre that is being assessed, however, the inclusion of general service and head office costs would seem reasonable**.

Exam focus point

The profit figure for ROI should always be the amount before any interest is charged.

2.1.5 Massaging the ROI

If a manager's large bonus depends on ROI being met, the manager may feel pressure to massage the measure. The **asset base** of the ratio can be **altered** by increasing/decreasing payables and receivables (by speeding up or delaying payments and receipts).

2.2 ROI and new investments

If investment centre performance is judged by ROI, we should expect that the managers of investment centres will probably decide to undertake new capital investments **only if these new investments are likely to increase the ROI of their centre**.

Suppose that an investment centre, A, currently makes a return of 40% on capital employed. The manager of centre A would probably only want to undertake new investments that promise to yield a return of 40% or more, otherwise the investment centre's overall ROI would fall.

For example, if investment centre A currently has assets of $1,000,000 and expects to earn a profit of $400,000, how would the centre's manager view a new capital investment which would cost $250,000 and yield a profit of $75,000 pa?

	Without the new investment	*With the new investment*
Profit	$400,000	$475,000
Capital employed	$1,000,000	$1,250,000
ROI	40%	38%

The **new investment** would **reduce the investment centre's ROI** from 40% to 38%, and so the investment centre manager would probably decide **not to undertake** the new investment.

If the group of companies of which investment centre A is a part has a target ROI of, say, 25%, the new investment would presumably be seen as **beneficial for the group as a whole**. But even though it promises to yield a return of 75,000/250,000 = 30%, which is above the group's target ROI, it would still make investment centre A's results look worse. The manager of investment centre A would, in these circumstances, be motivated to do not what is best for the organisation as a whole, but what is **best for his division.**

ROI should not be used to guide investment decisions but there is a difficult **motivational** problem. If management performance is measured in terms of ROI, any decisions which benefit the company in the long term but which reduce the ROI in the immediate short term would reflect badly on the manager's reported performance. In other words, good investment decisions would make a manager's performance seem **worse** than if the wrong investment decision were taken instead.

3 Residual income (RI) 6/11, 6/12

FAST FORWARD

RI can sometimes give results that avoid the **behavioural** problem of **dysfunctionality**. Its weakness is that it does not facilitate comparisons between investment centres nor does it relate the size of a centre's income to the size of the investment.

An alternative way of measuring the performance of an investment centre, instead of using ROI, is residual income (RI). **Residual income** is a **measure of the centre's profits after deducting a notional or imputed interest cost**.

(a) The centre's profit is **after deducting depreciation** on capital equipment.

(b) The imputed cost of capital might be the organisation's cost of borrowing or its weighted average cost of capital.

Key term

Residual income is a measure of the centre's profits after deducting a notional or imputed interest cost.

Question RI

A division with capital employed of $400,000 currently earns an ROI of 22%. It can make an additional investment of $50,000 for a 5 year life with nil residual value. The average net profit from this investment would be $12,000 after depreciation. The division's cost of capital is 14%.

What are the residual incomes before and after the investment?

Answer

	Before investment	*After investment*
	$	$
Divisional profit ($400,000 × 22%)	88,000	100,000
Imputed interest		
(400,000 × 0.14)	56,000	
(450,000 × 0.14)		63,000
Residual income	32,000	37,000

3.1 The advantages and weaknesses of RI compared with ROI

The advantages of using RI

(a) Residual income will **increase** when investments earning above the cost of capital are undertaken and investments earning below the cost of capital are eliminated.

(b) Residual income is **more flexible** since a different cost of capital can be applied to investments with **different risk** characteristics.

The **weakness** of RI is that it **does not facilitate comparisons** between investment centres nor **does it relate the size of a centre's income to the size of the investment**.

3.2 RI versus ROI: marginally profitable investments

Residual income will increase if a new investment is undertaken which earns a profit in excess of the imputed interest charge on the value of the asset acquired. Residual income will go up even if the investment only just exceeds the imputed interest charge, and this means that 'marginally profitable' investments are likely to be undertaken by the investment centre manager.

In contrast, when a manager is judged by ROI, a marginally profitable investment would be less likely to be undertaken because it would reduce the average ROI earned by the centre as a whole.

3.2.1 Example: ROI versus residual income

Suppose that Department H has the following profit, assets employed and an imputed interest charge of 12% on operating assets.

	$	$
Operating profit	30,000	
Operating assets		100,000
Imputed interest (12%)	12,000	
Return on investment		30%
Residual income	18,000	

Suppose now that an additional investment of $10,000 is proposed, which will increase operating income in Department H by $1,400. The effect of the investment would be:

	$	$
Total operating income	31,400	
Total operating assets		110,000
Imputed interest (12%)	13,200	
Return on investment		28.5%
Residual income	18,200	

If the Department H manager is made responsible for the department's performance, he would **resist the new investment if he were to be judged on ROI**, but would **welcome the investment if he were judged according to RI**, since there would be a marginal increase of $200 in residual income from the investment, but a fall of 1.5% in ROI.

The marginal investment offers a return of 14% ($1,400 on an investment of $10,000) which is above the 'cut-off rate' of 12%. Since the original return on investment was 30%, the marginal investment will reduce the overall divisional performance. Indeed, any marginal investment offering an accounting rate of return of less than 30% in the year would reduce the overall performance.

Exam focus point

Examination questions on residual income may focus on the sort of behavioural aspects of investment centre measurement that we have discussed above, for example why it is considered necessary to use residual income to measure performance rather than ROI, and why residual income might influence an investment centre manager's investment decisions differently.

4 Transfer pricing 6/10, 12/11

FAST FORWARD

Transfer prices are a way of promoting **divisional autonomy**, ideally without prejudicing the **measurement of divisional performance** or discouraging **overall corporate profit maximisation**.

Transfer prices should be set at a level which ensures that profits for the organisation as a whole are maximised.

Transfer pricing is used when divisions of an organisation need to charge other divisions of the same organisation for goods and services they provide to them. For example, subsidiary A might make a component that is used as part of a product made by subsidiary B of the same company, but that can also

be sold to the external market, including makers of rival products to subsidiary B's product. There will therefore be two sources of revenue for A.

(a) External sales revenue from sales made to other organisations.
(b) Internal sales revenue from sales made to other responsibility centres within the same organisation, valued at the transfer price.

Key term

A **transfer price** is the price at which goods or services are transferred from one department to another, or from one member of a group to another.

4.1 Problems with transfer pricing

4.1.1 Maintaining the right level of divisional autonomy

Transfer prices are particularly appropriate for **profit centres** because if one profit centre does work for another the size of the transfer price will affect the costs of one profit centre and the revenues of another.

However, as we have seen, a danger with profit centre accounting is that the business organisation will **divide into a number of self-interested segments**, each acting at times against the wishes and interests of other segments. Decisions might be taken by a profit centre manager in the best interests of his own part of the business, but against the best interests of other profit centres and possibly the organisation as a whole.

4.1.2 Ensuring divisional performance is measured fairly

Profit centre managers tend to put their own profit performance above everything else. Since profit centre performance is measured according to the profit they earn, no profit centre will want to do work for another and incur costs without being paid for it. Consequently, profit centre managers are likely to dispute the size of transfer prices with each other, or disagree about whether one profit centre should do work for another or not. Transfer prices **affect behaviour and decisions** by profit centre managers.

4.1.3 Ensuring corporate profits are maximised

When there are disagreements about how much work should be transferred between divisions, and how many sales the division should make to the external market, there is presumably a **profit-maximising level of output and sales for the organisation as a whole**. However, unless each profit centre also maximises its own profit at this same level of output, there will be inter-divisional disagreements about output levels and the profit-maximising output will not be achieved.

4.1.4 The ideal solution

Ideally a transfer price should be set at a level that overcomes these problems.

(a) The transfer price should provide an 'artificial' selling price that enables the **transferring division to earn a return for its efforts**, and the **receiving division to incur a cost for benefits received**.
(b) The transfer price should be set at a level that enables **profit centre performance** to be **measured 'commercially'**. This means that the transfer price should be a fair commercial price.
(c) The transfer price, if possible, should encourage profit centre managers to agree on the amount of goods and services to be transferred, which will also be at a level that is consistent with the aims of the organisation as a whole such as **maximising company profits**.

In practice it is difficult to achieve all three aims.

Question

Benefits of transfer pricing

The transfer pricing system operated by a divisional company has the potential to make a significant contribution towards the achievement of corporate financial objectives.

Required

Explain the potential benefits of operating a transfer pricing system within a divisionalised company.

Answer

Potential benefits of operating a transfer pricing system within a divisionalised company include the following.

(a) It can lead to **goal congruence** by motivating divisional managers to make decisions, which improve divisional profit and improve profit of the organisation as a whole.

(b) It can prevent **dysfunctional decision making** so that decisions taken by a divisional manager are in the best interests of his own part of the business, other divisions and the organisation as a whole.

(c) Transfer prices can be set at a level that enables divisional performance to be measured 'commercially'. A transfer pricing system should therefore report a level of divisional profit that is a **reasonable measure of the managerial performance** of the division.

(d) It should ensure that **divisional autonomy** is not undermined. A well-run transfer pricing system helps to ensure that a balance is kept between divisional autonomy to provide incentives and motivation, and centralised authority to ensure that the divisions are all working towards the same target, the benefit of the organisation as a whole.

4.2 General rules

FAST FORWARD

The **limits within which transfer prices should fall** are as follows.

- **The minimum**. The sum of the supplying division's marginal cost and opportunity cost of the item transferred.
- **The maximum**. The lowest market price at which the receiving division could purchase the goods or services externally, less any internal cost savings in packaging and delivery.

The **minimum** results from the fact that the **supplying division will not agree to transfer if the transfer price is less than the marginal cost + opportunity cost of the item transferred** (because if it were the division would incur a loss).

The **maximum** results from the fact that the **receiving division will buy the item at the cheapest price possible**.

4.2.1 Example: general rules

Division X produces product L at a marginal cost per unit of $100. If a unit is transferred internally to division Y, $25 contribution is foregone on an external sale. The item can be purchased externally for $150.

- **The minimum**. Division X will not agree to a transfer price of less than $(100 + 25) = $125 per unit.
- **The maximum**. Division Y will not agree to a transfer price in excess of $150.

The difference between the two results ($25) represents the savings from producing internally as opposed to buying externally.

4.2.2 Opportunity cost

The **opportunity cost** included in determining the lower limit will be one of the following.

(a) The maximum contribution forgone by the supplying division **in transferring internally rather than selling goods externally**.

(b) The contribution forgone by **not using the same facilities** in the producing division **for their next best alternative use**.

If there is **no external market** for the item being transferred, and **no alternative uses for** the division's facilities, the **transfer price** = **standard variable cost of production**.

If there is an **external market** for the item being transferred and **no alternative**, **more profitable use** for the facilities in that division, the **transfer price = the market price**.

4.2.3 Example: The transfer price at full and spare capacity

The factors that influence the transfer price charged when divisions are operating at **full capacity** and **spare capacity** are best illustrated using an example.

Until recently, Strike Ltd focused exclusively on making soles for work boots and football boots. It sold these rubber soles to boot manufacturers. Last year the company decided to take advantage of its strong reputation by expanding into the business of making football boots. As a consequence of this expansion, the company is now structured as two independent divisions, the Boot Division and the Sole Division.

The Sole Division continues to make rubber soles for both football boots and work boots and sells these soles to other boot manufacturers. The Boot division manufactures leather uppers for football boots and attaches these uppers to rubber soles. During its first year the Boot Division purchased its rubber soles from outside suppliers so as not to disrupt the operations of the Sole Division.

Strike management now wants the Sole Division to provide at least some of the soles used by the Boot Division. The table below shows the contribution margin for each division when the Boot Division purchases from an outside supplier.

	Boot Division		*Sole Division*
	$		$
Selling price of football boot	100	Selling price of sole	28
Variable cost of making boot (not including sole)	45	Variable cost per sole	21
Cost of sole purchased from outside suppliers	25		
Contribution margin per unit	30	Contribution margin per unit	7

The information above indicates that the total contribution margin per unit is $37 ($30 + $7).

Required

What would be a fair transfer price if the Sole Division sold 10,000 soles to the Boot Division?

Solution

The answer depends on how busy the Sole Division is – that is, whether it has **spare capacity**.

No spare capacity

As indicated above, the Sole Division charges $28 and derives a contribution margin of $7 per sole. The Sole Division has **no spare capacity** and produces and sells 80,000 units (soles) to outside customers. Therefore, the Sole Division must receive from the Boot Division a payment that will at least cover its variable cost per sole **plus** its lost contribution margin per sole (the **opportunity cost**). If the Sole Division can not cover that amount (the **minimum** transfer price), it should not sell soles to the Boot Division. The minimum transfer price that would be acceptable to the Sole Division is$28, as shown below.

$21 (variable cost) + $7 (opportunity cost) = $28

Spare capacity

The minimum transfer price is different if a division has spare capacity. Assume the Sole Division produces 80,000 soles but can only sell 70,000 to the open market. As a result, it has available capacity of 10,000 units. In this situation, the Sole Division does not lose its contribution margin of $7 per unit, and therefore the minimum price it would now accept is $21 as shown below.

$21 (variable cost) + $0 (opportunity cost) = $21

In this case the Boot Division and the Sole Division should **negotiate** a transfer price within the range of $21 and $25 (cost from outside supplier).

4.3 The use of market price as a basis for transfer prices

If an **external market price exists** for transferred goods, profit centre managers will be aware of the price they could obtain or the price they would have to pay for their goods on the external market, and they would inevitably **compare** this price **with the transfer price**.

4.3.1 Example: Transferring goods at market value

A company has two profit centres, A and B. A sells half of its output on the open market and transfers the other half to B. Costs and external revenues in an accounting period are as follows.

	A	*B*	*Total*
	$	$	$
External sales	8,000	24,000	32,000
Costs of production	12,000	10,000	22,000
Company profit			10,000

Required

What are the consequences of setting a transfer price at market value?

Solution

If the transfer price is at market price, A would be happy to sell the output to B for $8,000, which is what A would get by selling it externally instead of transferring it.

	A		*B*		*Total*
	$	$	$	$	$
Market sales		8,000		24,000	32,000
Transfer sales		8,000		–	
		16,000		24,000	
Transfer costs	–		8,000		
Own costs	12,000		10,000		22,000
		12,000		18,000	
Profit		4,000		6,000	10,000

The **transfer sales of A are self cancelling with the transfer cost of B**, so that the total profits are unaffected by the transfer items. The transfer price simply spreads the total profit between A and B.

Consequences

(a) A earns the same profit on transfers as on external sales. B must pay a commercial price for transferred goods, and both divisions will have their profit measured in a fair way.

(b) A will be indifferent about selling externally or transferring goods to B because the profit is the same on both types of transaction. B can therefore ask for and obtain as many units as it wants from A.

A **market-based** transfer price therefore seems to be the **ideal** transfer price.

4.4 The merits of market value transfer prices

4.4.1 Divisional autonomy

In a decentralised company, divisional managers should have the **autonomy** to make output, selling and buying **decisions which appear to be in the best interests of the division's performance.** (If every division optimises its performance, the company as a whole must inevitably achieve optimal results.) Thus a **transferor division should be given the freedom to sell output on the open market,** rather than to transfer it within the company.

'Arm's length' transfer prices, which give profit centre managers the freedom to negotiate prices with other profit centres as though they were independent companies, will tend to result in a market-based transfer price.

4.4.2 Corporate profit maximisation

In most cases where the transfer price is at market price, **internal transfers** should be **expected**, because the **buying division** is likely to **benefit** from a better quality of service, greater flexibility, and dependability of supply. **Both divisions** may **benefit** from cheaper costs of administration, selling and transport. A market price as the transfer price would therefore **result in decisions which would be in the best interests of the company or group as a whole**.

4.4.3 Divisional performance measurement

Where a **market price exists**, but the **transfer price is a different amount** (say, at standard cost plus), divisional managers will **argue** about the volume of internal transfers.

For example, if division X is expected to sell output to division Y at a transfer price of $8 per unit when the open market price is $10, its manager will decide to sell all output on the open market. The manager of division Y would resent the loss of his cheap supply from X, and would be reluctant to buy on the open market. A wasteful situation would arise where X sells on the open market at $10, where Y buys at $10, so that administration, selling and distribution costs would have been saved if X had sold directly to Y at $10, the market price.

4.5 The disadvantages of market value transfer prices

Market value as a transfer price does have certain **disadvantages**.

(a) The **market price may be a temporary one**, induced by adverse economic conditions, or dumping, or the market price might depend on the volume of output supplied to the external market by the profit centre.

(b) A transfer price at market value might, under some circumstances, **act as a disincentive to use up any spare capacity** in the divisions. A price based on incremental cost, in contrast, might provide an incentive to use up the spare resources in order to provide a marginal contribution to profit.

(c) Many products **do not have an equivalent market price** so that the price of a similar, but not identical, product might have to be chosen. In such circumstances, the option to sell or buy on the open market does not really exist.

(d) There might be an **imperfect external market** for the transferred item, so that if the transferring division tried to sell more externally, it would have to reduce its selling price.

4.6 Cost-based approaches to transfer pricing

FAST FORWARD

Problems arise with the use of **cost-based** transfer prices because one party or the other is liable to perceive them as unfair.

Cost-based approaches to transfer pricing are often used in practice, because in practice the following conditions are common.

(a) There is **no external market** for the product that is being transferred.

(b) Alternatively, although there is an external market it is an **imperfect** one because the market price is affected by such factors as the amount that the company setting the transfer price supplies to it, or because there is only a limited external demand.

In either case there will not be a suitable market price upon which to base the transfer price.

4.6.1 Transfer prices based on full cost

Under this approach, the **full cost** (including fixed overheads absorbed) incurred by the supplying division in making the 'intermediate' product is charged to the receiving division. The obvious drawback to this is that the division supplying the product **makes no profit** on its work so is not motivated to supply internally. Also, there are a number of alternative ways in which fixed costs can be accounted for. If a **full cost plus** approach is used a **profit margin** is also included in this transfer price. The supplying division will therefore gain some profit at the expense of the buying division.

4.6.2 Example: Transfer prices based on full cost

Suppose a company has two profit centres, A and B. A can only sell half of its maximum output of 800 units externally because of limited demand. It transfers the other half of its output to B which also faces limited demand. Costs and revenues in an accounting period are as follows.

	A	*B*	*Total*
	$	$	$
External sales	8,000	24,000	32,000
Costs of production in the division	13,000	10,000	23,000
Profit			9,000

Division A's costs included fixed production overheads of $4,800 and fixed selling and administration costs of $1,000.

There are no opening or closing inventories. It does not matter, for this illustration, whether marginal costing or absorption costing is used. For the moment, we shall ignore the question of whether the current output levels are profit-maximising and congruent with the goals of the company as a whole.

If the transfer price is at full cost, A in our example would have 'sales' to B of $6,000 (($13,000 – 1,000) × 50%). Selling and administration costs are not included as these are not incurred on the internal transfers. This would be a cost to B, as follows.

	A		*B*		*Company as a whole*
	$	$	$	$	$
Open market sales		8,000		24,000	32,000
Transfer sales		6,000		–	
Total sales, inc transfers		14,000		24,000	
Transfer costs			6,000		
Own costs	13,000		10,000		23,000
Total costs, inc transfers		13,000		16,000	
Profit		1,000		8,000	9,000

The **transfer sales of A are self-cancelling with the transfer costs of B** so that total profits are **unaffected by the transfer items**. The transfer price simply spreads the total profit of $9,000 between A and B.

The obvious **drawback** to the transfer price at cost is that **A makes no profit** on its work, and the manager of division A would much prefer to sell output on the open market to earn a profit, rather than transfer to B, regardless of whether or not transfers to B would be in the best interests of the company as a whole. Division A needs a profit on its transfers in order to be motivated to supply B; therefore transfer pricing at cost is inconsistent with the use of a profit centre accounting system.

Key term

An **intermediate product** is one that is used as a component of another product, for example car headlights or food additives.

4.6.3 Transfer price at variable cost

A variable cost approach entails charging the variable cost (which we assume to be the same as the marginal cost) that has been incurred by the supplying division to the receiving division.

The problem is that with a transfer price at marginal cost the **supplying division does not cover its fixed costs.**

4.7 Identifying the optimal transfer price

Here are some guiding rules for identifying the optimal transfer price.

(a) The **ideal transfer price** should **reflect the opportunity cost** of sale to the supply division and the opportunity cost to the buying division. Unfortunately, full information about opportunity costs may not be easily obtainable in practice.

(b) Where a **perfect external market price exists and unit variable costs and unit selling prices are constant**, the **opportunity cost** of transfer will be **external market price** or **external market price less savings in selling costs**.

(c) In the **absence of a perfect external market price for the transferred item**, but when **unit variable costs are constant**, and the **sales price per unit of the end-product is constant**, the **ideal transfer price** should reflect the opportunity cost of the resources consumed by the supply division to make and supply the item and so should be at **standard variable cost + opportunity cost of making the transfer**.

(d) When **unit variable costs and/or unit selling prices are not constant,** there will be a **profit-maximising level of output** and the **ideal transfer price** will only be found by sensible **negotiation** and careful **analysis**.

   (i) Establish the output and sales quantities that will optimise the profits of the company or group as a whole.

   (ii) Establish the transfer price at which both profit centres would maximise their profits at this company-optimising output level.

   There may be a range of prices within which both profit centres can agree on the output level that would maximise their individual profits and the profits of the company as a whole. Any price within the range would then be 'ideal'.

4.8 Transfer pricing calculations

4.8.1 Sub-optimal decisions

Note that as the level of transfer price increases, its effect on a division within the organisation could lead to sub-optimalisation problems for the organisation as a whole.

4.8.2 Example: Sub-optimal decisions

For example, suppose division B could buy the product from an outside supplier for $10 instead of paying $15 ($6,000/(800/2)) to division A. This transfer price would therefore force division B to buy the product externally at $10 per unit, although it could be manufactured internally for a variable cost of $(13,000 – 4,800 – 1,000)/800 = $9 per unit.

Although division B (the buying division) would save ($15 – $10) = $5 per unit by buying externally, the organisation as a whole would lose $400 as follows.

	Per unit
	$
Marginal cost of production	9
External purchase cost	10
Loss if buy in	1

The overall loss on transfer/purchase of 400 units is therefore 400 × $1 = $400.

This loss of $1 per unit assumes that any other use for the released capacity would produce a benefit of less than $400. If the 400 units could also be sold externally for $20 per unit, the optimal decision for the organisation as a whole would be to buy in the units for division B at $10 per unit.

	Per unit
	$
Market price	20
Marginal cost	9
Contribution	11
Loss if buy-in	(1)
Incremental profit	10

The overall incremental profit would therefore be 400 × $10 = $4,000.

4.8.3 Example: Prices based on full cost plus

If the transfers are at cost plus a margin of, say, 10%, A's sales to B would be $6,600 ($13,000 –1,000) × 50% × 1.10).

	A		*B*		*Total*
	$	$	$	$	$
Open market sales		8,000		24,000	32,000
Transfer sales		6,600		–	
		14,600		24,000	
Transfer costs			6,600		
Own costs	13,000		10,000		23,000
		13,000		16,600	
Profit		1,600		7,400	9,000

Compared to a transfer price at cost, **A gains some profit** at the expense of B. However, A makes a bigger profit on external sales in this case because the profit mark-up of 10% is less than the profit mark-up on open market sales. The choice of 10% as a profit mark-up was arbitrary and unrelated to external market conditions.

The transfer price **fails on all three criteria** (divisional autonomy, performance measurement and corporate profit measurement) for judgement.

(a) Arguably, the transfer price does not give A fair revenue or charge B a reasonable cost, and so their profit **performance is distorted**. It would certainly be unfair, for example, to compare A's profit with B's profit.

(b) Given this unfairness it is likely that the **autonomy** of each of the divisional managers is **under threat.** If they cannot agree on what is a fair split of the external profit a decision will have to be imposed from above.

(c) It would seem to give A an incentive to sell more goods externally and transfer less to B. This may or **may not be in the best interests of the company as a whole**.

In fact we can demonstrate that the method is **flawed from the point of view of corporate profit maximisation**. Division A's total production costs of $12,000 include an element of fixed costs. Half of

division A's total production costs are transferred to division B. However from the point of view of division B the cost is entirely variable.

The cost per unit to A is $15 ($12,000 ÷ 800) and this includes a fixed element of $6 ($4,800 ÷ 800), while division B's own costs are $25 ($10,000 ÷ 400) per unit, including a fixed element of $10 (say). The **total variable cost is really** $9 + $15 = **$24**, but from division **B's point of view** the **variable cost** is $15 + $(25 – 10) = **$30**. This means that division B will be unwilling to sell the final product for less than $30, whereas any price above $24 would make a contribution to overall costs. Thus, if external prices for the final product fall, B might be tempted to cease production.

4.8.4 Example: Transfer prices based on variable or marginal cost

A variable or marginal cost approach entails charging the variable cost (which we assume to be the same as the marginal cost) that has been incurred by the supplying division to the receiving division. As above, we shall suppose that A's cost per unit is $15, of which $6 is fixed and $9 variable.

	A		*B*		*Company as a whole*	
	$	$	$	$	$	$
Market sales		8,000		24,000		32,000
Transfer sales		3,600		–		
		11,600		24,000		
Transfer costs	–		3,600			
Own variable costs	7,200		6,000		13,200	
Own fixed costs	5,800		4,000		9,800	
Total costs and transfers		13,000		13,600		23,000
(Loss)/Profit		(1,400)		10,400		9,000

4.8.5 Divisional autonomy, divisional performance measurement and corporate profit maximisation

(a) This result is **deeply unsatisfactory for the manager of division** A who could make an additional $4,400 ($(8,000 – 3,600)) profit if no goods were transferred to division B, but all were sold externally.

(b) Given that the manager of division A would prefer to transfer externally, **head office** are likely to have to **insist** that internal transfers are made.

(c) For the company overall, external transfers only would cause a large fall in profit, because division B could make no sales at all.

Point to note. Suppose no more than the current $8,000 could be earned from external sales and the production capacity used for production for internal transfer would remain idle if not used. Division A would be indifferent to the transfers at marginal cost as they do not represent any benefit to the division.

If more than the $8,000 of revenue could be earned externally (ie division A could sell more externally than at present), division A would have a strong disincentive to supply B at marginal cost.

Chapter Roundup

- There are a number of advantages and disadvantages to **divisionalisation**.
- **Responsibility accounting** is the term used to describe decentralisation of authority, with the performance of the decentralised units measured in terms of accounting results.

  With a system of responsibility accounting there are five types of **responsibility centre: cost centre; revenue centre; profit centre; contribution centre; investment centre**.
- The performance of an investment centre is usually monitored using either or both of **return on investment (ROI)** and **residual income (RI).**
- There is no generally agreed method of calculating ROI and it can have **behavioural implications** and lead to dysfunctional decision making when used as a guide to investment decisions. It focuses attention on short-run performance whereas investment decisions should be evaluated over their full life.
- RI can sometimes give results that avoid the **behavioural** problem of **dysfunctionality**. Its weakness is that it does not facilitate comparisons between investment centres nor does it relate the size of a centre's income to the size of the investment.
- Transfer prices are a way of promoting **divisional autonomy**, ideally without prejudicing the **measurement of divisional performance** or discouraging **overall corporate profit maximisation**.

  Transfer prices should be set at a level which ensures that profits for the organisation as a whole are maximised.
- The **limits within which transfer prices should fall** are as follows.
  - **The minimum**. The sum of the supplying division's marginal cost and opportunity cost of the item transferred.
  - **The maximum**. The lowest market price at which the receiving division could purchase the goods or services externally, less any internal cost savings in packaging and delivery.
- Problems arise with the use of **cost-based** transfer prices because one party or the other is liable to perceive them as unfair.

Quick Quiz

1 *Choose the correct words from those highlighted.*

ROI based on profits as a % of net assets employed will (a) **increase/decrease** as an asset gets older and its book value (b) **increases/reduces**. This could therefore create an (c) **incentive/disincentive** to investment centre managers to reinvest in new or replacement assets.

2 An investment centre with capital employed of $570,000 is budgeted to earn a profit of $119,700 next year. A proposed fixed asset investment of $50,000, not included in the budget at present, will earn a profit next year of $8,500 after depreciation. The company's cost of capital is 15%. What is the budgeted ROI and residual income for next year, both with and without the investment?

	ROI	*Residual income*
Without investment	……..	……..
With investment	……..	……..

3 'The use of residual income in performance measurement will avoid dysfunctional decision making because it will always lead to the correct decision concerning capital investments.' **True or false?**

4 To prevent dysfunctional transfer price decision making, profit centres must be allowed to make autonomous decisions. **True or false?**

5 Which of the following is not a disadvantage of using market value as a transfer price?

A The market price might be a temporary one.
B Use of market price might act as a disincentive to use up spare capacity.
C Many products do not have an equivalent market price.
D The external market might be perfect.

6 *Fill in the blanks.*

Ideally, a transfer price should be set that enables the individual divisions to maximise their profits at a level of output that maximises …… .

The transfer price which achieves this is unlikely to be a …….. transfer price or a ……. transfer price.

If optimum decisions are to be taken, transfer prices should reflect …… .

Answers to Quick Quiz

1 (a) increase
(b) reduces
(c) disincentive

2

	ROI	*Residual income*
Without investment	21.0%	$34,200
With investment	20.7%	$35,200

3 False

4 False. They cannot be allowed to make entirely autonomous decisions.

5 D

6 profit for the company as a whole; market-based; cost-based; opportunity costs

Now try the question below from the Exam Question Bank

Number	Level	Marks	Time
Q21	Examination	20	36 mins

13

Alternative views of performance measurement and management

Topic list	Syllabus reference
1 The balanced scorecard	E1(a)
2 The performance pyramid	E1(b)
3 Building blocks (Fitzgerald and Moon)	E1(c)
4 The Performance Prism	E1(d)
5 Activity-based management	E1(e)
6 Value-based management	E1(f)

Introduction

One of the key themes in this text has been that it is no longer sufficient for organisations to look at performance measurement solely in financial terms. Instead they also need to look at the activities and operations that underpin the financial results.

In this chapter, we look at a range of models and techniques which can be used to measure performance, and which do not look at 'performance' solely in terms of financial metrics.

By now, you should be aware of the balanced scorecard, the building block model, and activity-based management (which were introduced in F5). However, the other models may be new to you so we will take some time looking at each.

First we will explain the models and then we will evaluate their usefulness in measuring performance.

Study guide

		Intellectual level
E1	**Alternative views of performance measurement and management**	
(a)	Evaluate the 'balanced scorecard' approach as a way in which to improve the range and linkage between performance measures	3
(b)	Evaluate the 'performance pyramid' as a way in which to link strategy, operations and performance	3
(c)	Evaluate the work of Fitzgerald and Moon that considers performance measurement in business services using building blocks for dimensions, standards and rewards	3
(d)	Discuss and apply the Performance Prism	2
(e)	Discuss and evaluate the application of activity-based management	3
(f)	Evaluate and apply the value-based management approaches to performance management	3

Exam guide

One of the syllabus aims is to be able **to advise [...] on strategic business performance evaluation [...]**. So you must think about how you would use the models here in a report to advise management about how well an organisation is performing. Also you must think about the action words used in the study guide so you may need to **'evaluate'** different models or frameworks in your exam answer. What are the strengths or weaknesses of each? How could introducing them be beneficial to an organisation? Or why might some be more appropriate to a particular scenario than others?

Exam focus point

The balanced scorecard and Fitzgerald and Moon's building blocks model both featured in the June 2011 exam. The question on the balanced scorecard question required candidates to evaluate the measures proposed for use in the scorecard, and to describe how the scorecard could affect a company's strategic approach, rather than simply describing the scorecard itself. Similarly, the question about the building block model required candidates to apply their knowledge to a specific case study scenario, to advise how introducing the model could allow an organisation to improve its performance management.

One of the questions in the December 2011 exam asked candidates how the performance pyramid could be used to help evaluate the current performance management system in an organisation (whose KPIs are currently only financial) and then to explain how the pyramid could be used to help the organisation develop a coherent set of performance measures.

One of the questions in the June 2012 exam asked candidates to analyse the performance of an airline company in relation to two others using data provided in the scenario, and then it asked candidates to apply the performance prism in order to suggest improvements to the airline's performance management systems.

A question in the pilot paper asked for candidates to **discuss** links between performance measures in an organisation. The question made clear which model to apply by using key words such as **vertical**, **horizontal**, **hierarchy, internal and external** aspects.

Exam focus point (2)

Given the frequency with which the models in this chapter have been examined in recent sittings, make sure you look out for any current articles about them in *Student Accountant*.

Nick Ryan wrote an article on 'The Performance Prism' in the March 2012 edition of *Student Accountant.* We will discuss the Prism later in this chapter, but you are also strongly advised to read this article in full.

1 The balanced scorecard

FAST FORWARD

The **balanced scorecard** approach to performance measurement focuses on four different perspectives and uses financial and non-financial indicators.

In Chapter 10 (b) we noted that it is important for organisations to look at measures of **non-financial performance** (NFPIs) as well as looking at measures of **financial performance**. The argument we developed in Chapter 10 (b) is that financial measurements do not capture all the strategic realities of the business, but it is equally important that financial measurements are not overlooked. A failure to attend to the 'numbers' can rapidly lead to a failure of the business.

A performance measurement tool which encourages organisations to look at both financial and non-financial performance is the balanced scorecard. In Chapter 1 we looked at the example of Tesco's 'Steering wheel' which is its own adaptation of the scorecard, but here we will look at the scorecard in more detail.

Case Study

Business failures

During the global recession of 2008-09 there were stories about business failures almost every day in the newspapers. These articles often mentioned the reason given for the failure, and the state of economy was often seen as the number one cause.

However, this rationale tends to obscure a rather more painful truth. The reason for the business failure is usually the business itself.

An article in a local newspaper in Tupelo, Mississippi illustrated this point. The article looked at three food outlets in the town which had failed in 2009, and noted the owners' reasons for the failure. The reasons given were 'poor timing and the economy'.

However, customers who had been to the businesses noted that all three had three things in common: high prices, poor service and mediocre food.

One in particular - a sandwich shop - stood out. It had an ordering process that involved standing in line to order, and then moving to another station and standing in line to repeat your order and pay for it. The total wait for an expensive and really poor take out sandwich was over 45 minutes. (Yes, 45 minutes!) The shop was located in a mall, and four units away from a Mexican restaurant that was not only surviving but positively thriving. So it seems the economy was not the main reason for business failure after all!

The more pertinent point is that businesses – and particularly small businesses – are often launched and operated without the resources needed to succeed. To be successful, a business needs to supply a cost effective solution to customer needs.

If business don't understand their markets, their customers or their competition, and if they don't have a clear vision or direction, which is executed by management, they are likely to fail.

(Adapted from article, '*Who's to blame for most business failures*' on www.articlesbase.com, 19 January, 2010)

Knowledge brought forward from earlier studies

The **balanced scorecard** approach emphasises the need to provide management with a set of information which covers all relevant areas of performance in an objective and unbiased fashion. The information provided may be both financial and non-financial and cover areas such as **profitability**, **customer satisfaction**, **internal efficiency** and **innovation**.

The balanced scorecard focuses on **four different perspectives**, as follows.

Perspective	Question	Explanation
Customer	What do existing and new customers value from us?	Gives rise to targets that matter to customers: cost, quality, delivery, inspection, handling and so on.
Internal	What processes must we excel at to achieve our financial and customer objectives?	Aims to improve internal processes and decision making.
Innovation and learning	Can we continue to improve and create future value?	Considers the business's capacity to maintain its competitive position through the acquisition of new skills and the development of new products.
Financial	How do we create value for our shareholders?	Covers traditional measures such as growth, profitability and shareholder value but set through talking to the shareholder or shareholders direct.

By asking these questions, the organisation can establish its **major goals for each of the four perspectives**, and can then set performance measures and performance targets, based on these major goals, in relation to each of the perspectives.

The scorecard is **'balanced'** as managers are required to think in terms of **all four** perspectives, to prevent improvements being made in one area at the expense of another.

An example of how a balanced scorecard might appear is offered below.

Balanced Scorecard

Financial Perspective	
GOALS	**MEASURES**
Survive	Cash flow
Succeed	Monthly sales growth and operating income by division
Prosper	Increase market share and ROI

Customer Perspective	
GOALS	**MEASURES**
New products	Percentage of sales from new products
Responsive supply	On-time delivery (defined by customer)
Preferred supplier	Share of key accounts' purchases
	Ranking by key accounts
Customer partnership	Number of cooperative engineering efforts

Internal Business Perspective	
GOALS	**MEASURES**
Technology capability	Manufacturing configuration vs competition
Manufacturing excellence	Cycle time
	Unit cost
	Yield
Design productivity	Silicon efficiency
	Engineering efficiency
New product introduction	Actual introduction schedule vs plan

Innovation and Learning Perspective	
GOALS	**MEASURES**
Technology leadership	Time to develop next generation of products
Manufacturing learning	Process time to maturity
Product focus	Percentage of products that equal 80% sales
Time to market	New product introduction vs competition

Case Study

Philips Electronics

(based on a case study in Johnson, Scholes & Whittington, *Exploring Corporate Strategy*)

Philips Electronics uses the balanced scorecard to manage its diverse products lines and divisions around the world.

The company has identified four critical success factors (CSFs) for the organisation as a whole:

- Competence (knowledge, technology, leadership and teamwork)
- Processes (drivers for performance)
- Customers (value propositions)
- Financial performance (value, growth and productivity)

Philips applies these four scorecard criteria at four levels: overall strategy review, operations review, business unit level, and for individual employees.

In each case, criteria from one level are cascaded down to more detailed criteria at the level below, such that employees can understand how their day-to-day activities ultimately link back to overall corporate goals.

At the business unit level, for example, the management team determine the local critical success factors and then agree indicators for each. Targets are then set for each indicator.

Examples of the indicators at the business unit level include:

Financial perspective	**Customer perspective**
Economic profit Income from operations Working capital Operational cash flow Inventory turns	Rank in customer surveys Market share Repeat order rate Level of complaints Brand index
Processes (internal business perspective)	**Competence (innovation and learning perspective)**
Percentage reduction in process cycle time Number of engineering changes Capacity utilisation Order response time Process capability	Leadership competence Percentage of patent-protected turnover Training days per employee Quality improvement team participation

1.1 Advantages of the balanced scorecard

Important features of this approach are as follows.

(a) It looks at both **internal and external** matters concerning the organisation.

(b) It is related to the key elements of a company's **strategy**, and in this respect links **to long-term objectives** as well as **short-term ones**.

(c) **Financial and non-financial** measures are linked together.

By encouraging managers to consider a mixture of internal and external matters, long-term and short-term objectives, and financial as well as non-financial measures, the scorecard helps them obtain a **balanced view** about an organisation's performance.

Case Study

A study from Iran* shows how the balanced scorecard was adopted in Iranian colleges and schools and how it was used to formulate strategy by linking the perspectives. This study is interesting as it demonstrates **how the perspectives relate to each other.**

The **financial perspective** includes increasing service prices and decreasing costs. This was linked to developing services in the customer perspective.

The **customer perspective** included developing services and increasing customer satisfaction. This was also linked to managing relationships and ensuring internal systems could deliver services which both fall under the internal business perspective.

The **internal business perspective** contains a number of goals which seek to improve systems. For instance, developing IT, CRM (customer relationship management) and marketing.

Finally, the **learning and growth perspective** covers cultural development, developing IT skills and increasing employee knowledge. This links to the aims in the previous perspective. So for instance, developing IT skills links with developing IT.

*: Tohidi, H, Jafari, A and Afshar, A (2010) Using balanced scorecard in educational organizations, *Procedia Social and Behavioural Sciences* 2

Kaplan and *Norton* (who developed the Balanced Scorecard) have found that organisations are using it to:

- Identify and align strategic initiatives
- Link budgets with strategy
- Align the organisation (structure and processes) with strategy
- Conduct periodic strategic performance reviews with the aim of learning more about, and improving, strategy

This is consistent with Kaplan and Norton's original intention of how the scorecard should be used. They saw the Scorecard as a means **of translating mission and strategy into objectives**, and measures into four different perspectives. They also say it as a means of communicating mission and strategy and using the measures to inform employees about the key drivers of success.

However, interestingly Kaplan and Norton intended the scorecard to be a **communication** and **information** system, **not a control system**.

1.2 Problems with using the balanced scorecard

As with all techniques, problems can arise when the balanced scorecard is applied.

Problem	Explanation
Conflicting measures	Some measures in the scorecard such may naturally conflict (for example, a business process measure might be to speed up processing times, but cost control measures in financial perspectives may prevent the introduction of the new equipment needed to do this). It is often difficult to determine the balance between measures which will achieve the best results, but an organisation should always seek **goal congruence** between the different measures in its scorecard.
Selecting measures	Not only do appropriate measures have to be devised, but the number of measures used must be agreed. Care must be taken that the impact of the results is not lost in a sea of information. The innovation and learning perspective is, perhaps, the most difficult to measure directly, since much development of human capital will not feed directly into such crude measures as rate of new product launches or even training hours undertaken. It will, rather, improve economy and effectiveness and support the achievement of customer perspective measures. When selecting measures it is important to measure those which actually add value to an organisation, not just those that are easy to measure.
Expertise	Measurement is only useful if it initiates appropriate action. Non-financial managers may have difficulty with the usual profit measures. With more measures to consider this problem will be compounded. Measures need to be developed by someone who understands the business processes concerned.
Interpretation	Even a financially-trained manager may have difficulty in putting the figures into an overall perspective.
Management commitment	The scorecard can only be effective if senior managers commit to it. If they revert to focusing solely on the financial measures they are used to, then the value of introducing additional measures will be reduced. In this context, do not overlook the **cost** of the scorecard. There will be costs involved in measuring the performance of additional processes.

It may also be worth considering the following issues in relation to using the balanced scorecard:

- It doesn't provide a single aggregate summary performance measure; for example, part of the popularity of ROI or ROCE comes from the fact they provide a convenient summary of how well a business is performing.
- In comparison to measures like EVA, there is no direct link between the scorecard and **shareholder value**.
- **Practical issues with implementation**: Introducing the scorecard may require a shift in corporate culture; for example, in understanding an organisation as a set of processes rather as departments. Therefore, there may be practical difficulties in introducing the scorecard into an organisation.

  Equally, implementing the scorecard will require an organisation to move away from looking solely at short-term financial measures, and focus on longer-term strategic measures instead.

The scorecard should be used **flexibly.** Although there are four given perspectives, these may need to be adapted to fit the particular characteristics of a business. However, the process of deciding **what to measure** forces a business to clarify its strategy. For example, a manufacturing company may find that 50% – 60% of costs are represented by bought-in components, so measurements relating to suppliers could usefully be added to the scorecard. These could include payment terms, lead times, or quality considerations.

1.3 Linkages

If an organisation fails to look at all of measures in their **scorecard as a whole**, this might lead to **disappointing results**. For example, increasing productivity means that fewer employees are needed for a given level of output. Excess capacity can be created by quality improvements. However these improvements have to be exploited (eg by increasing sales). The **financial element** of the balanced scorecard 'reminds executives that improved quality, response time, productivity or new products, benefit the company only when they are translated into improved financial results', or if they enable the firm to obtain a sustainable competitive advantage.

1.4 Strategy maps

As an extension to the balanced scorecard, Kaplan and Norton also developed the idea of strategy maps, which could be used to help implement the scorecard more successfully.

Strategy maps identify six stages:

(a) Identify **objective**. Identify the key objectives of the organisation.

(b) **Value creation**. In the light of the key objectives identified, determine the main ways the organisation creates value.

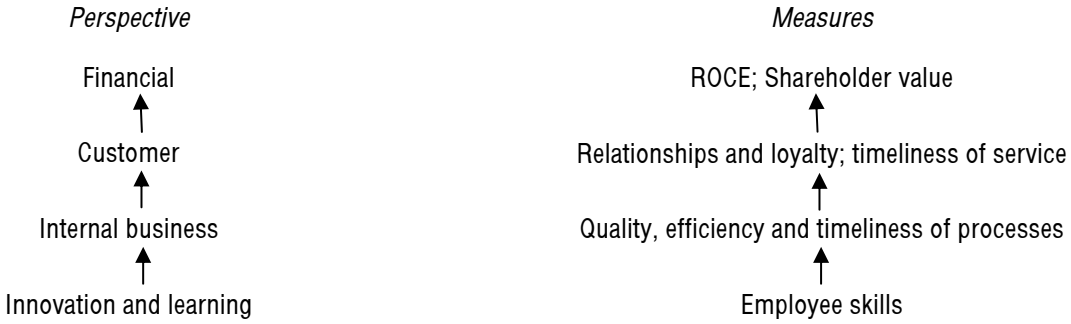
(c) **Financial perspective**: Identify financial strategies to support the overall objective and strategy

(d) **Customer perspective**. Clarify customer-orientated strategies to support the overall strategy

(e) **Internal processes**. Identify how internal processes support the strategy and help to create value

(f) **Innovation and learning**. Identify the skills and competencies needed to support the overall strategy and achieve the objectives.

The sequence of these stages also suggests there is a **hierarchy among the different perspectives**. The financial perspective is the highest level perspective, and the measures and goals from the other perspectives should help an organisation achieve its financial goals.



In this way, the strategy map highlights how the four perspectives of the scorecard help create value, with the overall aim of helping an organisation achieve its objectives. It can also help staff appreciate the way that different elements of performance management are linked to an organisation's overall strategy.

However, it is also important to recognise that the balanced scorecard only measures performance. **It does not indicate that the strategy an organisation is employing is the right one.** 'A failure to convert improved operational performance into improved financial performance should send executives back to their drawing boards to rethink the company's strategy or its implementation plans.'

Practical steps in developing a scorecard

As with any other projects or changes, if an organisation is going to implement a scorecard successfully, it will need to think carefully about the steps involved in developing a scorecard:

Identify key outcomes – Identify the key outcomes critical to the success of the organisation (this is similar to identifying the organisation's critical success factors)

Key processes – Identify the processes that lead to those outcomes

KPIs – Develop key performance indicators for those processes

Data capture – Develop systems for capturing the data necessary to measure those key performance indicators

Reporting – Develop a mechanism for communicating or reporting the indicators to staff (for example, through charts, graphs or on a dashboard)

Performance improvement – Develop improvement programmes to ensure that performance improves as necessary

1.5 Implementing the balanced scorecard

The introduction and practical use of the balanced scorecard is likely to be subject to all the problems associated with balancing long-term strategic progress against the management of short-term tactical imperatives. Kaplan and Norton recognise this and recommend an iterative, four-stage approach to the practical problems involved.

(a) **Translating the vision**: the organisation's mission must be expressed in a way that has to be clear operational meaning for each employee.

(b) **Communicating and linking**: the next stage is to link the vision or mission to departmental and individual objectives, including those that transcend traditional short-term financial goals.

(c) **Business planning**: the scorecard is used to prioritise objectives and allocate resources in order to make the best progress towards strategic goals.

(d) **Feedback and learning**: the organisation learns to use feedback on performance to promote progress against all four perspectives.

1.6 Using the balanced scorecard

(a) Like all performance measurement schemes, the balanced scorecard can influence behaviour among managers to conform to that required by the strategy. Because of its comprehensive nature, it can be used as a wide-ranging driver of organisational change.

(b) The scorecard emphasises **processes** rather than **departments**. It can support a competence-based approach to strategy, but this can be confusing for managers and may make it difficult to gain their support. (Moreover although the scorecard looks at processes, it focuses mainly on an organisation's own process, rather than comparing performance to other organisations, for example through benchmarking.)

(c) Deciding just what to measure can be especially difficult, especially since the scorecard **vertical vector** lays emphasis on customer reaction. This is not to discount the importance of meeting customer expectations, purely to emphasise the difficulty of establishing what they are.

1.6.1 A word of warning

Kaplan and Norton never intended the balanced scorecard to replace all other performance measurement systems a business may use. They acknowledge that financial measures and financial results remain important, but suggest business can use the scorecard to help deliver strategic goals.

Kaplan and Norton have also acknowledged that the scorecard needs to recognise the linkages between **strategic**, **tactical** (management) and **operational levels** in organisations. In this context, they recognise that indicators measured in the scorecard often focus on the strategic level, rather than looking on the practical, day-to-day operational levels. Operational managers need far more detail about performance than is given in the scorecard.

Increasingly, organisations are looking to be able to identify the linkages between these levels, and to be able to drill down and identify the sources and root causes behind the under-performance at a strategic level.

2 The performance pyramid

FAST FORWARD

The **performance pyramid** highlights the links running between an organisation's vision and its functional objectives.

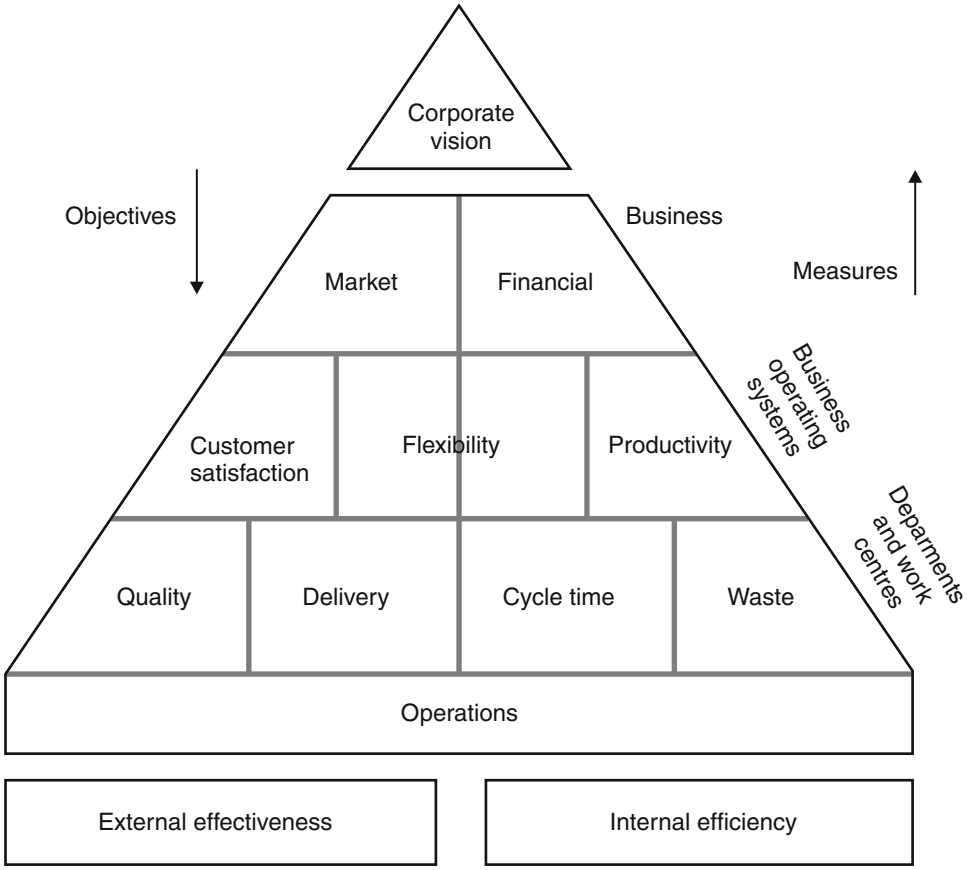
Key term

The **performance pyramid** derives from the idea that an organisation operates at different levels, each of which has different concerns which should nevertheless support each other in achieving business objectives. The pyramid therefore links the overall strategic view of management with day to day operations.

The performance pyramid (developed by Lynch and Cross) stems from an acknowledgement that traditional performance measures that focused on financial indicators such as profitability, cash flow and return on capital employed did not address the driving forces that guide an organisation's ability to achieve its strategic objectives.

Instead of focusing purely on financial objectives, the pyramid focuses on a range of **objectives** for both **external effectiveness** (related to customer satisfaction) and **internal efficiency** (related to flexibility and productivity), which Lynch and Cross propose are the driving forces upon which company objectives are based. The status of these driving forces can then be monitored and measured by the indicators at the lower levels in the pyramid – measures of quality, delivery, cycle time and waste.

However, a crucial point behind the presentation of the model as a pyramid is that, although the organisation operates at different levels, each of which has a different focus, it is vital that each different level supports each other. In this way, the pyramid explicitly makes the link between **corporate level strategy** and the **day-to-day operations** of an organisation.



Performance Pyramid (*Source*: ACCA, December 2011 P5 exam: Solutions.)

Note: When looking at any appraisal of costs it is crucial to understand the **processing driving** the costs, rather than simply looking at the costs as figures in the management accounts.

(a) At **corporate level**, the vision is developed and financial and market objectives are set in accordance with the **vision**.

(b) At **strategic business unit** level, strategies are developed to achieve these financial and market objectives.

  (i) **Customer satisfaction** is defined as meeting customer expectations.
  (ii) **Flexibility** indicates responsiveness of the business operating system as a whole.
  (iii) **Productivity** refers to the management of resources such as labour and time.

(c) These in turn are supported by more specific **operational** criteria.

  (i) **Quality** of the product or service, consistency of product and fit for the purpose

  (ii) **Delivery** of the product or service (the method of distribution, its speed and ease of management)

  (iii) **Process time** of all processes from cash collection to order processing to recruitment

  (iv) **Waste**, meaning the elimination of all non value added activities

The pyramid highlights the **links** running between the **vision for the company** and **functional objectives**. For example, a reduction in process time should lead to increased productivity and hence improved financial performance. The links within the pyramid help to ensure not only **goal congruence** but also a **consistency of performance** across all business areas, and a balanced approach.

2.1 Strengths and weaknesses of the performance pyramid

The performance pyramid clearly links the performance measures at the different hierarchical levels of the organisation, and encourages operational performance measures to be linked to strategic goals. Individual departments need to be aware of the extent to which they are contributing to strategic aims, and their performance measures should link operational goals to strategic goals. This in itself is a strength, but perhaps the key strength of the model is the fact that it links this **hierarchical view** of performance measurement with an appreciation of **business processes** and the need to focus all business activities on the **requirements of the customer.** (In this respect, the model contains echoes of Porter's Value Chain which highlights the importance of business processes creating **value** for the customer.)

The model also makes clear the measures that are of interest to **external** parties (such as customer satisfaction, quality and delivery) and those that the business focuses on **internally** such as (productivity, cycle time and waste.)

However the model does not suggest how key performance indicators may be identified.

And, as with the Balanced Scorecard, critics have pointed to problems with applying the performance pyramid.

- Applying it may significantly increase the **cost** of organisational control.
- An organisation should measure the factors which are **most important to achieving its objectives**, rather than simply the ones which are **easy to measure**. However, the factors which are crucial to success may be difficult or expensive to measure.
- **Management effort**, which could otherwise be devoted to running the business, could be used in devising performance measures and responding to reports
- Measures may **conflict** (for example could there be a trade-off between quality and cost?) Any such conflict could demotivate managers who feel they are caught in a 'no win' situation
- Staff turnover may increase if staff feel they are being checked upon on all the time or have to spend lots of time inputting data

Exam focus point

Performance pyramids are discussed further in the article 'The Pyramids and pitfalls of Performance Measurement' by a former examiner (Shane Johnson). This article, published in September 2005, is available on the ACCA website and you are strongly advised to read it if you have not already done so.

3 Building blocks (Fitzgerald and Moon)

FAST FORWARD

Fitzgerald and Moon's **building blocks** for **dimensions, standards** and **rewards** attempt to overcome the problems associated with performance measurement of **service businesses**.

Exam focus point

The building block model was tested in a Section B question in the June 2011 exam. The first part of the question (for 4 marks) was purely a test of knowledge in which candidates were asked to briefly describe the model. However, the majority of the question (the remaining 16 marks) required candidates to apply the model to a case study scenario, in order to evaluate the current performance management system in an organisation and then suggest how the building block model could help to improve that system.

Question

Services v manufacturing

In Chapter 3 we looked at five major characteristics of services that distinguish services from manufacturing. Can you relate them to the provision of a haircut?

Answer

(a) **Intangibility**. A haircut is intangible in itself, and the performance of the service comprises many other intangible factors, like the music in the salon, the personality of the hairdresser.

(b) **Simultaneity/inseparability**. The production and consumption of a haircut are simultaneous, and so cannot be inspected for quality in advance, nor returned if it is not what was required.

(c) **Perishability**. Haircuts are perishable, so they cannot be stored. You cannot buy them in bulk, and the hairdresser cannot do them in advance and keep them in inventory in case of heavy demand.

(d) **Heterogeneity/variability**. A haircut is heterogeneous and so the exact service received will vary each time: not only will Justin and Nigel cut hair differently, but Justin will not consistently deliver the same standard of haircut.

(e) **No transfer of ownership.** A haircut does not become the property of the customer.

Question

Characteristics of services

Consider how the factors intangibility, simultaneity, perishability, no transfer of ownership and heterogeneity apply to the various services that you use: public transport, your bank account, meals in restaurants, the postal service, your annual holiday and so on.

Knowledge brought forward from earlier studies

Performance measurement in service businesses has sometimes been perceived as difficult because of the five factors listed above, but the modern view is that if something is difficult to measure this is because it has not been clearly enough defined. Fitzgerald *et al* and Fitzgerald & Moon provide **building blocks** for **dimensions, standards** and **rewards** for performance measurement systems **in service businesses**.

Dimensions are the areas of performance which yield the specific performance metrics for a company. The dimensions are split into **results** (competitive performance and financial performance) and **determinants** which affect those results (quality of service, flexibility, resource utilisation and innovation).

Knowledge brought forward from earlier studies (continued)

Results

(a) **Competitive performance**, focusing on factors such as sales growth and market share.

(b) **Financial performance**, concentrating on profitability, capital structure and so on.

Determinants

(c) **Quality of service** looks at matters like reliability, courtesy and competence.

(d) **Flexibility** is an apt heading for assessing the organisation's ability to deliver at the right speed, to respond to precise customer specifications, and to cope with fluctuations in demand.

(e) **Resource utilisation**, not unsurprisingly, considers how efficiently resources are being utilised. This can be problematic because of the complexity of the inputs to a service and the outputs from it and because some of the inputs are supplied by the customer (he or she brings their own hair, for example). Many measures are possible, however, for example 'number of customers per hairdresser'. Performance measures can be devised easily if it is known what activities are involved in the service.

(f) **Innovation** is assessed in terms of both the innovation process and the success of individual innovations.

Focusing on the examination and improvement of the determinants should lead to improvement in the results.

There is no need to elaborate on **competitive performance**, **financial performance** and **quality of service** issues, all of which have been covered already. The other three dimensions deserve more attention.

Flexibility

Flexibility has three aspects:

Speed of delivery

Punctuality is vital in some service industries like passenger transport: indeed punctuality is currently one of the most widely publicised performance measures in the UK, because organisations like railway companies are making a point of it. **Measures** include waiting time in queues, as well as late trains. In other types of service it may be more a question of **timeliness**. Does the auditor turn up to do the annual audit during the appointed week? Is the audit done within the time anticipated by the partner or does it drag on for weeks? These aspects are all easily measurable in terms of **'days late'**. Depending upon the circumstances, 'days late' may also reflect on inability to cope with fluctuations in demand.

Response to customer specifications

The ability of a service organisation to respond to **customers' specifications** is one of the criteria by which Fitzgerald *et al* distinguish between the three different types of service. Clearly a professional service such as legal advice and assistance must be tailored exactly to the customer's needs. Performance is partly a matter of customer perception and so **customer attitude surveys** may be appropriate. However it is also a matter of the diversity of skills possessed by the service organisation and so it can be measured in terms of the **mix of staff skills** and the amount of time spent on **training**. In **mass service** business customisation is not possible by the very nature of the service.

Knowledge brought forward from earlier studies (continued)

Coping with demand

This is clearly measurable in quantitative terms in a mass service like a railway company which can ascertain the extent of **overcrowding**. It can also be very closely monitored in service shops: customer **queuing** time can be measured in banks and retailers, for example. Professional services can measure levels of **overtime** worked: excessive amounts indicate that the current demand is too great for the organisation to cope with in the long term without obtaining extra human resources.

Resource utilisation measures

Resource utilisation is usually measured in terms of **productivity**. The ease with which this may be measured varies according to the service being delivered.

The main resource of a firm of accountants, for example, is the **time** of various grades of staff. The main output of an accountancy firm is **chargeable hours**.

In a restaurant it is not nearly so straightforward. Inputs are highly **diverse**: the ingredients for the meal, the chef's time and expertise, the surroundings and the customers' own likes and dislikes. A **customer attitude survey** might show whether or not a customer enjoyed the food, but it could not ascribe the enjoyment or lack of it to the quality of the ingredients, say, rather than the skill of the chef.

Innovation

In a modern environment in which product quality, product differentiation and continuous improvement are the order of the day, a company that can find innovative ways of satisfying customers' needs has an important **competitive advantage**.

Fitzgerald *et al* suggest that **individual innovations** should be measured in terms of whether they bring about **improvements in the other five 'dimensions'**.

The innovating **process** can be measured in terms of how much it **costs** to develop a new service, how **effective** the organisation is at generating new processes (how innovative the organisation is), and how **quickly** the organisation can develop new services. This might translate into looking at measures relating to:

(a) The amount of R&D spending, and whether (and how quickly) these costs are recovered from new service sales

(b) The proportion of new services to total services provided

(c) The time between identifying the need for a new service and making it available

Standards

Standards are the measures chosen for each of the dimensions being measured. In order to be effective, employees must view standards as **fair** and **achievable**, and must take **ownership** of them.

(a) To ensure that employees take **ownership** of standards, they need to **participate** in the budget and standard-setting processes. They are then more likely to **accept** the standards, feel more **motivated** as they perceive the standards to be achievable and **morale** is improved. The disadvantage to participation is that it offers the opportunity for the introduction of **budgetary slack**.

(b) **Achievability** - Standards need to be set **high enough** to ensure that there is some **sense of achievement** in attaining them, but **not so high** that there is a **demotivating** effect because they are unachievable. It is management's task to find a **balance** between what the organisation perceives as achievable and what employees perceive as achievable.

Knowledge brought forward from earlier studies (continued)

(c) **Fairness** - It is vital that equity is seen to occur when applying standards for performance measurement purposes. The performance of different business units should not be measured against the same standards if some units have an inherent advantage unconnected with their own efforts. For example, divisions operating in different countries should not be assessed against the same standards.

Rewards

Rewards are the motivators which encourage employees to work towards the standards set.

Three issues need to be considered if the performance measurement system is to operate successfully: **clarity**, **motivation** and **controllability**.

(a) The organisation's objectives need to be **clearly understood** by those whose performance is being appraised; that is, they need to know what goals they are working towards.

(b) Individuals should be **motivated** to work in pursuit of the organisation's strategic objectives. Goal clarity and participation have been shown to contribute to higher levels of motivation to achieve targets, providing managers accept those targets. Bonuses can be used to motivate.

(c) Managers should have a certain level of **controllability** for their areas of responsibility. For example they should not be held responsible for costs over which they have no control.

Now try the question below using your knowledge of the model.

Question

Competitiveness and resource utilisation

A service business has collected some figures relating to its year just ended.

		Budget	*Actual*
Customer enquiries:	New customers	6,000	9,000
	Existing customers	4,000	3,000
Business won:	New customers	2,000	4,000
	Existing customers	1,500	1,500
Types of services performed:	Service A	875	780
	Service B	1,575	1,850
	Service C	1,050	2,870
Employees:	Service A	5	4
	Service B	10	10
	Service C	5	8

Required

Calculate figures that illustrate competitiveness and resource utilisation.

Answer

Competitiveness can only be measured from these figures by looking at how successful the organisation is at converting enquiries into firm orders.

Percentage of enquiries converted into firm orders

	Budget	*Actual*
New customers (W1)	33%	44%
Existing customers (W1)	37.5%	50%

Resource utilisation can be measured by looking at average services performed per employee.

	Budget	*Actual*	*Rise*
Service A (W2)	175	195	+11.4%
Service B (W2)	157.5	185	+17.5%
Service C (W2)	210	358.75	+70.8%

Workings

1 For example 2,000/6,000 = 33%
2 For example 875/5 = 175

What comments would you make about these results? How well is the business doing?

3.1 Points to consider

There is some debate as to **how far the links between the financial results and the determinants** of those results **can be precisely identified.** Better quality will please customers, but there is a problem of **short-term versus long-term** benefits. Quality costs money now, while the benefits may take a long time to come through.

There is also the question of **how much quality** is enough: endless improvements that cost a lot of money, but are not necessarily sought by the customers (who may indeed be unwilling to pay for them) will harm long-term profitability.

Exam focus point

In the exam, you may be required to suggest appropriate performance measures for different areas of an organisation's business. Remember to make sure the measures you suggest are relevant to, and suitable for, the organisation in question. For example, there is little point in suggesting measures such as waiting times in queues to assess the quality of the service provided by an educational establishment.

Question

Performance indicators

Suggest two separate performance indicators that could be used to assess each of the following areas of a fast food chain's operations.

(a) Food preparation department
(b) Marketing department

Answer

Here are some suggestions.

(a)	Material usage per product	(b)	Market share
	Wastage levels		Sales revenue per employee
	Incidences of food poisoning		Growth in sales revenue

3.2 Strengths and weaknesses of the building blocks model

The model is clear when it explains how to encourage employee participation in setting budgets and standards and links these to the reward system. It also sets a range of financial and non-financial 'dimensions' similar to the balanced scorecard but specifically tailored to service activities. For instance quality of service is a measure included under dimensions.

However, it can be difficult to see how the building blocks relate to strategic objectives. Although employees are encouraged to take part in budget setting how the overall objectives of the organisation relate to budgets is not clear.

Finally, remember the model is designed for service businesses so it is difficult to apply elsewhere.

4 The Performance Prism

4.1 There is no one 'holy grail' of organisational performance measurement

FAST FORWARD

The **Performance Prism** takes five facets affecting business performance and combines these to make a multi-faceted framework to appraise performance.

Exam focus point

If you have not already read the article by Nick Ryan ('The Performance Prism') from the March 2012 edition of *Student Accountant* we would strongly encourage you to do so, to accompany your studies for this section of the syllabus.

The Performance Prism was developed by Andy Neely and Chris Adams in response to concerns that existing performance management frameworks (such as the Balanced Scorecard and the Performance Pyramid) understated the importance of organisations analysing their **stakeholders** and stakeholders' needs, before considering strategies and processes and the capabilities needed to deliver those strategies.

Neely and Adams also believed that organisations had become too obsessed with **measurement**, and, as a result, had lost sight of the **strategic** side of **management**. The performance prism therefore aims to help managers *manage* their business, without resorting to *measuring* everything.

In this section, we have included some quotations from an article '*Perspectives on Performance: The Performance Prism'* by Andy Neely and Chris Adams themselves, explaining the Performance Prism.

'The key [to performance management] is to recognise that, despite the claims of some of the proponents of these various frameworks and methodologies, there is no one 'holy grail' or best way to view business performance. And the reason for this is that business performance is itself a multi-faceted concept.'

Exam focus point

In Chapter 3 earlier in this text, we looked at the way stakeholders might influence business performance, but we also highlighted that the relationship between an organisation and its stakeholders is a two-way relationship: the organisation's performance can also affect its stakeholders.

The nature of this relationship between organisations and stakeholders, and its impact on organisational strategies and performance is central to the idea of the performance prism which we will now look at here.

4.1.1 The Performance Prism - an overview

The Performance Prism is a **three dimensional** model. The model has **five facets**. The top and bottom facets are **Stakeholder Satisfaction and Stakeholder Contribution** respectively. The three side facets are **Strategies, Processes** and **Capabilities**. These five facets are linked and have a sequential order starting with **Stakeholder Satisfaction** and finishing with **Stakeholder contribution.**

Step 1 The model starts from the precept that successful organisations have a clear picture of who their **key stakeholders** are and what they want.

Step 2 These organisations then **define what strategies** they will pursue to ensure that value is delivered to these stakeholders.

Step 3 They understand what **processes** the enterprise requires if these strategies are to be delivered and they have defined what **capabilities** they need to execute these processes.

Step 4 Successful organisations have also thought carefully about what it is that the organisation **wants from its stakeholders**. This includes employee loyalty, customer profitability, and long term investment, for instance.

'In essence they have a clear business model and an explicit understanding of what constitutes and drives good performance.'

The model therefore asks **five key questions** when considering the **design of a measurement system**:

(a) **Stakeholder Satisfaction** – who are the key stakeholders and what do they want and need?

(b) **Strategies** – what strategies do we have to put in place to satisfy the wants and needs of these key stakeholders?

(c) **Processes** – what critical processes do we require if we are to execute these strategies?

(d) **Capabilities** – what capabilities do we need to operate and enhance these processes?

(e) **Stakeholder Contribution** – what contributions do we require from our stakeholders if we are to maintain and develop these capabilities?

4.1.2 Facet one: stakeholder satisfaction

Strategies are pursued in the belief that, when implemented, they will enable the organisation to better deliver value to its **multiple stakeholders**. These include investors, customers and intermediaries, employees, suppliers, regulators and communities.

Stakeholders in an organisation encompass a broad range of groups and individuals. We looked at stakeholders in some detail in Chapter 3.

The first group and, for many organisations, the most important group are the **shareholders.** However, an increasing emphasis on service in recent years has seen a growing recognition of other stakeholder groups, most notably **customers.**

Frameworks such as the Balanced Scorecard and the Performance Pyramid focus on the needs of shareholders (owners) and customers, but Neely and Adams argue that it is no longer feasible for organisations to focus on the needs of only one or two stakeholder groups.

For manufacturing and many service businesses, **suppliers** are also an essential stakeholder group to consider. And **employees** are another stakeholder group that all organisations should consider.

Managers need to decide **who are the most influential stakeholders** and **what do they want and need**? Managers must then identify performance measures to monitor how well their organisation is meeting those needs.

4.1.3 Facet two: strategies

Neely and Adams suggest that many organisations think it will be easy to select performance measures once they have identified their strategy. However, such an approach confuses 'strategy' and 'goals'. In the performance prism, strategy means '*how* the goal is achieved.' The strategy is not the goal itself.

Neely and Adams state: 'Performance measures are designed to help people track whether they are moving in the direction they want to. They help managers establish whether they are going to reach the destination they set out to reach. Strategy, however, is not about destination. Instead, it is about the route you choose to take – *how* to reach the desired destination. '

So, the performance prism states that organisations should adopt particular strategies because they believe those strategies will help them achieve a specific, desirable end goal. **Strategies are not the ultimate objectives of the organisation, but ways to achieve these goals.**

Neely and Adams are critical of many organizations which, they say, set goals without having the means to attain those goals.

Case Study

Neely and Adams quote an example of an organisation using strategies which include the means as well as the ultimate goal.

'Amazon.com, the original Internet book retailer, have not started to expand into CD sales, toys and home improvement products, just because they feel like expanding their product portfolio. They have deliberately decided to leverage their e-commerce and operational expertise – their core processes and capabilities – to extend the range of products they sell beyond books *because* they want to increase sales revenues and, in the longer term, enhance shareholder returns. Expanding into CD sales and other product lines is the strategy they hope will enable them to achieve these objectives.'

Neely and Adams assert that the key question underlying this perspective is what strategies should the organisation adopt to ensure that the wants and needs of its stakeholders are satisfied, whilst also ensuring that its own requirements are satisfied as well.

The role of measurement here is fourfold. There are four requirements of the performance measurement system in measuring strategic initiatives:

(a) **Tracking implementation**. Managers can track whether or not the strategies they have chosen are actually being implemented; and, if they are, how well they are being implemented.

(b) **Communication**. Measures can be used to communicate these strategies within the organisation.

(c) **Motivation.** Measures can be applied to encourage and incentivise implementation of strategy by managers within the organisation.

(d) **Feedback and action**. Once available, the measurement data can be analysed and used to challenge whether the strategies are working as planned (and, if not, why not).

We have already noted in Chapter 12 that performance measures can sometimes affect performance in quite unintended ways (as illustrated by the impact that bankers' bonuses part on short-term profits had in encouraging risky decision-making prior to the 2008-9 global financial crisis.)

Case Study

Neely and Adams quote an example of how performance measures can distort the behaviour that they are seeking to achieve.

'When telesales staff are monitored on the length of time it takes for them to deal with customer calls, it is not uncommon to find them cutting people off mid-call, just so the data suggest that they have dealt with the call within 60 seconds. Malevolently or not, employees will tend towards adopting 'gaming tactics' in order to achieve the target performance levels they have been set.'

We know that performance measures notify people about what matters and how they should behave. Therefore the right measures should be consistent with the organisation's strategies, as they encourage behaviours that are consistent with strategy.

However, many of the existing measurement frameworks and methodologies don't go beyond establishing strategies and deriving measures.

Neely and Adams note that studies suggest that some **90% of managers fail to implement** and deliver their organisation's strategies.

They give several reasons for this failure. Strategies contain **inherent assumptions** about the **drivers** of **improved business performance**. So, if the **assumptions are false**, then the **expected benefits will not be achieved**. Management need relevant data to inform and improve the making of decisions and judgments. Without this critical data to enable these assumptions to be challenged, strategy formulation

(and revision) is largely predicated on 'gut feel' and management theory. Management need to judge whether an organisation's strategy and business model remains valid.

4.1.4 Facets three and four: processes and capabilities

A second reason for strategic failure is that the organisation's **processes** are **not aligned** with its **strategies**. And **even if its processes are aligned**, then the **capabilities** required to operate these processes are **not**.

Therefore the next two perspectives on performance are **processes** and **capabilities**. Management need to ask:

(a) 'Have we got the right business processes in place to support the strategies, or what **processes** do we need to put in place to allow the strategies to be executed?'

(b) 'What **capabilities** do/shall we require to operate these processes – both now and in the future?'

The success of processes and capabilities can be measured in the following ways:

(a) **Tracking**. So managers can track whether or not the right processes and capabilities are in place. Measures will need to be developed to see how well the processes are working.

(b) **Communication.** To allow management to communicate which processes and capabilities matter.

(c) **Maintenance**. To encourage people within the organisation to maintain or proactively nurture these processes and capabilities as appropriate. This may involve gaining an understanding of which particular business processes and capabilities must be competitively distinctive ('winners'), and which merely need to be improved or maintained at industry standard levels ('qualifiers').

Managers need to identify which the **most important processes** are, so that they can focus attention on these, rather than simply (trying to) measure how well all processes are functioning. **Business process re-engineering** could then be used to identify any redundant processes or to make improvements to key processes.

Broadly speaking, business process re-engineering focuses on measuring processes but **fails to set priorities**. Therefore processes need someone to take responsibility and to 'own' the process. They will decide what measures are important, which metrics will apply and how frequently they shall be measured, by whom. This means that judgements can be made upon analysis of the data and actions taken.

Neely and Adams also emphasise how **capabilities integrate with processes**. Processes cannot be implemented in isolation. They are backed up by capabilities. These capabilities include:

(a) **Skills**. So people who possess certain skills will be involved.
(b) **Policies**. That is, some policies and procedures about the way things are done.
(c) **Infrastructure**. So, some physical infrastructure for it to happen.
(d) **Technology**. More than likely, some technology to enable or enhance it.

Neely and Adams note that **capabilities** can be defined as the **combination** of an organisation's **people**, **practices, technology** and **infrastructure** which are required in order to processes to work, and which collectively represents that organisation's ability to create value for its stakeholders through a distinct part of its operations.

Often that 'distinct part' will be a business process, but it could also be a brand, a product/service or an organisational element. Measurement will need to focus on those critical component elements that make a capability distinctive and also allow it to remain distinctive in the future.

Exam focus point

Although Neely and Adams were critical of the Performance Pyramid for focusing mainly on performance in relation to shareholders (owners) and customers, the facets of the Performance Prism could be seen as having a hierarchical 'top-down' pattern, which is similar in some respects to that of the Pyramid.

This highlights the key point that this highlights is that the facets of the Performance Prism need to support each other. At the 'top' of the hierarchy, is the need for an organisation to set its **goals** and its overall **strategies** for achieving them. Then the **processes** required to achieve the strategies are identified, and finally the **capabilities** required in order for the organisation to perform the processes.

Exam focus point (2)

The references to 'processes' and 'capabilities' in the Performance Prism also suggest a link back to models such as **Porter's Value chain** and the **McKinsey 7S model**, which we looked at in Chapter 3 earlier in this Study Text.

These models highlighted the importance of ensuring that an organisation's value activities, systems and behaviours are properly aligned to the competitive strategy it is pursuing.

One of the reasons for strategic failure we have just noted in 4.1.4 (above) is that an organisation's processes are not aligned with its strategies, or that the capabilities required to operate those processes are not aligned with its strategies.

In this respect, the Value chain or the McKinsey 7S model could be useful models to help assess whether an organisation's processes and systems are aligned with the strategies it is pursuing.

Value chain analysis could be used to identify what an organisation's key processes are, so that the organisation can then plan ways to improve them in order to add further value.

Equally, the 7S model could also be a useful framework to help assess the capabilities which are most important in enabling an organisation to perform its processes; or to assess what capabilities it would need to improve its businesses processes.

A third concept which could also be useful here is benchmarking. **Benchmarking** could allow an organisation to measure and compare its processes or capabilities with other organisations, in order to assess the extent to which any improvements are required.

4.1.5 Facet five: stakeholder contribution

The underlying focus of the first four facets in the Prism has been on the way organisations can deliver value to their stakeholders.

However, in this facet the roles are reversed. Instead of looking at how an organisation provides its stakeholders with what they want from it, here we are looking at what an **organisation wants from its stakeholders**. Once an organisation has decided what it wants from its stakeholders, it can then also introduce ways of measuring whether or not the stakeholders are providing what it wants (or needs.)

We can illustrate this by looking at customers. Instead of simply asking 'What do our customers want from us' an organisation also needs to consider 'What do we want from our customers?'

Organisations are likely to want loyalty and profits from their customers, meaning that they should be performing customer profitability analysis, rather than, for example, simply looking at revenues or market share.

In his article in *Student Accountant*, Nick Ryan points out that many organizations have started to perform customer profitability analysis and some have found very surprising results. 'Customers whom they thought were their most valuable turned out to be loss-making when activity-based approaches to customer profitability analysis were used.'

This principle that an organisation needs to establish what it wants from its stakeholders doesn't apply solely to customers, but it also applies to other stakeholders such as **shareholders, employees, suppliers, regulators** and/or **governments.**

What **contribution** do organisations want from their shareholders? A few suggestions are:

(a) Capital to enable growth
(b) Reasonable risk-taking (and possibly the willingness to take on more risk)
(c) Long term commitment

Question

Stakeholder commitment

Think of some examples of how what organisations might want from employees, suppliers and regulators.

Answer

Employees. Their time, their skills and their motivation. Possibly also flexibility to adapt to new roles of to changes in the organisation.

Suppliers. Timely delivery, of the correct order, and to the right place.

Regulators. Efficient working relationships and the lack of excessive bureaucracy. Good understanding of the business sector and the pressures companies in it face.

Neely and Adams remark that the notion of stakeholder contribution is a vital one, because it explains why there is so much confusion around the concept of stakeholders in the literature.

They suggest that organisations need to get a clear understanding of the 'dynamic tension' that exists between what stakeholders want and need from the organisation, and what the organisation wants and needs from its stakeholders.

4.2 Strengths and weaknesses of the performance prism

The performance prism has a far wider view of stakeholders than the other models in this chapter. It includes a range of stakeholders and considers their wants and needs before setting strategies therefore this model does not derive performance measures solely from internally-derived strategy. In this respect it has a good foundation in the actual strategies that should be adopted based on the organisation's stakeholders.

However, unlike many of the other models we have looked at, it doesn't go into detail on what performance measures should be used for each perspective.

5 Activity-based management

FAST FORWARD

Activity-based management (**ABM**) includes performing activities more efficiently, eliminating the need to perform certain activities that do not add value for customers, improving the design of products and developing better relationships with customers and suppliers. The goal of ABM is to enable customer needs to be satisfied while making fewer demands on organisational resources.

Exam focus point

Note the potential links between activity-based management and Porter's Value Chain which we looked at in Chapter 3 earlier in this Study Text.

Activity-based management encourages managers to view businesses as a set of linked activities which add value for a customer. This then encourages managers to eliminate unnecessary activities (and thereby reduce costs) and improve the performance of value-adding activities and processes.

The idea of process improvement also links back to the ideas of continuous improvement and Six Sigma which we discussed in Chapter 11, and possibly, if more radical improvements are required, to Business Process Re-engineering (which we discussed in Chapter 3).

5.1 Definitions of activity-based management

Activity-based costing (ABC) was originally introduced as a method of working out the cost of producing a product. However, organisations can now also use ABC information to help manage costs, and to focus on those activities which add value.

In essence, the emphasis has switched away from using activity-based approaches for product costing to using it to **improve cost management**. The terms activity-based management (ABM) and activity-based cost management (ABCM) are used to describe the cost management applications of ABC. In effect, ABM is ABC in action.

There are a great many different definitions of activity-based management.

Here is Drury's definition (from *Management and Cost Accounting*), with BPP's emphasis.

> 'ABM views the business as a set of linked activities that ultimately add value to the customer. It focuses on managing the business on the basis of the activities that make up the organisation. ABM is based on the premise that activities consume costs. Therefore **by managing activities costs will be managed in the long term**. The **goal of ABM is to enable customer needs to be satisfied while making fewer demands on organisation resources**. The measurement of activities is a key role of the management accounting function. In particular, activity cost information is useful for prioritising those activities that need to be studied closely so that they can be eliminated or improved.
>
> In recent years ABM information has been used for a variety of business applications. They include cost reduction, activity-based budgeting, performance measurement, benchmarking and business process re-engineering.'

Horngren, Foster and Datar in *Cost Accounting: A Managerial Emphasis* 'define it broadly to include pricing and product-mix decisions, cost reduction and process improvement decisions, and product design decisions'.

In *Managerial Accounting,* Raiborn, Barfield and Kinney include **activity analysis**, **cost driver analysis**, **continuous improvement**, **operational control and performance evaluation** as the concepts covered by activity based management. 'These concepts help companies to produce more efficiently, determine costs more accurately, and control and evaluate performance more effectively.'

Clark and Baxter (*Management Accounting,* June 1992) provide a description, which appears to include every management accounting buzzword.

> 'The aim of activity-based management (ABM) is to provide management with a method of introducing and managing 'process and organisational change.'

It focuses on activities within a process, decision-making and planning relative to those activities and the need for continuous improvement of all organisational activity. Management and staff must determine which activities are critical to success and decide how these are to be clearly defined across all functions.

Everyone must co-operate in defining:

(a) Cost pools
(b) Cost drivers
(c) Key performance indicators

They must be trained and empowered to act; all must be fairly treated and success recognised.

Clearly, ABM and employee empowerment take a critical step forward beyond ABC by recognising the contribution that people make as the key resource in any organisation's success.

(a) It nurtures good communication and team work
(b) It develops quality decision-making
(c) It leads to quality control and continuous improvement

Some accountants do not appear to understand that ABM provides an essential link to total quality management (TQM) and its concepts of 'continuous improvement'.

ABM helps deliver:

(a) Improved quality
(b) Increased customer satisfaction
(c) Lower costs
(d) Increased profitability

'It provides accountants and other technical managers with a meaningful path into the business management team.'

Perhaps the clearest and most concise definition of ABM, however, is offered by Kaplan *et al* in *Management Accounting.*

Key term

Activity based management (ABM) is '…the management processes that use the information provided by an activity-based cost analysis to improve organisational profitability. Activity-based management (ABM) includes performing activities more efficiently, eliminating the need to perform certain activities that do not add value for customers, improving the design of products, and developing better relationships with customers and suppliers. The goal of ABM is to enable customer needs to be satisfied while making fewer demands on organisational resources.'

In the following paragraphs we examine some of the aspects of ABM mentioned in the definitions above.

5.2 Cost reduction and process improvement

Traditional cost analysis analyses costs by types of expense for each responsibility centre. ABM, on the other hand, analyses costs on the basis of cross-departmental activities and therefore provides management information on why costs are incurred and on the output of the activity in terms of cost drivers. **By controlling or reducing the incidence of the cost driver, the associated cost can be controlled or reduced**.

This is fundamental to ABM. At its heart is the recognition that the activities people undertake (to produce products or deliver services) consume resources, so controlling these activities allows managers to control costs at their source.

The difference between traditional cost analysis and activity-based analysis is illustrated in the example below of the activity of processing customer orders.

Traditional analysis

	$
Salaries	5,700
Stationery	350
Travel	1,290
Telephone	980
Equipment depreciation	680
	9,000

ABC analysis

	$
Preparation of quotations	4,200
Receipt of customer orders	900
Assessment of customer creditworthiness	1,100
Expedition of orders	1,300
Resolution of customer problems	1,500
	9,000

Suppose that the analysis above showed that it cost $250 to process a customer's order. This would indicate to sales staff that it may not be worthwhile chasing orders with a low sales value. By eliminating lots of small orders and focusing on those with a larger value, demand for the activities associated with customer order processing should fall, with spending decreasing as a consequence.

5.2.1 Problems associated with cost reduction and ABM

(a) The extent to which activity based approaches can be applied is very dependent on an organisation's ability to identify its main activities and their associated cost drivers.

(b) If a system of 'conventional' responsibility centres has been carefully designed, this may already be a reflection of the key organisational activities. For example, a despatch department might be a cost centre, but despatch might also be a key activity.

(c) In some circumstances, the 'pooling' of activity based costs and the identification of a single cost driver for every cost pool may even hamper effective control if the cost driver is not completely applicable to every cost within that cost pool. For example, suppose the cost of materials handling was allocated to a cost pool for which the cost driver was the number of production runs. Logically, to control the cost of materials handling the number of production runs should be controlled. If the cost is actually driven by the weight of materials being handled, however, it can only be controlled if efforts are made to use lighter materials where possible.

5.3 Activity analysis

The activity based analysis above provides information not available from a traditional cost analysis. Why was $1,500 spent on resolving customer orders, for example. An **activity analysis** usually **surprises managers** who had not realised the amount being spent on certain activities. This leads to **questions** about the **necessity for particular activities** and, if an activity is required, whether it can be carried out more effectively and efficiently.

Such questions can be answered by classifying activities as value added or non-value added (or as core/primary, support or diversionary/discretionary).

5.3.1 Value-added and non-value-added activities

Key term

> An activity may increase the worth of a product or service to the customer; in this case the customer is willing to pay for that activity and it is considered **value-added.** Some activities, though, simply increase the time spent on a product or service but do not increase its worth to the customer; these activities are **non-value-added.** (Rayborn, Barfield and Kinney, *Managerial Accounting)*

As an example, getting luggage on the proper flight is a value-added activity for airlines, dealing with the complaints from customers whose luggage gets lost is not.

The time spent on non-value-added activities creates additional costs that are unnecessary. If such activities were eliminated, costs would decrease without affecting the market value or quality of the product or service.

The processing **time** of an organisation is made up of four types.

(a) **Production** or **performance time** is the actual time that it takes to perform the functions necessary to manufacture the product or perform the service.

(b) Performing quality control results in **inspection time.**

(c) Moving products or components from one place to another is **transfer time**.

(d) Storage time and time spent waiting at the production operation for processing are **idle time**.

Production time is value added. The other three are not. The time from receipt of an order to completion of a product or performance of a service equals production time plus non-value-added time.

JIT would of course eliminate a significant proportion of the idle time occurring from storage and wait processes but it is important to realise that **very few organisations can completely eliminate all quality control functions and all transfer time**. If managers understand the non-value-added nature of these functions, however, they should be able to **minimise** such activities as much as possible.

Sometimes non-value-added activities arise because of inadequacies in existing processes and so they cannot be eliminated unless these inadequacies are addressed.

(a) The National Health Service (NHS) is a classic example of this. Some heart patients on the NHS wait up to four months for critical heart surgery. During this time they are likely to be severely ill on a number of occasions and have to be taken to hospital where they spend the day receiving treatment that will temporarily relieve the problem. This non-value-added activity is totally unnecessary and is dependent on an inadequate process: that of providing operations when required.

(b) Customer complaints services can be viewed in the same way: eliminate the source of complaints and the need for the department greatly reduces.

(c) Setting up machinery for a new production run is a non-value-added cost. If the number of components per product can be reduced the number of different components made will reduce and therefore set-up time will also reduce.

Normally one of the **costliest** things an organisation can do is to **invest in equipment and people to make non-value-added activities more efficient**. The objective is to eliminate them altogether or subject them to a major overhaul, not make them more efficient. For example, if a supplier of raw materials makes a commitment to supply high-quality materials, inspection is no longer required, and buying testing equipment and hiring more staff to inspect incoming raw material would waste time and money.

However, there are occasions when non-value-added activities are essential to remain in business. For instance, pharmaceutical companies need to meet Food and Drug Agency regulation on quality assurance which add nothing to the product or process.

5.3.2 Core/primary, support and diversionary/discretionary activities

This is an alternative classification of activities.

Key terms

A **core activity** or **primary activity** is one that adds value to a product, for example cutting and drilling materials and assembling them.

A **secondary activity** is one that supports a core activity, but does not add value in itself. For example setting up a machine so that it drills holes of a certain size is a secondary activity.

Diversionary activities or discretionary activities do not add value and are symptoms of failure within an organisation. For instance repairing faulty production work is such an activity because the production should not have been faulty in the first place.

The aim of ABM is to try to eliminate as far as possible the diversionary activities but, as with non-value-added activities, experience has shown that it is usually impossible to eliminate them all, although the time and cost associated with them can be greatly reduced.

5.4 Design decisions

In many organisations today, roughly 80% of a product's costs are committed at the product design stage, well before production begins. By **providing product designers with cost driver information** they can be encouraged to **design low cost products that still meet customer requirements.**

The identification of appropriate cost drivers and tracing costs to products on the basis of these cost drivers has the potential to **influence behaviour to support the cost management strategies of the organisation.**

For example, suppose product costs depend on the number and type of components. A product that is designed so that it uses fewer components will be cheaper to produce. A product using standard components will also be cheaper to produce. Management can influence the action of designers through overhead absorption rates if overheads are related to products on the basis of the number of component parts they contain. Hitachi's refrigeration plant uses this method to influence the behaviour of their product designers and ultimately the cost of manufacture.

5.5 Cost driver analysis

To reflect today's more complex business environment, recognition must be given to the fact that costs are created and incurred because their cost drivers occur at different levels. Cost driver analysis investigates, quantifies and explains the relationships between cost drivers and their related costs.

Classification level	Cause of cost	Types of cost	Necessity of cost
Unit level costs	Production/acquisition of a single unit of product or delivery of single unit of service	Direct materials Direct labour	Once for each unit produced
Batch level costs	A group of things being made, handled or processed	Purchase orders Set-ups Inspection	Once for each batch produced
Product/process level costs	Development, production or acquisition of different items	Equipment maintenance Product development	Supports a product type or a process
Organisational/ facility costs		Building depreciation Organisational advertising	Supports the overall production or service process

(Adapted from Raiborn *et al)*

Traditionally it has been assumed that if costs did not vary with changes in production at the unit level, they were fixed rather than variable. The analysis above shows this assumption to be false, and that costs vary for reasons other than production volume. To determine an accurate estimate of product or service cost, **costs should be accumulated at each successively higher level of costs.**

Unit level costs are allocated over number of units produced, batch level costs over the number of units in the batch, product level costs over the number of units produced by the product line. These costs are all related to units of product (merely at different levels) and so can be gathered together at the product level to match with revenue. Organisational level costs are not product related, however, and so should simply be deducted from net revenue.

Such an approach gives a far greater insight into product profitability.

5.6 Using ABC in service and retail organisations

ABC was first introduced in manufacturing organisations, and for a long time it was only considered to be relevant to manufacturing.

However, to varying degrees, all organisations have processes and activities in place which allow them to provide the products or services required by their customers or users. Therefore ABC can be used equally well be used in other types of organisation, including service companies, public sector organisations or non-for-profit organisation.

For example, when the management of the US Post Office introduced ABC they analysed the activities associated with cash processing as follows.

Activities	Examples	Possible cost driver
Unit level	Accept cash	Number of transactions
	Processing of cash by bank	Number of transactions
Batch level	'Close out' and supervisor review of clerk	Number of 'close outs'
	Deposits	Number of deposits
	Review and transfer of funds	Number of accounts
Product level	Maintenance charges for bank accounts	Number of accounts
	Reconciling bank accounts	Number of accounts

Retail organisations are considered in more detail in the context of direct product profitability later in this text, but they too **can use ABC**.

Question

ABC and retail organisations

Complete the following table to show activities and drivers that might be used in a retail organisation.

Activities	Possible cost driver

Answer

Activities	Possible cost driver
Procure goods	Number of orders
Receive goods	Number of orders or pallets
Store goods	Volume of goods
Pick goods	Number of packs
Handle returnables/recyclables	Volume of goods

5.7 Continuous improvement

Continuous improvement **recognises the concept of eliminating non-value-added activities** to reduce lead time, make products or perform services with zero defects, reduce product costs on an ongoing basis and simplify products and processes. It focuses on including employees in the process as they are often the best source of ideas.

5.8 Operational control

'**To control costs, managers must understand where costs are being incurred and for what purpose**. Some of this understanding will come from differentiating between value-added and non-value-added activities. Some will come from the better information generated by more appropriate tracing of overhead costs to products and services. Some will come from viewing fixed costs as long-term variable overheads and recognising that certain activities will cause those costs to

change. Understanding costs allows manager to visualise what needs to be done to controls those costs, to implement cost reduction activities, and to plan resource utilisation.

……By better understanding the underlying cost of making a product or performing a service, managers obtain **new insight into product or service profitability**. Such insight could **result in management decisions** about expanding or contracting product variety, raising or reducing prices, and entering or leaving a market. For example, managers may decide to raise selling prices or discontinue production of low-volume speciality output, since that output consumes more resources than does high-volume output. Managers may decide to discontinue manufacturing products that require complex operations. Or, managers may reap the benefits from low-volume or complex production through implementing high-technology processes.'

(Raiborn *et al*, with BPP emphasis)

Innes and Mitchell ('*Activity Based Costing')* report that, in some organisations,

'ABCM has also been used in **make-or-buy decisions** and has led to the sub-contracting of certain activities. In another engineering company the ABCM information on purchasing **concentrated** managers' **attention** on problems such as **late deliveries, short deliveries and poor-quality raw materials**. This information enabled this engineering company to identify twenty problem suppliers and take the necessary corrective action, which varied from changing suppliers to working with others to overcome the existing problems.'

5.9 Performance evaluation

ABM encourages and rewards employees for developing new skills, accepting greater responsibilities, and making suggestions for improvements in plant layout, product design, and staff utilisation. Each of these improvements reduces non-value-added time and cost. In addition, by focusing on activities and costs, ABM is better able to provide more appropriate measures of performance than are found in more traditional systems.

To monitor the effectiveness and efficiency of activities, performance measures relating to volume, time, quality and costs are needed.

(a) Activity **volume** measures provide an indication of the throughput and capacity utilisation of activities. For example reporting the number of times an activity such as setting-up is undertaken focuses attention on the need to investigate ways of reducing the volume of the activity and hence future costs.

(b) To increase customer satisfaction, organisations must provide a speedy response to customer requests and reduce the time taken to develop and bring a new product to the market. Organisations must therefore focus on the **time** taken to complete an activity or sequence of activities. This time can be reduced by eliminating (as far as is possible) the time spent on non-value-added activities.

(c) A focus on value chain analysis is a means of enhancing customer satisfaction. The value chain is the linked set of activities from basic raw material acquisition all the way through to the end-use product or service delivered to the customer. By viewing each of the activities in the value chain as a supplier-customer relationship, the opinions of the customers can be used to provide useful feedback on the **quality** of the service provided by the supplying activity. For example the quality of the service provided by the processing of purchase orders activity can be evaluated by users of the activity in terms of the speed of processing orders and the quality of the service provided by the supplier chosen by the purchasing activity. Such qualitative evaluations can be supported by quantitative measures such as percentage of deliveries that are late.

(d) **Cost** driver rates (such as cost per set-up) can be communicated in a format that is easily understood by all staff and can be used to motivate managers to reduce the cost of performing activities (given that cost driver rate $\times$ activity level = cost of activity). Their use as a measure of performance can induce dysfunctional behaviour, however. By splitting production runs and therefore having more set-ups, the cost per set-up can be reduced. Workload will be increased, however, and so in the long run costs could increase.

5.10 Strengths and weaknesses of ABM

Activity-based management focuses on managing the activities in the organisation that ultimately bring **value to the customer**. In this respect, ABM can focus management attention on key value-added activities, to help an organisation maintain or increase its competitive advantage. ABM also highlights the need for businesses to be focused on quality and continuous improvement.

To the extent that ABM highlights the importance of analysing the way activities add value for the customer, it has a degree of overlap with some of the other models we have looked at in this chapter (for example, the balanced scorecard and the performance pyramid, which also highlight the importance of creating value for the customer).

More specifically, ABM could be useful to organisations in helping to:

(a) Design products and services that meet or exceed customers' expectations and can be produced and delivered at a profit

(b) Identify where improvements (either continuous, or one-off transformations) are required in quality, efficiency and speed

(c) Negotiate with customers about prices, product features, quality, delivery and service.

However, ABM should not be seen as a panacea.

(a) **ABM will not, by itself, reduce costs**. It can help organisations understand their costs better in order to know what activities they have to address to reduce costs. However, the necessary actions still have to be taken to improve or re-design these activities in order to reduce the costs.

(b) Also, the **amount of work** required to set up the ABC system and in data collection must be considered, to assess whether the cost of setting up the system outweighs the benefits of having it.

(c) **Organisational and behavioural consequences**. Selected activity cost pools may not correspond to the formal structure of cost responsibilities within the organisation (the purchasing activity may spread across purchasing, production, stores, administrative and finance departments) and so determining 'ownership' of the activity and its costs may be problematic. We have already mentioned the behavioural impact of some performance measures.

Moreover, it is important not to forget the point (which is a weakness of activity based costing in general) that it can sometimes be difficult to find out what costs apply to a particular activity. Some areas of activity overlap and may be difficult to separate.

Exam focus point

An exam question on Activity-based management could be written, or require calculations, or be a mixture of both.

Exam questions may also test your knowledge of Activity-based costing (which is assumed knowledge brought forward from F5.)

The December 2010 exam required candidates to evaluate an absorption costing system compared to an ABC system, and then comment on any action that management should take in relation to product pricing. This question combined calculations and a written report, because candidates had to perform an ABC calculation on the figures given in the scenario, and then use their findings from the calculation to identify what action management should take.

6 Value-based management

FAST FORWARD

VBM aligns an organisation's overall aspirations, analytical techniques, and management processes with the **key drivers of value**. So, VBM takes the idea of creating value through return on future cash flow and embeds this in the organisational culture in its strategy, as well as making this a performance measure to be used throughout the organisation.

The explanation of value-based management in this section is based on an article in the McKinsey quarterly 1994, adapted from a book, *Valuation: Measuring and Managing the Value of Companies,* by Tom Copeland, Tim Koller and Jack Murrin.

(Note that ROIC is equivalent to ROCE in the UK.)

6.1 What is value-based management?

Value-based management (VBM) starts with the philosophy that the **value of a company** is measured by **its discounted future cash flows**. Value is created only when companies invest capital at returns that exceed the cost of that capital.

VBM **extends this philosophy** by focusing on how companies use the idea of value creation to make both major strategic and everyday operating decisions. So VBM is an approach to management that **aligns the strategic**, **operational** and **management processes** to focus management decision making on what activities **create value for the shareholder**.

6.2 Principles

VBM focuses on better decision making at all levels in an organisation. Hierarchical command-and-control structures cannot work well, especially in large multi-divisional organisations. Managers need to use **value-based performance measures** for making better decisions. This means that they must manage the statement of financial position (balance sheet) as well as the income statement, and maintain a balance between long- and short-term perspectives. This approach to performance measurement is known as the **value mindset**.

6.2.1 The Value mind set

VBM requires companies to move on from only using traditional financial performance measures, such as earnings or earnings growth as these do not focus enough on value creation. Companies should set also **goals** in terms of **discounted cash flow value**, the most direct measure of value creation. These targets can then be cascaded down the organisation as shorter-term, more objective financial performance targets.

However, non-financial goals such as customer satisfaction, product innovation, and employee satisfaction are also important as these inspire and guide the entire organisation.

The most prosperous companies are usually the ones that combine their financial and non-financial goals to have a balanced approach to performance review and measurement.

Key term

A **value mindset** means that senior managers are fully aware that their ultimate financial objective is maximising value. They have clear rules for deciding when other objectives (such as employment or environmental goals) outweigh this objective; and that they have a solid analytical understanding of which performance variables drive the value of the company.

Planning, target setting, performance measurement, and incentive systems need to be linked to value creation at the different levels of the organisation. Management processes and systems encourage managers and employees to behave in a way that maximises the value of the organisation.

(a) **For the head of a business unit**, the objective may be stated as value creation measured in financial terms.

(b) **A functional manager's goals** could be expressed in terms of customer service.

(c) A **manufacturing manager** might focus on operational measures such as cost per unit, cycle time, or defect rate.

The focus of VBM should be on the **why** and **how** of **changing the organisation's corporate culture**. A value-based manager balances an awareness of organisational behaviour with using valuation as a performance metric and decision-making tool.

Case Study

How VBM works in practice

'When VBM is working well, an organisation's management processes provide decision makers at all levels with the right information and incentives to make value-creating decisions.

Take the **manager of a business unit**. VBM would provide him or her with the information to quantify and compare the value of alternative strategies and the incentive to choose the value-maximising strategy. Such an incentive is created by specific financial targets set by senior management, by evaluation and compensation systems that reinforce value creation, and – most importantly – by the strategy review process between manager and superiors. In addition, the manager's own evaluation would be based on long- and short-term targets that measure progress toward the overall value creation objective.

Line managers and supervisors can have targets and performance measures that are tailored to their particular circumstances but driven by the overall strategy.

A **production manager** might work to targets for cost per unit, quality, and turnaround time. At the top of the organisation, on the other hand, VBM informs the board of directors and corporate centre about the value of their strategies and helps them to evaluate mergers, acquisitions, and divestitures. Value-based management can best be understood as a marriage between a value creation mindset and the management processes and systems that are necessary to translate that mindset into action. Taken alone, either element is insufficient. Taken together, they can have a huge and sustained impact.'

6.2.2 Value drivers

VBM requires that management understand the performance variables that create the value of the business that is the key **value drivers**. Management cannot act directly on value, but can respond to things it *can* influence such as customer satisfaction, cost, and capital expenditure.

Key term

A **value driver** is any variable that affects the value of the company.

Value drivers need to be ranked in terms of their **impact on value** and **responsibility assigned** to individuals who can help the organisation meet its targets.

Value drivers must be matched to the appropriate level of management so that they are consistent with the decision variables that are directly under the control of line management.

Value drivers are useful at three levels in the organisation.

(a) **Generic**, where operating margins and invested capital are combined to compute ROIC;

(b) **Business unit**, where variables such as customer mix are particularly relevant;

(c) **Grass roots**, where value drivers are precisely defined and tied to specific decisions that front-line managers have under their control.

So value drivers are usually cascaded in 'trees' down the organisation so that each layer of management has clear targets relevant to areas under their control.

These 'trees' are then usually linked into ROIC trees, which are in turn linked into multi-period cash flows and valuation of the business unit.

It can be difficult to **identify key value drivers** because it requires an organisation to think about its processes in a different way and existing reporting systems are often not equipped to supply the necessary information. Mechanical approaches based on available information and purely financial measures rarely succeed. What is needed instead is a creative process involving much trial and error. Nor can value drivers be considered in isolation from each other. The article suggests that a good way of relating a range of value drivers is to use **scenario analysis**. It is a way of assessing the impact of different sets of mutually consistent assumptions on the value of a company or its business units.

6.2.3 Management processes

VBM also requires that managers must establish **processes** that ensure all line managers **adopt value-based thinking** as an improved way of making decisions. VBM must eventually involve every decision maker in the company.

The article notes that there are **four essential management processes** that collectively govern the adoption of VBM. These four processes are linked across the company at the **corporate, business-unit, and functional levels**. The four processes which run in order are expressed below as steps:

Step 1 A company or business unit **develops a strategy** to maximise value.

Step 2 This strategy translates into short- and long-term **performance targets** defined in terms of the key value drivers.

Step 3 **Action plans and budgets** are drawn up to define the steps that will be taken over the next year or so to achieve these targets.

Step 4 Finally **performance measurement and incentive systems** are set up to monitor performance against targets and to encourage employees to meet their goals.

(a) **Strategy development**

Corporate level. Under VBM, senior management devises a corporate strategy that explicitly maximises the overall value of the company, including buying and selling business units as appropriate. This should be built on a thorough understanding of business-unit strategies.

Business-unit level. Alternative strategies, should be weighed up and the one chosen with the highest value. The chosen strategy should spell out how the business unit will achieve a competitive advantage that will permit it to create value. The VBM elements of the strategy then apply. They include:

(i) **Assessing the results of the valuation** and the key assumptions driving the value of the strategy.

(ii) Assessing the value of the alternative strategies that were discarded, along with the reasons for rejecting them.

(iii) **Looking at resource requirements**. Business-unit managers need to focus on the statement of financial position (balance sheet) and also consider human resource requirements.

(iv) **Summarising the strategic plan projections**, by focusing on the key value drivers. These should be supplemented by an analysis of the return on invested capital over time and relative to competitors.

(v) **Analysing alternative scenarios** to assess the effect of competitive threats or opportunities.

(b) **Target setting**

The next step after strategies for maximising value are agreed, is to translate these into specific targets. In applying VBM to target setting, several general principles are helpful:

(i) **Base targets on key value drivers**. This should cover both financial and non-financial targets. The latter serve to prevent manipulation of short-term financial targets.

(ii) **Tailor the targets to the different levels within an organisation**. So that senior business-unit managers should have targets for overall financial performance and unit-wide non-financial objectives. Functional managers need functional targets, such as cost per unit and quality.

(iii) **Link short-term targets to long-term ones**. The article gives the example of setting linked performance targets for ten years, three years, and one year. The ten-year targets express a company's aspirations; the three-year targets define how much progress it has to make within that time in order to meet its ten-year aspirations; and the one-year target is a working budget for managers.

The article notes that 'Ideally, targets should be expressed in terms of value, but since value is always based on long-term future cash flows and depends on an assessment of the future, short-term targets need a more immediate measure derived from actual performance over a single year.

Economic profit is a short-term financial performance measure that is tightly linked to value creation. It is defined as: *Economic profit = Invested capital x (Return on invested capital – Weighted average cost of capital)*

Economic profit measures the gap between what a company earns during a period and the minimum it must earn to satisfy its investors. Maximising economic profit over time will also maximize company value.'

(c) **Action plans and budgets**

Then, management must translate strategy into the specific steps an organisation will take to achieve its targets, particularly in the short term through action plans. The plans must identify the actions that the organisation will take so that it can pursue its goals in a methodical manner.

(d) **Performance measurement**

Finally performance measurement and incentive systems will track progress in achieving targets and motivate managers and other employees to achieve them. VBM may force a company to modify its traditional approach to these systems by linking performance measures to long-term value creation and strategy. In particular, it shifts performance measurement from being **accounting driven** to being **management driven**. Key principles include:

(i) **Tailor performance measurement to the business unit**. Each business unit should have its own performance measures which it can influence.

(ii) **Link performance measurement to a unit's short- and long-term targets**. Performance measurement systems are often based almost exclusively on accounting results. By contrast, VBM systems focus on the creation of shareholder wealth.

(iii) **Combine financial and operating performance in the measurement**. Financial performance is often reported separately from operating performance, whereas an integrated report would better serve managers' needs.

(iv) **Identify performance measures that serve as early warning indicators**. Early warning indicators might be simple non-financial indicators such as market share or sales trends. Once performance measurements are an established part of corporate culture and managers are familiar with them, it is time to revise the compensation system.

In addition to these key principles, the following aspects are also relevant to performance measurement (and management) under a VBM system:

(i) **Management remuneration** – rewards should be linked to the key value drivers, and how well these targets are achieved

(ii) **Internal communication** – the background to the programme, and how VBM will benefit the business, need to be explained to staff

(iii) **External communication** – management decisions, and how they are designed to achieve value, must be communicated to the market. The market's reaction to these decisions will help determine movements in the organisation's share price (and hence the value of the company).

6.3 The pitfalls of VBM

Case Study

Value-based management is not without some problems however as the article illustrates.

'A few years ago, the chief planning officer of a large company gave us a preview of a presentation intended for his chief financial officer and board of directors. For about two hours we listened to details of how each business unit had been valued, complete with cash flow forecasts, cost of capital, separate capital structures, and the assumptions underlying the calculations of continuing value.

When the time came for us to comment, we had to give the team A+ for their valuation skills. Their methodology was impeccable. But they deserved an F for management content. None of the company's significant strategic or operating issues were on the table. The team had not even talked to any of the operating managers at the group or business-unit level. Scarcely relevant to the real decision makers, their presentation was a staff-captured exercise that would have no real impact on how the company was run. Instead of value-based management, this company simply had value veneering.'

6.4 Evaluation of value-based management

Identifies value not profit

Value based management highlights that management decisions designed to lead to higher profits do not necessarily **create value for shareholders**. Often, management are under pressure to meet short term profit targets, and they are prepared to sacrifice long term value in order to achieve these short term targets. For example, management might avoid initiating a project with a positive net present value if that project leads to their organisation falling short of expected profit targets in the current period.

Profit-based performance measures may therefore obscure the true state of a business. By contrast, value based management seeks to ensure that analytical techniques and management processes are all aligned to help an organisation **maximise its value**. VBM does this by focusing management decision-making on the key drivers of value, and making management more accountable for growing an organisation's intrinsic value.

(Note, the focus on shareholder value and the focus on future cash flows suggests that the VBM would be very unlikely to be used in not-for-profit organisations where value creation is not measured by future cash flow.)

Forward looking

Therefore, whereas profit-based performance measures look at what has happened in the past, VBM seeks to maximise **returns on new investments**. What matters to the shareholders of a company is that they earn an acceptable return on their capital. They are not only interested in how a company has performed in the past, but also how it is likely to perform in the future.

Need for good information

Although it is easy to identify the logic that companies ought to be managed for shareholder value, it is much harder to specify how this can be achieved. For example, a strategy to increase market share may not actually increase shareholder value.

Good quality information is essential in a VBM system, so that management can identify where value is being created – or destroyed – in a business. For example, continuing the previous example, there is no value in increasing market share in a market if that market is not profitable. (Consequently, if an organisation currently has poor management information systems it is unlikely to be able to implement a VBM system effectively. One particular problem could be **identifying value drivers** as an organisation's reporting systems may not be set up to be able to identify these.)

An organisation will need to identify its value drivers, and then put strategies in place for each of them. When identifying its value drivers, an organisation may also find that its organisational structure needs

reorganising, to ensure that it is aligned with the processes which create value. (However, note that any such re-organisation could be expensive and time-consuming to implement in the short term.)

Need to redefine performance metrics

VBM will lead to a change in the performance metrics used in a company. Instead of focusing solely on historical returns, companies also need to look at more forward-looking contributions to value: for example, growth and sustainability. The performance measures used in VBM are often non-financial.

Aligning agents and principles

In many companies today, the intellectual capital provided by employees plays a key role in generating value. VBM attempts to align the interests of the employees who generate value and the shareholders they create value for.

If it didn't do this, VBM could drive a wedge between those who deliver economic performance (employees) and those who harvest its benefits (shareholders). In practice, this solution to this problem is by introducing remuneration structures which include some form of share-based payments.

Cultural change

However, to successfully implement VBM may also involve cultural change in an organisation. The employees in the organisation will need to commit to creating shareholder value. Value is created throughout the company, not just by senior management, so all the employees need to appreciate how their roles add value.

Nonetheless, visible leadership and strong commitment from senior management will be essential for a shift to VBM to be successful.

However, as with any change programme, implementing VBM could be expensive and potentially disruptive, particularly if extensive restructuring is required.

Chapter Roundup

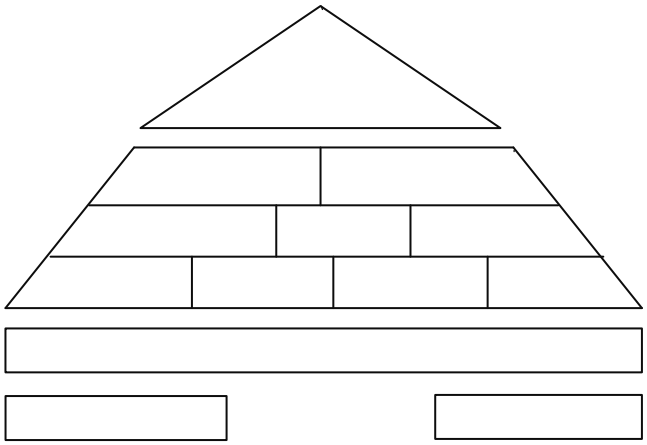
- The **balanced scorecard** approach to performance measurement focuses on four different perspectives and uses financial and non-financial indicators.
- The **performance pyramid** highlights the links running between an organisation's vision and its functional objectives.
- Fitzgerald and Moon's **building blocks** for **dimensions, standards** and **rewards** attempt to overcome the problems associated with performance measurement of **service businesses**.
- **The Performance Prism** takes five facets affecting business performance and combines these to make a multi-faceted framework to appraise performance.
- **Activity based management** (**ABM**) includes performing activities more efficiently, eliminating the need to perform certain activities that do not add value for customers, improving the design of products and developing better relationships with customers and suppliers. The goal of ABM is to enable customer needs to be satisfied while making fewer demands on organisational resources.
- VBM aligns an organisation's overall aspirations, analytical techniques, and management processes with the **key drivers of value**. So, VBM takes the idea of creating value through return on future cash flow and embeds this in the organisational culture in its strategy, as well as making this a performance measure to be used throughout the organisation.

Quick Quiz

1 Which of the following are the four perspectives of the balanced scorecard?

A Innovation and learning, customer, financial, competitive
B Financial, quality, innovation, internal
C Financial, customer, Internal business, innovation and learning
D Customer, quality, competitive, flexibility

2 *Label the performance pyramid below.*



3 Which of the following statements about performance measurement frameworks (such as the balanced scorecard, the performance pyramid etc) are true?

(i) Performance measures should be linked to corporate strategy

(ii) Performance measures should only focus on non-financial performance

(iii) Performance measures should include important but difficult to measure factors and not just easily measurable ones

A (i) and (ii)
B (i) and (iii)
C (ii) and (iii)
D All of them

4 Fitzgerald and Moon's standards for performance measurement systems are ownership, achievability and controllability. *True or false?*

5 What are the facets of the Performance Prism?

6 Complete the table below for the four levels of classification of cost driver under an ABC/ABM analysis of costs.

Classification level	Cause of cost	Types of cost	Necessity of cost

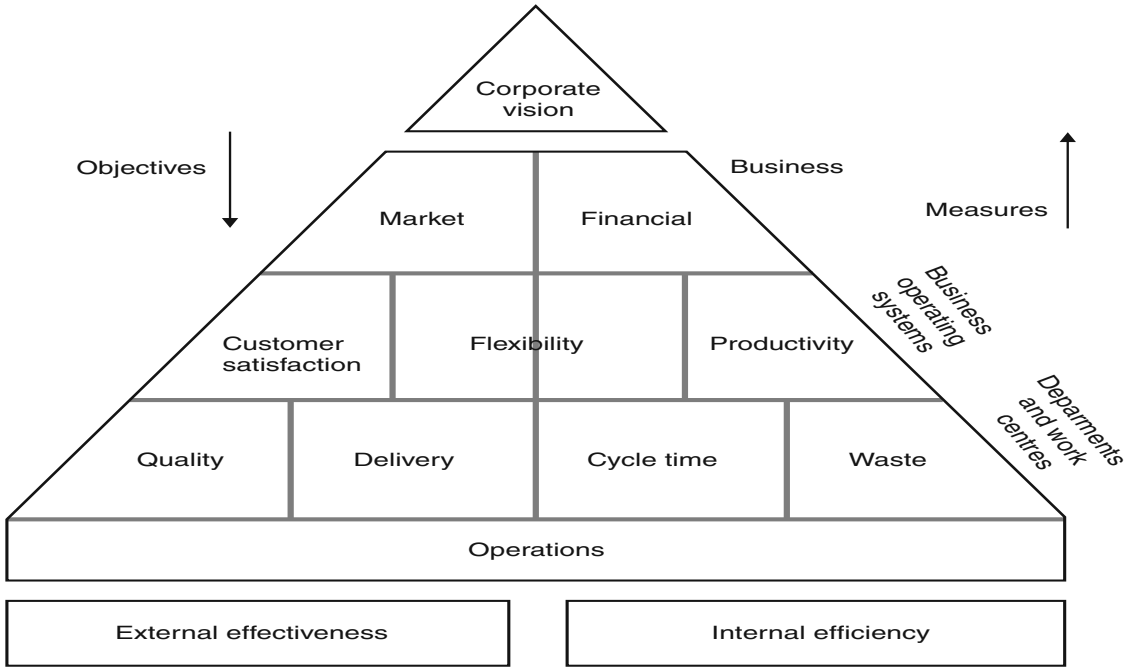
7 Activity Based Management is only appropriate for manufacturing organisations. *True or false?*

Answers to Quick Quiz

1 C.

The four perspectives of the balanced scorecard are: Financial, customer, internal business, and innovation and learning.

2



3 B

Option (ii) is incorrect. Performance measures should include non-financial *and* financial measures.

4 False. They are ownership, achievability and equity.

5 There are five facets to the Performance Prism. These are **stakeholder satisfaction**, **strategies**, **processes, capabilities** and **stakeholder contribution**.

6

Classification level	Cause of cost	Types of cost	Necessity of cost
Unit level costs	Production/acquisition of a single unit of product or delivery of single unit of service	Direct materials Direct labour	Once for each unit produced
Batch level costs	A group of things being made, handled or processed	Purchase orders Set-ups Inspection	Once for each batch produced
Product/process level costs	Development, production or acquisition of different items	Equipment maintenance Product development	Supports a product type or a process
Organisational/ facility costs		Building depreciation Organisational advertising	Supports the overall production or service process

7 False. ABM can be applied to service industries, public sector organisations and not-for-profit organisations as well as manufacturing organisations, because they all use processes and activities to provide value for their customers.

Now try the question below from the Question Bank

Number	Level	Marks	Time
Q16	Examination	20	36 mins

Common areas:

- sales revenue and profitability
- products and services
- pricing structures, fees and overheads
- KPIs
- quality control processes
- customers
- staff turnover.

Types of benchmarking

- **Internal** — Comparing one operating unit or function with another in the same industry.
- **Industry** — Comparing with average or industry best practice.

Advantages

- ☑ Provides basis for establishing targets of performance
- ☑ Sets targets that are achievable
- ☑ Can be a spur to innovation
- ☑ Undertakes processes better
- ☑ Avoids others' mistakes
- ☑ Instills culture of continuous improvement

Disadvantages

- ☒ Implies one best way of doing things
- ☒ Yesterday's solution for tomorrow's problem
- ☒ Catching-up exercise
- ☒ Depends on accurate information about comparator companies – can be difficult
- ☒ Requires internal/external participation
- ☒ Difficult to determine reasons for differences
- ☒ Comparing apples and pears?

Benchmarking

The establishment, through data gathering, of targets and comparators through whose use relative levels of performance (and particularly areas of underperformance) can be measured. By the adoption of identified best practices, it is hoped that performance will improve.

Control cycle with benchmarking

1. Decide what to benchmark
2. Identify benchmarking partners and sources
3. Study the processes in your own organisation and gather information
4. Obtain benchmarking data
5. Analyse the information and understand it relative to the benchmark
6. Learn and implement changes where necessary

A process that can and needs to be changed or a measure that needs to be achieved.

Data can be obtained via third party organisations or secondary sources.

Performance measures should be used to improve performance	
Targets	Target set for each performance measure. But how easy is the target to achieve? Consider the costs of having higher performance targets with the incremental benefits. Need to balance different targets (often in conflict)
Trends	Monitoring performance over a period of time
Benchmarks	Compare performance against a benchmark

Organisational learning and knowledge management

- Continuous improvement.
- Increase competitive advantage.
- Organisational success.
- Organisational learning processes:
  - Of knowledge at individual levels
  - Within organisation.
- Knowledge management:
  - Of knowledge at the organisation level
  - By the organisation at a risk level.

Dysfunctional consequences of performance measures	
Tunnel vision	Focus on the measure to the exclusion of all else
Sub-optimal behaviour	Not doing more than needed to meet the target
Substitution	Not putting effort into activities that are not measured
Fixation on measure	Focusing on the measure itself, not the underlying performance it is intended to measure
Gaming and bias	Making performance seem better than it is
Smoothing reported performance	Removing fluctuations between reporting periods

Performance measurement systems can have unintended and adverse consequences for management behaviour.

Three approaches to measuring performance.

The balanced scorecard (BSC) looks at both internal and external aspects of the organisation. Explicitly links financial and non-financial measures.

It presents a hierarchy: good financial results, caused by happy customers, caused by the organisation doing well what it sets out to do, which constantly improves.

Scorecard emphasises processes rather than departments; supports a competence-based approach to strategy.

Measures need to be mutually consistent and reinforcing. Scorecard must be seen as a whole.

Customer perspective

'How should we appear to customers?' This perspective concentrates on customers' concern with time, quality, performance and service. Example measures would be percentage of on-time deliveries and customer rejection rates.

Business process perspective

'What must we excel at?' This perspective focuses on what the company must be internally to meet its customers' expectations. Control measures will focus on core competences, skills, productivity and cost.

Innovation and learning

'Can we continue to improve and create value?' This perspective is forward looking and concentrates on what the company must do to satisfy future needs. Performance measures include time-to-market for new products and percentage of revenue from them.

Financial perspective

'How do we create value for shareholders?' This is the traditional reporting perspective, but must not be overlooked. Market share and sales growth are included here. Modern measures like value-added and shareholder value analysis should be included.

Possible indicators for balanced scorecard categories:

Customer perspective

- Market share.
- Number of new customers attracted.
- Number of recommendations or referrals.
- Customer satisfaction ratings.
- Customer retention rates.
- Levels of refunds/returns.
- % of deliveries on time.

Business process perspective

- Reduced inventory levels.
- Reduced lead times.
- Delivery dates of new products in line with plan.
- Minimise wastage/errors.
- Reliability and usability (of websites).
- Security of transactions and credit card handling.

Innovation and learning

- New products/processes developed.
- Time to market for new products.
- % of sales from new products.
- Number of new products developed (vs competitors).
- Ideas from employees.
- Reward and recognition structure for staff.

Financial perspective

- Revenue or operating profit.
- Asset utilisation.
- Market share.
- ROI; EVA.
- Cashflow.

Strategic perspective

The other 4 perspectives are articulated to meet the strategic needs of the business, which may be explicitly stated in a 5th category 'strategic perspective'

Also called Learning and Growth perspective.

Any measures must be specifically relevant to the organisation.

Broader template for control.

Strategy mapping and performance measurement

Strategy map (Kaplan and Norton 2001)

Map of cause: effect relationships

Map of how aspects of performance affect higher levels of performance

Example:

Objective of financial return depends partly on higher market share.

Higher market share depends partly on quality/meeting customer needs and higher revenue per customer.

For each aspect of performance:
- Decide performance measure.
- Set target.
- Allocate budget for achievement.

Monitor. If performance needs to be improved, identify aspect of performance that is the cause and **re-allocate budgets** mid-year.

Differs from traditional approach of fixed annual budgets.

Benefits of balanced scorecard

- Complex information summarised.
- Focus management on most important issues.
- Enables management of under-performance.
- Balances short-term v sustainable performance.
- Limits number of performance measures.

Mapping helps manage balance scorecard KPIs by establishing which ones drive others.

Mapping prioritises scorecard elements and provides focus for management.

Aim of scorecard is to translate mission and strategy into objectives and measures (using the four perspectives).

Note. Kaplan & Norton never intended scorecard to be the only performance measurement system an organisation should use.

Designing a balanced scorecard

1. Consider stakeholders.
2. Express organisation's vision, mission and strategy in a way that has clear operational meaning for each employee.
3. Link mission to departmental or individual objectives (not confined to short-term financial goals).
4. Use scorecard to prioritise objectives and allocate resources to make best progress towards strategic goals.
5. Use feedback on performance to promote progress against the four perspectives.
6. Measures can be **leading** (learning and growth/material process) or **lagging** (customer, financial).
7. Usually has a long-term (3-5 yr) timescale and detailed short-term one (1 yr).
8. Need a balance of:
   - Financial/non-financial measures.
   - Leading/lagging measures.
   - Quantitative and possibly qualitative measures.

Public/not-for-profit sector scorecards

- Multiple stakeholders.
- Multiple objectives.

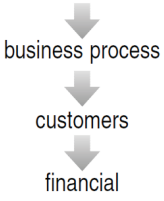
Words of warning

Possible problems when applying the scorecard:

- Some measures may conflict – how do you determine the balance which achieves the best results?
- Have to select measures which add value, not just those that are easy to measure.
- Measures have to be developed by someone who understands the business processes involved.
- Will management be able to interpret the figures, or will they just be swamped in a mass of figures? To be useful, measurement needs to initiate action to improve performance.
- There will be a cost involved in measuring the performance of additional processes to those that are currently measured.
- Too much data is available

Levels of balanced scorecard

1. Cascade down from vision, mission, objective at top level to all lower levels. Logical linking.
2. Cascade from innovation and learning



Is there a danger that the measures chosen could be arbitrary?

Enact improvement programs.

In practice, do you need more than four perspectives? E.g. scorecard doesn't look at CSR or staff morale (though these perspectives can be added in).

Focus not just on price, because customers will pay for differentiation.

KPIs depend on choice of strategy

Strategy/Porter's generic strategy	Performance measures
Cost leadership	■ Cost efficiency measures: ■ Controlling costs, reducing costs, improving efficiency. ■ Eliminate unprofitable activities.
Differentiation	■ Quality, uniqueness of product or service. ■ Customer demand / interest. ■ Also cost control measures.
Focus	Serving a particular market segment better than competitors
Adding value in the value chain	■ Keep costs of adding value below the extra price that customers will pay for the value benefit. ■ Unique distribution channels

Performance management systems framework 8 elements (Ferreira and Otley, 2009)

1. Vision and mission.
2. Key success factors.
3. Organisation structure.
4. Strategies and plans.
5. Key performance measures.
6. Target setting.
7. Performance evaluation.
8. Reward systems.

All eight elements are needed for an effective system of performance measurement.

CGMA TOOL

How to Develop Non-Financial KPIs

CGMA
Chartered Global Management Accountant

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CONTENTS

Two of the world's most prestigious accounting bodies, the AICPA and CIMA, have formed a joint venture to establish the Chartered Global Management Accountant (CGMA) designation to elevate the profession of management accounting. The designation recognises the most talented and committed management accountants with the discipline and skill to drive strong business performance.

INTRODUCTION

In today's knowledge economy, company value is no longer driven primarily by physical or tangible assets, but is increasingly attributable to non-financial business drivers — the intangible assets of an enterprise. Success and future value creation depend on the effective measurement and management of these critical non-financial or intangible resources that comprise the intellectual capital of the business. This includes the knowledge, skills, brands, corporate reputation, relationships, information and data, as well as patents, processes, trust or an innovative organisational culture.

Research underlying the CGMA report *Rebooting Business: Valuing the Human Dimension*[1] showed that 75% of respondents agreed that they need to put more emphasis on measuring and demonstrating the non-financial value of their business. This tool provides guidance for identifying and designing Key Performance Indicators (KPIs) for non-financial performance measures, also referred to as the intangible resources, or intellectual capital of an organisation.

DEFINING INTELLECTUAL CAPITAL

Intellectual capital includes all non-tangible resources that (a) are attributed to an organisation, and (b) contribute to the delivery of the organisation's value proposition. Intangible resources can be split into three components: human capital, structural capital and relational capital.

- **Human capital** includes the skill sets of an organisation's workforce, the depth of expertise and breadth of experience.
- **Relational capital** includes all the relationships that exist between an organisation and any outside person or organisation. These can include customers, intermediaries, employees, suppliers, alliance partners, regulators, pressure groups, communities, creditors and investors.
- **Structural capital** covers a broad range of vital elements. Foremost among these are usually (a) the organisation's essential operating processes; (b) how it is structured; (c) its policies, information flows and content of its databases; (d) its leadership and management style; (e) its culture; and (f) its incentive schemes. Structural capital also can include legally protected intangible resources.

IDENTIFYING VALUE DRIVERS

The first step in developing non-financial performance measures involves understanding the organisation's value drivers. The relative importance or strategic value of intellectual capital can only be assessed in the context of the existing organisation. Intellectual capital interacts with other resources to create a core competency, which in turn helps to deliver the value proposition. To understand the role and strategic importance of intellectual capital in any organisation requires a clear understanding of strategic direction and objectives. The questions to ask are:

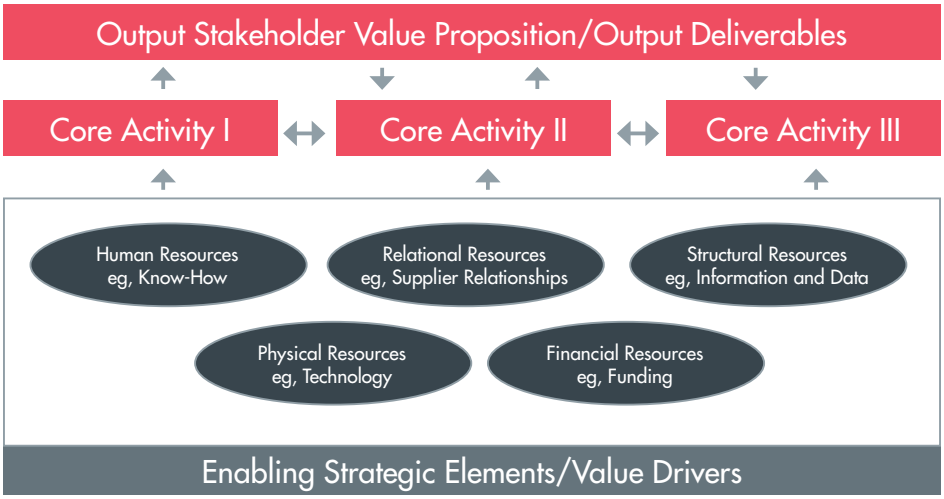
1. How important are our different intellectual capital resources to achieving our overall value proposition?
2. How strong are our existing resources and how can we utilise them more effectively?

A value creation map is a visual representation of the organisational strategy. A value creation map brings together the three key elements of an organisational strategy, namely, its value proposition, its core activities and its enabling strategic elements or performance drivers:

- The *value proposition* (or output deliverables) identifies an organisation's purpose and its roles and deliverables. It also identifies the key output stakeholders of the organisation and the value delivered to them.
- The *core activities* are the vital few things at which an organisation has to excel to deliver its value proposition. They essentially define (a) what an organisation should focus on and (b) what differentiates it from others. Core activities are directly linked to the organisational core competencies.
- The *enabling strategic elements* (or value drivers) are the other strategic elements or objectives an organisation requires to perform its core activities and to deliver its value proposition. These enabling elements or value drivers derive from the assessment of the organisation's resource architecture and intellectual capital.

The basic template of a value creation map is shown in Figure 1.

Figure 1: Value Creation Map Template



Source: Marr, B. (2008). Managing and delivering performance, Elsevier Ltd., Oxford.

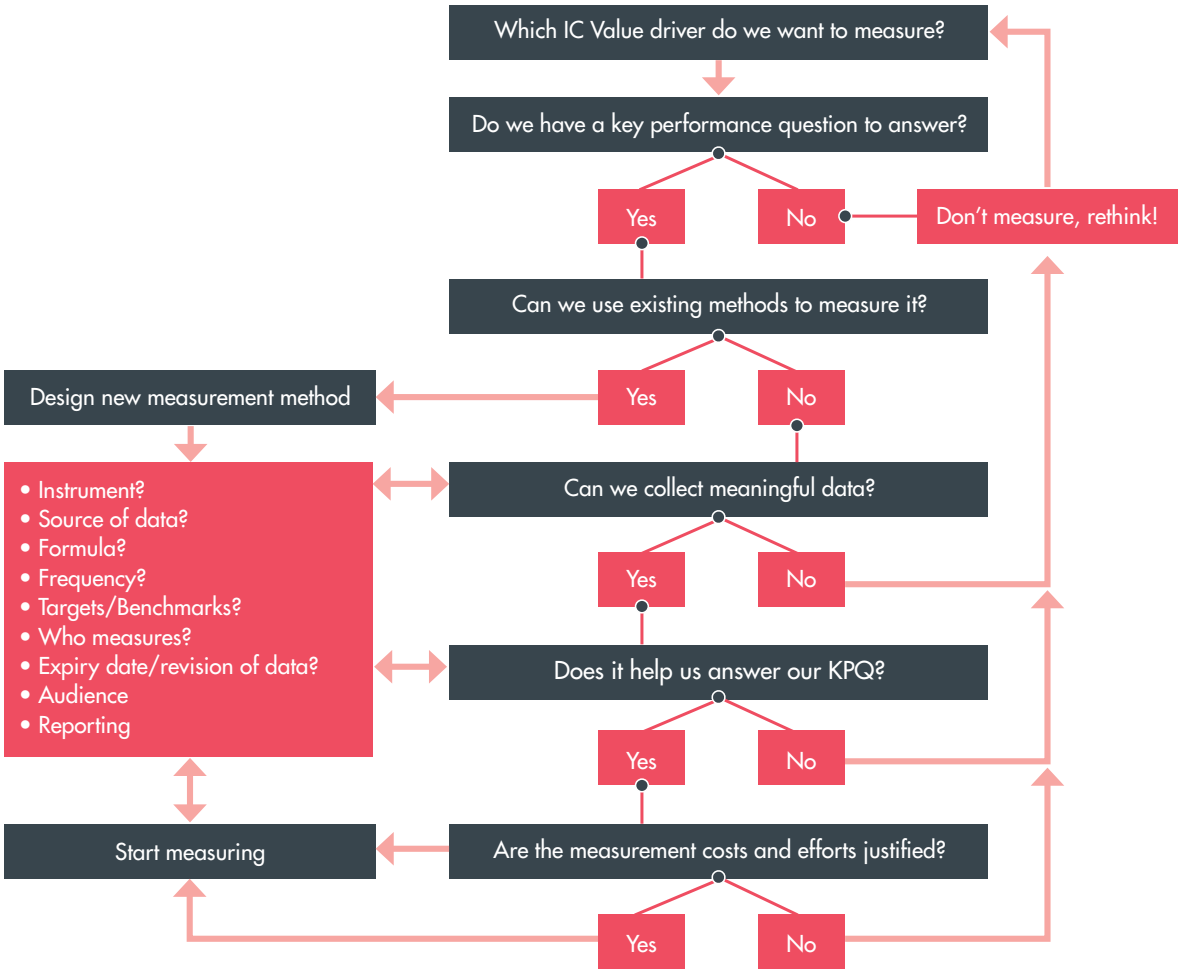
DESIGNING NON-FINANCIAL KPIs

After identifying and mapping the intellectual capital value drivers, organisations can start measuring performance. A decision tree for developing non-financial performance measures, the Intellectual Capital Performance Indicator Design Model, is shown in Figure 2.

For each measure, it is important to decide whether it is worth measuring in the first place. If we start collecting data without knowing what we are looking for, we often collect wrong or unnecessary data. We also will fail to develop answers to the really important questions.

An excellent way of determining whether an indicator is worth measuring is to establish the question(s) the indicator will help to answer. Key Performance Questions™ (KPQs) are designed to identify what managers want to know about the various intellectual capital value drivers. KPQs make sure that our indicators are useful and meaningful and that we are clear about what it is we want to know. If there is no question that needs to be answered, then there is no need for measurement.

Figure 2: Intellectual Capital Performance Indicator Design Model



Developing Key Performance Questions™

KPIs should not be designed solely in the boardroom. Developing KPQs provides a great opportunity to engage everyone in the organisation, as well as some external stakeholders, in the performance management process. See Box 1 for examples of key performance questions. The following are some guidelines for designing KPQs:

- **Design between one and three KPQs for each intellectual capital value driver.** If the intangibles matter in delivering your strategy, then you should develop management questions you want answered. Try to keep them to the vital few.

- **Involve people in the process.** Try to involve people in the design of KPQs by asking them what questions they believe are most relevant. After designing a list of KPQs, get feedback from the subject matter experts or different stakeholders within and outside the organisation. For example, ask the marketing department to discuss and refine the KPQs that relate to brand and reputation. Remember that KPQs communicate to everyone what really matters to an organisation. The more people who understand and agree with these questions, the more likely it is that everybody will pull in the same direction.

- **KPQs should be short and clear.** A good KPQ is short and clear, and contains only one question. Asking a string of questions makes it much harder to guide meaningful and focused data collection. The language should be straightforward and not contain any jargon or abbreviations that might not be understood. Likewise, ensure that the question is written using language with which those in your organisation (and those consulted outside) are comfortable and familiar.

- **KPQs should be formulated as open questions.** Closed questions such as "How many people in our organisation have higher education qualifications?" or "Have we met our employee satisfaction target of 89%?" can be answered simply, without any further discussion or expansion on the issue. However, open questions such as "To what extent are we sharing knowledge?" or "How well are we increasing our corporate reputation?" trigger a wider search for answers by seeking more than a "yes" or "no" response. Open questions make us reflect; they engage our brains to a much greater extent, and they invite explanations and ignite discussion. All of this is vital when it comes to intellectual capital.

- **KPQs should focus on the present and future.** Questions should be phrased in a way that addresses the present or future: "Are we increasing our market share?" instead of questions like "Has our market share increased?" By focusing on the future, we open up a dialogue that allows us to "do" something about the future. We then look at data in a different light, trying to understand what the data and management information means for the future. This helps with data interpretation and ensures that we collect data that help to inform our decision making.

- **KPQs are refined through usage.** After KPQs have been created, their answers should be evaluated to see how well (a) the performance indicators answer the questions, and (b) the indicators help people to make better informed decisions. Once KPIs are in use, they can be refined to improve their focus.

Box 1: Example Key Performance Questions

Below, we have listed some example KPQs to illustrate how organisations have developed key performance questions for some of their intellectual capital value drivers:

- How well are we sharing our knowledge?
- To what extent are we retaining the talent in our organisation?
- How well are we promoting our services?
- How do our customers perceive our service?
- How effective are we in managing our relationships?
- How well are we innovating?
- How successful are we at building our new competencies in X?
- To what extent are we continuing to attract the right people?
- How well are we fostering a culture of innovation and continuous improvement?
- To what extent do people feel passionate about working for our organisation?
- How well are we helping to develop a coordinated network to perform clinical trials?
- How motivated is our workforce?
- How successful are we at sharing one set of values?
- How effective are we at protecting our intellectual property?

Measuring Human Capital

In today's knowledge economy, the adage that "people are our most valuable asset" is more than simply a trite saying. For all companies, it is the performance of employees that provides competitive advantage. Human capital — the skills, competence and motivation of employees — is what determines the extent to which a company is able to leverage its physical and financial capital to greatest advantage. It is human capital that enables companies to serve customers effectively and to develop new products and services that will ensure the long-term success of the business.

As such, talent management has become a top priority for successful businesses. Some leading companies have begun to assign an overall value to their workforce and disclose that value in reported financial information. Many are harnessing the power of analytics in their attempt to garner insight into the critical causal links in the human capital value chain to drive performance and to increase the value of this critical asset.

Box 2 highlights some frequently used human capital indicators that could be useful in the areas of employee recruitment, retention and development. As with basic ratios of efficiency or productivity, these measures of recruitment and retention efforts are, for the most part, reflections of past performance. Sophisticated companies will address the following questions in conjunction with their analytics capabilities to gain a deeper understanding of the factors that will contribute most significantly to their future performance and value creation potential and help formulate forward-looking performance indicators:

- What are the competencies that we need in our organisation to drive success?
- What are the other qualities and characteristics of employees that perform well in leadership positions or other key roles?
- How well are we doing at creating a culture that motivates and engages our employees?

- How effective are our leaders and managers in developing our people and our next generation of leaders?
- How effective are our leadership development and other employee training programmes in developing our needed competencies? What is our ROI on training?
- How well are our employees working together to execute our growth and innovation strategies?

Box 2: Human Capital Performance Indicators

Recruitment

- Average time to fill vacancies
- Job offer acceptance rate
- Average cost to recruit
- Average number of responses for open positions
- Average number of interviewees
- Performance of new employees within initial review period

Retention and Development

- New employee retention
- Average turnover of employees
- Average time employees are in same job or function
- Number of employees trained per period
- Average hours of training per employee
- Training and development costs per employee or % of budget
- Employee/manager evaluation of training effectiveness
- Employee satisfaction scores

Measuring Customer Experience

The key priority for all organisations is building value and creating long-term sustainable success. Perhaps not surprisingly, customer relationships were ranked as the No. 1 driver of organisational value creation in the aforementioned CGMA Report, *Rebooting Business: Valuing the Human Dimension*. Successful businesses heed the time honoured maxim to "put the customer first."

In today's rapidly changing competitive global marketplace, companies recognise that they must be customer-focused. Leading businesses are using sophisticated analytics to better understand the demographics, preferences and purchasing patterns of their customers in order to maximise sales and profitability.

Successful companies also realise that to achieve and sustain a competitive advantage, their business strategies must address their entire value proposition from the perspective of the customer. They recognise the fact that customers derive value not only from quality products and services, but they also attach significant value to a company's brand and, perhaps most importantly, their relationship with the firm.

For many companies and products, brand plays a significant role. The feelings of safety, security, well-being, prestige, economy or other perceived value that a customer derives from a product or company brand are often paramount in customer purchasing decisions. A company's relationship with the customer is vital in many respects. Customer satisfaction is critical to securing and fostering loyalty among customers. In addition, customer interaction and feedback is increasingly critical to the continual refinement of product and service delivery and innovation.

Box 3 displays KPIs that some companies have developed to gauge the experience of their customers and answer key performance questions about how well they are doing at delivering on their value proposition.

Box 3: Sample Customer Experience Measures

Air Products (chemical supplier)	Customer loyalty index Turnaround time for samples
Caterpillar Financial (construction equipment)	Customer satisfaction index First-contact resolution Time to respond to customer request for quote Turnaround time for credit approval decision Turnaround time to fund loan
Cisco (information technology)	Dashboard of metrics by call type Customer satisfaction Customer loyalty Value per transaction
Harrah's (gaming)	Customer loyalty Customer satisfaction Cross-market play First-contact resolution Consolidated play/Share of gaming budget
Lands' End (clothing)	Answer 90% of incoming calls in less than 20 seconds First-contact resolution (currently 94%) Call abandon rate of less than 1.5%

Adapted from APQC Publications, *Managing the total customer experience.* Aug. 23, 2005.

SELECTING THE MEASUREMENT INSTRUMENT

Once we have the KPQs and have identified what we want to measure, we can design performance indicators for our intellectual capital. Most measures of intellectual capital are indirect or proxy measures. For example, in measuring work-related competencies, we might use the number of people with vocational qualifications as a proxy measure. Or, if we want to measure trust in our organisations, we collect survey data as proxies. The one danger with using proxy measures is that we sometimes oversimplify the process and simply measure what is easy to count. Another problem is that we tend to focus on numbers more than their meaning.

An important step in designing indicators for intellectual capital value drivers is to decide on the measurement instrument that will be used to collect the data. When deciding on the instrument, it is important to keep the KPQ in mind when assessing whether meaningful data can be collected.

To enable the user to consider different measurement instruments, we present below an overview of different instruments for measuring intellectual capital value drivers.

- **Data tracking and collection systems** are used to collect data from both internal and external sources for performance and market measures.
- **Surveys and questionnaires** provide a relatively inexpensive way of collecting data on intellectual capital from a large pool of people. Surveys are regularly used to measure intellectual capital value drivers such as employee engagement, corporate culture, customer attitudes, innovation climate or brand image.
- **In-depth interviews** are guided conversations with people, rather than the structured queries found in surveys. In-depth interviews can, for example, be used to assess intellectual capital value drivers such as relationship with key customers, suppliers or partners. In addition to providing a performance score, they can also yield invaluable contextual information about, for instance, how to improve relationships between key customers, partners or employees.
- **Focus groups** are facilitated group discussions (5 – 20 participants) in which participants can express and share their ideas, opinions and experiences. Focus groups are good ways of assessing employee- and customer-related intellectual capital value drivers such as customer experience, customer or staff engagement, team-working climate or trust.
- **Mystery shopping approaches** assess a service by using a "secret shopper" posing as a client or customer. Many retail businesses, banks and hotels have used mystery shopping to assess customer experience.

- **External assessments** conducted by external organisations and institutions can provide independent performance assessments and indicators. Good examples of external assessments are independent surveys that measure the brand recognition, customer awareness or market share in specific segments.

- **Observations** allow us to collect information by observing situations or activities with little or no manipulation of the environment. Observations have been successfully used in assessing organisational culture, skill and experience levels of employees, emotional intelligence and creativity. Another example is employee safety. Instead of waiting for accidents and injuries to occur and then count those, "safe behaviour" measures can be used. Observers proactively look for safe behaviours that would prevent the most common accidents and record those on a behavioural observation form.

- **Peer-to-peer** evaluation is the assessment of performance by participants who vote on or assess each other's performance, either openly or anonymously. This process enables people to learn from each other and to consider their own performance from the perspective of others. Peer-to-peer evaluations have been successfully used to gauge intellectual capital value drivers, including trust; knowledge and experience; teamwork; and relationships.

KPI DESIGN CONSIDERATIONS

For both existing and newly developed methods, it is important to assess (a) whether it is possible to collect meaningful data, and (b) whether the data will help to answer your questions. Finally, it is important to assess whether the resultant data warrants the cost and efforts of measurement (which can be significant). If no meaningful data can be collected, if the data are not really helping you to answer the KPQ, or if the costs are not justified, then it is necessary to rethink and design different indicators.

Creating KPI Indices

When it comes to intellectual capital, a single performance indicator will rarely give us sufficient information. We therefore recommend combining different measures into one index. This provides organisations with a more rounded and balanced view on their intellectual capital.

Human health allows us to illustrate the point. Taking your blood pressure alone to assess your heath would not be sufficient. However, taking blood pressure, cholesterol and blood tests, together with a number of other tests, and combining these into a health index provides a much more balanced and reliable assessment of physical health. The same is true in business. If a company wants to measure customer relationships, a number of indicators such as loyalty, trust, commitment, profitability and referrals can be measured and combined into a customer relationship index.

Avoiding Dysfunctional Behaviours

Integration of financial and non-financial performance measures using a Balanced Scorecard type framework has become increasingly popular with today's organisations. This approach combines the traditional backward-looking financial measures with information on what is currently happening in the business, generally using quantitative but non-monetary terms.

When carried out successfully and using well-designed KPIs, the scorecard approach keeps the focus on long-term strategic objectives, emphasising the fact that performance should not be judged solely on short-term financial targets. However, the use of non-financial measures is not without its difficulties. Box 4 gives examples of dysfunctional behaviours that may occur and how they may be overcome.

KPI Design Template

Once you have designed your indicators, the accompanying Indicator and Index Design Template in Box 5 can be used to identify (a) the measurement instrument for collecting data (eg, survey or interviews); (b) the source of the data; (c) the formula used to calculate the indicator; (d) the frequency of measurement; (e) any targets or benchmarks; (f) who will measure; (g) how long the indicator will be collected before it needs to be reviewed; (h) the target audience for this indicator; and (i) the reporting formats.

Box 4: Overcoming Dysfunctional Behaviours

Behaviour	Cause	Consequences	Remedy
Tunnel vision	Over-emphasis on quantifiable data	Equally valid qualitative data may be ignored	Report qualitative data (such as anecdotal feedback) as part of or alongside the scorecard
Losing sight of the goal	Focus on KPIs rather than the strategic objectives of the business	Lack of strategic direction	Incorporate mission statement and strategic objectives into the scorecard to remind managers of the bigger picture focus
Sub-optimisation	Managers focusing upon immediate local objectives	Organisation-wide objectives are sidelined	Incorporate mission statement and strategic objectives into the scorecard to remind managers of the bigger-picture focus
Data manipulation	Reported non-financial data not accurately representing actual performance	Inaccurate management information	Develop a strong understanding of the operational activities of the business to help identify any anomalies
Inflexibility	Lack of innovation and action as a result of focus upon KPIs	Potential impact on growth; conflicts with the forward-thinking associations of the scorecard approach	Suggestions for improvement to existing products, processes and procedures, including the scorecard itself, should be actively encouraged
Discordance	When considered individually, measures for each scorecard perspective are contradictory and inconsistent with each other	Lack of goal congruence	A more holistic approach is required to ensure that KPIs are consistent with each other and with the overall strategy
Loss of direction	Scorecard measures are no longer consistent with the overall strategy	Strategic objectives not achieved	Review the scorecard as part of the strategic planning cycle to ensure that it is kept relevant

Box 5: Indicator and Index Design Template

Template for Designing Key Performance Indicators	
Intellectual Capital Element being assessed:	Name the strategic element from the Value Creation Map, which is being assessed with this indicator.
Key Performance Question(s)™	Name the question(s) related to performance that this indicator is helping to answer.
Ownership/Person Responsible/ Champion/Coordinator	Identify the person(s) or function(s) responsible for the delivery/performance of the measured strategic element.
Indicator Name	Pick short and clear indicator name.
Data Collection Method/Instrument	Describe how the data will be collected.
Source of data	Describe the source of the data.
Frequency	Describe how frequently this indicator will be collected. If possible, include a forward schedule.
Formula/Scale/Assessment	Describe how performance levels will be determined. This can be qualitative, in which case the assessment criteria need to be identified, or it can be numerical, or using a scale, in which case the formula of scales with categories need to be identified.
Targets and performance thresholds	Identification of targets, benchmarks and thresholds for traffic lighting.
Data entry	Name the person or role responsible for collecting the data.
Expiry/Revision date	Identify the validity date of this indicator, or when it will have to be revised.
How much will it cost or what will be the days required to collect the data? Is it justified?	Estimate the costs incurred by introducing and maintaining this indicator.
Reporting	
Audiences/Access	Name the key audience for this indicator and clarify who will have access to it.
Reporting frequency	Outline how frequently this indicator will be reported to the different audiences (if applicable).
Reporting formats	Describe how the performance will be presented (numerical, graphical and narrative formats). Here it is good to especially think about visual representation that makes information easier to understand and digest.

Source: Marr, B. (2006). Strategic Performance Management: Leveraging and measuring your intangible value drivers, Butterworth-Heinemann, Oxford.

Endnote

1 cgma.org/Resources/Reports/Pages/rebooting-business.aspx.

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Critical success factors

Relevant to ACCA Qualification Papers P3 and P5

Critical success factors

Critical success factors (CSFs) are often quoted in management literature as those areas in which an organisation needs to perform best if it is to achieve overall success. CSFs have frequently been used to help determine the requirements for executive information systems (EIS), supporting the 'key indicator' approach to management control. A number of methods have been developed to identify these key indicators, and the CSF approach is one of the most widely used, which should be measured and monitored using EIS to help manage the strategic direction of an organisation.

It is difficult and expensive to gather, store, validate and make available the various types of management information required for decision making. As such, it is important for managers and providers of information support systems to determine, in advance,

what is most relevant to them.

It is necessary to identify the 'key indicators' that will help a manager to plan, manage, and control an area of responsibility. This method is based on the need for managers to focus, at any point in time, on the most significant aspects of their responsibilities. The development of an EIS, designed to support management control, is based on two main concepts:

- The selection of a set of key indicators of the health of the functional business area. Information will then be collected for each of these indicators.
- Exception reporting – the ability to make available to a manager, as required, information on only those indicators where performance differs significantly from expectations.

The underlying belief is that an effective control system must be tailored to the specific industry in which the organisation operates, and to the specific strategies that it has adopted. It must identify the CSFs that should receive careful and continuous management attention if the organisation is to be successful, and it must highlight performance with respect to these key variables in reports available to all levels of management.

The first concept is frequently approached from the viewpoint of CSFs in that a limited number of areas are identified in which results, if they are satisfactory, will ensure successful performance. They are the few key areas, it is believed, where 'things must go right' if the organisation is to flourish. In turn, each manager must identify the key areas that apply to them, in which results are identified as being absolutely necessary to achieve specific goals. The goals, in turn, support overall organisational goals. The genesis of this approach goes back to the history of warfare, where writers on battles have identified the successful leader as the one who concentrated his forces on the most significant areas.

The current state of performance in these areas should be continually measured. Because these areas are identified as being critical, each manager should have the appropriate information that indicates whether events are proceeding sufficiently well in each area. CSFs and associated performance indicators (PIs) can play a central role in this.

BACKGROUND TO THE APPROACH

The concept of CSFs was first introduced in 1962 by D Ronald Daniel, later managing director of the management consultancy McKinsey and Co. Introducing the concept, Daniel cited examples where major corporations had introduced computerised information systems, processed extensive amounts of data, and claimed to produce meaningful information. However, this information, on closer examination, appeared to be of little use in assisting managers to better perform their jobs, especially in terms of direction, planning, management of operations, and control. To draw attention to the type of information required, Daniel coined the phrase 'critical success factors'. Further, he provided examples of CSFs that he had identified for contemporary major industries. These included:

- In the automobile industry – styling, an efficient dealer network organisation, tight control of management costs.
- In the food processing industry – new product development, good distribution channels, effective advertising.
- In the life insurance industry – the development of agency management personnel, effective control of clerical personnel, innovative new policies.
- In the supermarket industry – the right product mix available in each store, having it actually available on the shelves, advertising it effectively to pull shoppers in, pricing it correctly (since profit margins were low in this industry).

Daniel identified CSFs as being necessary to support the attainment of organisational goals. Goals represent the end points that an organisation hopes to reach. CSFs, however, are the areas in which good performance is necessary to ensure attainment of these goals. Daniel focused on those CSFs that are relevant for any company in a particular industry.

REFINING THE APPROACH

Early research in to the uses and usefulness of CSFs took place at the Massachusetts Institute of Technology (MIT) in the early 1970s, which took Daniel's work further (see Rockart, John F, Chief executives define their own information needs, Harvard Business Review, March–April 1979, Vol 57, pp 81–93 and John F Rockart and Christine Bullen, 1986, The Rise of Managerial Computing, Sloan School of Management and IT).

Daniel's initial thinking had been that CSFs are those that are common to organisations operating in a particular industry. However, MIT identified five prime sources of CSFs:

- the structure of the particular industry
- competitive strategy, industry position, and geographic location
- environmental factors
- temporary factors
- functional managerial position.

The structure of the particular industry

As first identified by Daniel, any industry has a set of CSFs that are determined by the characteristics of the industry itself. Each company in the industry must pay attention to these factors. For example, the manager of any supermarket would ignore at his peril the CSFs listed above.

Competitive strategy, industry position, and geographic location

Every company in an industry is in a unique situation determined by its history and current competitive strategy. For smaller organisations within an industry dominated by one or two large companies, the actions of the major companies will often produce new and significant problems for their smaller competitors. The competitive strategy for the smaller companies may involve establishing a new market niche, getting out of a product line completely, or redistributing resources among various product lines. Their strategy is mainly a reaction to the larger companies' strategies.

In this way a major competitor's strategy can produce a CSF for a small company. For example, Dell's competitive approach to the marketing of small, inexpensive computers informs the CSF identification for all computer manufacturers. The smaller companies must identify what they will do in response, and how they measure the effectiveness of their response. Just as differences in industry position can dictate CSFs, differences in geographic location (eg distribution costs) and in strategic positioning (differentiation or focus strategies for smaller companies) can lead to different CSFs in companies within the same industry.

Environmental factors

As the Gross National Product of an economy can fluctuate with changes in political and demographic factors, CSFs can also change for an organisation. In the early 1970s, virtually no chief executive in the US would have listed 'energy supply availability' as a CSF. However, following the organisation of OPEC and its oil embargo, this factor is now closely monitored by most

executives, because adequate availability of energy, and its price stability, is vital to organisational planning and bottom-line performance in manufacturing and distribution.

Temporary factors

Internal organisational considerations often lead to the monitoring of temporary CSFs. These are areas of activity that are deemed significant to the success of the organisation for a particular period of time because they are considered below the threshold of acceptability, even though they may generally appear to be in good shape and not apparently in need of special attention. For instance, an insurance company that had just been fined by the industry regulator for miss-selling would probably generate a short-term CSF of ensuring that such miss-selling, and consequent financial penalties, would not happen again in the near future.

Functional managerial position

Each functional managerial position has a generic set of CSFs associated with it. For example, almost all manufacturing managers are concerned with product quality, inventory control, and cost control.

Two further dimensions

These five sources of CSFs are one form of classification. CSFs can also be classified as follows:

Internal versus external sources of CSFs

Every manager will have internal CSFs relating to the department and the people they manage. These CSFs can range across such diverse interests as human resource development or inventory control. The primary characteristic of such internal CSFs is that they deal with issues that are entirely within the manager's sphere of influence and control. External CSFs relate to issues that are generally less under the manager's direct control such as the availability or price of a particular critical raw material or source of energy.

Monitoring versus building/adapting CSFs

Managers who are geared to producing short-term operating results invest considerable effort in tracking and guiding their organisation's performance, and therefore employ monitoring CSFs to continuously scrutinise existing situations. Almost all managers have some monitoring CSFs, which often include financially-oriented CSFs such as actual performance versus budget or the current status of product or service transaction cost. Another monitoring CSF might be personnel turnover rates.

Managers who are either in reasonable control of day-to-day operations, or who are insulated from such concerns, spend more time in a building or adapting mode. These people can be classified as future-oriented planners whose primary purpose is to implement major change programmes aimed at adapting the organisation to the perceived emerging environment. Typical CSFs in this area might include the successful implementation of major recruitment and training efforts, or new product or service development programmes.

RESEARCH CONCLUSIONS – CSFs IN PRACTICE

Research has shown that, in general, individual managers focus on a mix of CSFs drawn from the above sources. From an organisational perspective, however, CSFs also have a number of hierarchical levels:

- industry CSFs
- corporate CSFs
- functional CSFs

- individual CSFs.

As mentioned at the beginning of this article, industry CSFs affect an organisation in the development of its strategy, objectives, and goals. No organisation can afford to develop a strategy that does not pay adequate attention to the principal factors that underlie success in its industry. In turn, the strategy, objectives, and goals developed by an organisation lead to the development of a particular set of CSFs for the whole organisation (corporate CSFs) unique to its own circumstances. In turn, corporate CSFs become an input into a similar CSF determination process for each sub-organisation or division in the corporation. Managers at each organisational level will have an individual set of CSFs that will depend heavily on their perspective of their role and on temporary factors.

It is at this point that we should discuss the concept that organisations are ‘human activity systems’, and that individuals within these systems bring their own ‘world view’ to their roles – encompassing their whole belief system – based on their training and previous experience. This world view will influence their perception of what they consider to be important in achieving their own organisational objectives. Thus a new incumbent to a role may identify a number of new CSFs that may augment or replace the CSFs identified by the previous incumbent.

STEPS TOWARDS IMPLEMENTATION – MEASUREMENT

The main use of the CSF concept is as a focus for implementing organisational transformation by supporting beneficial change. This is achieved by:

- helping individual managers determine their priorities and their supporting information requirements
- aiding an organisation in its general planning processes, for strategic and annual planning, and for budgeting purposes
- aiding an organisation in its information systems planning processes.

A key driver for strategic and tactical information systems development is the provision of better performance management information, in order to match achievement against critical organisational goals. To achieve any benefit from using the CSF concept it is also important to remember that choosing what to measure and report on will markedly influence behaviour at every level. So care needs to be taken in human activity systems to recognise that an unbalanced set of indicators, while valid for the short-term needs of an individual in the hierarchy, may have unintended consequences in influencing the behaviour of subordinates. Therefore there is a need to produce a Balanced Scorecard of indicators and measures.

As a starting point in a typical command and control organisation, the following implementation tactics may help:

- Concentrate on measurement, not on counting. For example, focus on what the organisation is trying to achieve, set targets, and measure progress towards achieving those targets.
- Make it a priority to establish measures for the main core processes (core being defined as those that touch the customer or client).
- Ensure that the chosen measures reflect what matters to the customer or client.
- Use historic data to establish existing capability – identify targets and have a plan to close the gap.
- Continually review measures in use and their impact – look at ‘what’ is being measured and ‘why’, and publicly discard those measures no longer most relevant.

As a starting point, four areas for measurement should be considered when managing for improvement: customers, response, process, and system.

Customers

What matters to customers? Can these things be measured (simply and efficiently)? Do we have any systematic methods for understanding what matters to customers? Do we translate what matters into measures for managing and improving performance?

Response

Can 'what matters to customers' be turned into response measures? Are there other 'end to end' measures that will help the organisation learn about, for example, customer acquisition and the efficiency of services delivered? What processes must be measured end to end? Consider risk management – what events in the outside environment do we need to watch out for? What do we need to know about competitor activity?

Process

What measures might be useful in the processes? Some measures should be permanent and some should be temporary. For example, 'throughput' might be an important permanent measure, and 'waste' a useful temporary measure.

System

How should the above measures fit together to tell managers how they are performing, and how they will perform? Are other whole system measures needed? How well is the organisation integrated into, and monitoring, its external environment?

Finally, CSF measures chosen should be SMART, that is:

- specific – in the context of developing CSF objectives this means that the action, behaviour, or achievement described is always linked to a rate, number percentage, or frequency
- measurable – a system, method, or procedure exists that allows the tracking and recording of the behaviour or action on which the CSF objective is focused
- agreed – there should be an agreement with those involved in achieving the objective that it is relevant and necessary
- realistic – that the objectives set are capable of being achieved
- time-based – the objective set should be linked to a date by which it is to be achieved.

Related Links

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10b Non-financial performance indicators

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Introduction

So far in this text we have looked mainly at measures of financial performance.

However, some of the issues we identified in relation to performance measurement in not-for-profit organisations have highlighted the importance of qualitative and non-financial measures in assessing performance.

In this chapter we are going to look at non-financial performance indicators (NFPIs) in more detail. NFPIs which are increasingly popular in organisations as they seek to capture **more rounded data on performance.**

You should be familiar with some of the performance measures covered if you studied Paper F5 *Performance Management.*

Study guide

		Intellectual level
D5	**Non-financial performance indicators**	
(a)	Discuss the interaction of non-financial performance indicators with financial performance indicators	2
(b)	Discuss the implications of the growing emphasis on non-financial performance indicators	3
(c)	Discuss the significance of non-financial performance indicators in relation to employees	2
(d)	Identify and discuss the significance of non-financial performance indicators in relation to product/service quality	3
(e)	Discuss the difficulties in interpreting data on qualitative issues	2
(f)	Discuss the significance of brand awareness and company profile and their potential impact on business performance	3

Exam guide

The syllabus states that candidates should be able to **apply appropriate strategic performance measurement techniques in evaluating and improving organisational performance**.

It is important that organisations look at non-financial performance indicators (NFPIs) as well as financial ones. So you should think about how you would use the information here on NFPIs in a report to advise management how they could improve an organisation's performance.

Also, note that most of the requirements in Study Guide for this section require you to 'discuss' the significance of NFPIs in different circumstances, or the difficulties in interpreting data on qualitative issues. In other words, you need to be able to do more than just describe NFPIs, instead you will need to apply your knowledge to specific scenarios, and discuss how NFPIs could be useful in those scenarios.

Exam focus point

In the December 2009 exam, a part-question tested knowledge of value for money in relation to mission statement. The question also asked students to think of quantitative non-financial performance measures that would be suitable to measure quality of service. The previous examiner commented that answers were good to the first part but some students failed to think of suitable relevant measures for the scenario given.

In the December 2007 exam, a part-question asked for suggestions on how the value of a bus service could be calculated. This clearly wanted a discussion of service factors as well as financial viability. This was answered well, when it was attempted. However, many candidates didn't attempt this despite it being compulsory.

A question in the pilot paper asked for four performance measures that may be used to assess quality of service provided. If you refer to the table in Section 2 below, you will see plenty of examples that could be used to answer this question.

1 Financial and non-financial performance indicators

FAST FORWARD

If organisations concentrate solely on financial performance indicators, important goals and factors may get overlooked.

While it is important for organisations to measure and monitor their financial performance, there may be disadvantages to focusing solely on financial performance.

1.1 Concentration on too few variables

If performance measurement systems focus entirely on those items which can be expressed in monetary terms, managers will **concentrate solely on those variables** and **ignore** other important variables that cannot be expressed in monetary terms.

For example, pressure from senior management to **cut costs and raise productivity** will produce **short-term benefits** in cost control but, in the **long term,** managerial performance and motivation is likely to be affected, labour turnover will increase and product quality will fall.

Reductions in cost can easily be measured and recorded in performance reports, employee morale cannot. **Performance reports** should therefore **include** not only costs and revenues but **other important variables**, to give an indication of expected future results from present activity.

1.2 Lack of information on quality

Traditional responsibility accounting systems also fail to provide **information on the quality or importance of operations**. *Drury* provides the following example:

> 'Consider a situation where a purchasing department regularly achieved the budget for all expense items. The responsibility performance reporting system therefore suggests that the department was well managed. However, the department provided a poor service to the production departments. Low-cost suppliers were selected who provided poor quality materials and frequently failed to meet delivery dates. This caused much wasted effort in chasing up orders and prejudiced the company's ability to deliver to its customers on time.'

1.3 Measuring success, not ensuring success

Financial performance indicators have been said to simply **measure success**. What organisations also require, however, are performance **indicators that ensure success**. Some of these indicators, which are **linked** to an organisation's **critical success factors** such as quality and flexibility, will be **non-financial** in nature.

For example, consider a pizza delivery company. When a customer is choosing which pizza company to buy their pizza from, key factors in their decision will be the price of the pizza, the toppings available and the taste of the pizza. However, they could also be influenced by the time they will have to wait for their pizza to be delivered. If one company can deliver their pizza in twenty minutes, but another one says they will only be able to deliver the pizza in an hour, there is a good chance the customer will choose to place their order with the first company.

It is possible that the speed of delivery could even become a factor which one of the pizza delivery companies uses to differentiate itself from its rivals. In which case, it will be very important for that company to measure how long it takes to deliver its pizzas to its customers, because 'delivery time' has effectively become one of its critical success factors.

Equally, non-financial performance indicators can identify areas where an organisation's **performance is currently relatively weak**, and therefore need to be improved in order to make the organisation more competitive. For example, in the pizza delivery example, the second company might find it needs to reduce the time it takes to deliver its pizzas to make itself more competitive.

1.4 Not linked to long-term organisational strategies

Another issue is that financial performance measurement systems generally focus on **annual or short-term performance** (against financial targets) so they may not be directly linked to longer-term organisation objectives. For example, financial performance measures will not assess how well an organisation is **meeting customer requirements**.

However, non-financial objectives (such as achieving customer loyalty, or new product development) may be vital in achieving – and sustaining – profitability, competitiveness and other longer-term strategic goals.

Once again, there is potentially a **trade-off between the short term and the long term** here. For example, new product development may be an important strategic goal, but the costs involved in research and development may hinder short-term accounting performance.

1.5 Interaction of Financial and Non-Financial Performance Indicators

The example of new product development in the previous section also highlights the **importance of the interaction between financial and non-financial performance indicators.** For example, measuring the number of new products development in a period is a non-financial performance indicator, but developing new products is only valuable to an organisation if they help it increase revenue and profitability.

Financial and non-financial performance indicators interact with each other even though they measure separate activities or aspects of performance.

The table in Section 2.2 below lists a number of Non-Financial Performance Indicators (NFPIs). NFPIs looking at production performance, for example, **measure activity but not cost**. However, activity and cost are linked. For instance, if there are problems with the **quality** of output from a production process, then the goods produced will have to be re-worked and fixed before they can be shipped to customers. This re-working will add to **production costs**. Therefore, if the organisation improves quality standards in its processes, re-working costs will be reduced.

Equally, if the company is having to re-work goods, this may delay production schedules. However, if the organisation also has a target for **on-time deliveries** it could face a dilemma. If the goods are delayed in production, then they may have to be delivered by express courier or some other out-of-hours delivery service to ensure they are delivered on time. However, this would increase delivery cost compared to a standard delivery service. So, if management want to focus on the cost of deliveries, they may have to accept a lower number of on-time deliveries. However, in turn, if customers do not receive their goods on time, they may not place any repeat orders with the company.

This illustrate the different aspects of both financial and non-financial performance that management need to consider, but also indicates that they may, on occasions, need to accept a trade-off between the two.

Another common example of this is the relationship between market share (non-financial) and profit margin (financial). If an organisation is trying to increase its **market share**, it may try to do this by **discounting** its products or offering some kind of **special offers** on them. While the discounts and offers may enable the organisation to gain market share (at least in the short term before competitors react) they may also lead to lower profit margins (for example as discounts reduce the revenue received per product sold).

We can also see the link between financial and non-financial performance in relation to **customer service.** For example, if customers receive good quality service from an organisation, they are more likely to be loyal to that organisation and use it again than if they have received poor service. In this way, there can be a direct link between good quality service, customer retention, and future sales revenue.

Exam focus point

An approach which explicitly combines **financial** and **non-financial performance indicators** is the **balanced scorecard**, with its four perspectives of: financial; customer; internal business and innovation and learning.

We will look at the Balanced Scorecard in more detail in Chapter 13 later in this Study Text.

The **performance pyramid** (which we also look at in more detail in Chapter 13) also highlights the way that a range of objectives focussing on customer satisfaction, flexibility and productivity will be necessary to support an organisation's financial performance and market position.

Exam focus point

In a similar way, Fitzgerald *et al*'s **results and determinants analysis** also explicitly combines financial and non-financial aspects of performance in relation to **service industries**.

This analysis looks at the **competitive** and **financial results** which can be used to measure an organisation's performance, and then the **determinants** which underpin that performance.

Results

(i) **Competitive performance**, focusing on factors such as sales growth and market share.

(ii) **Financial performance**, concentrating on profitability, liquidity, capital structure and market ratios.

Determinants (of those results)

(i) **Quality of service** looks at matters like reliability, responsiveness, courtesy, competence and availability/accessibility. These can be measured by customer satisfaction surveys.

(ii) **Flexibility** relates to an organisation's ability to deliver at the right speed to meet customer requirements, to respond to precise customer specifications, and to cope with fluctuations in demand.

(iii) **Resource utilisation** considers how efficiently resources are being utilised. This can be problematic because of the complexity of the inputs to a service and the outputs from it and because some of the inputs are supplied by the customer.

(iv) **Innovation** is assessed in terms of both the innovation process and the success of individual innovations. Individual innovations can be measured in terms of whether they have improved the organisation's ability to meet the other five performance criteria.

We will look at the importance of results and determinants again in Chapter 13 of this Study Text, alongside our analysis of Fitzgerald and Moon's building block model.

2 Growing emphasis on non-financial performance indicators

FAST FORWARD

Changes in cost structures, the competitive environment and the manufacturing environment have lead to an **increased use of NFPIs.**

2.1 Impact of changes in cost structures and the competitive environment

These have led to a shift from treating financial figures as the foundation of performance measurement to treating them as one of a range of measures.

2.1.1 Changes in cost structures

Modern technology requires massive investment and product life cycles have got shorter. A greater proportion of costs are sunk and a large proportion of costs are planned, engineered or designed into a product/service before production/delivery. **At the time the product/service is produced/delivered, it is therefore too late to control costs.**

Another implication of **product life cycles getting shorter** is that it becomes increasingly important for organisations to get new products to market as quickly as possible, and – wherever possible - before their competitors. This idea of time to market is very important here.

Key term

Time to market is the length of time it takes between a new product being conceived and it being commercially available for sale in the marketplace.

The idea of 'time to market' highlights that as well as researching and developing new products, organisations, have to be able to produce the products commercially before the organisation will start to generate any revenues or profits from the new products.

2.1.2 Changes in competitive environment

Financial measures do not convey the full picture of a company's performance, especially in a **modern business environment**.

In an increasingly competitive business environment, price is only one of the factors which may affect a consumer's purchasing decision. Companies (particularly those pursuing differentiation strategies) are also competing in terms of **product quality, delivery, reliability, after-sales service** and **customer satisfaction**. If these variables are important elements in a company achieving its strategy successfully, then it follows that the company should also measure its performance in respect of them.

In this context it could also be useful to think of a company's relationship with its customers.

Many companies are now looking to use **relationship marketing** techniques to help build longer-term relationships and loyalty among their customers. The quality of service given to customers (including after-sales service) and customer satisfaction are likely to be very important in maintaining these relationships with customers.

This again highlights the importance of measuring how well a company is performing in such areas.

2.1.3 Changes in manufacturing environment

New manufacturing techniques and technologies focus on minimising throughput times, inventory levels and set-up times. But managers can reduce the costs for which they are responsible by increasing inventory levels through maximising output. If a performance measurement system **focuses principally on costs**, managers may **concentrate on cost reduction and ignore other important strategic manufacturing goals**.

2.2 Introducing non-financial performance indicators (NFPIs)

As a result of the changes in cost structures and in the competitive and manufacturing environments, many companies are discovering the usefulness of quantitative and qualitative non-financial performance indicators (NFPIs). The following definition from the Chartered Institute of Management Accountants (CIMA) captures the essence of NFPIs, and also gives some useful examples of possible performance measures:

Key term

Non-financial performance measures are 'measures of performance based on non-financial information which may originate in and be used by operating departments to monitor and control their activities without any accounting input.'

Non-financial performance measures may give a more timely indication of the levels of performance achieved than do financial ratios, and may be less susceptible to distortion by factors such as uncontrollable variations in the effect of market forces on operations.

Examples of non-financial performance measures:

Area assessed	*Performance measure*
Service quality	Number of complaints
	Proportions of repeat bookings
	Customer waiting time
	On-time deliveries

Production performance	Set-up times Number of suppliers Days' inventory in hand Output per employee Material yield percentage Delays or downtime in production Proportion of output requiring rework Manufacturing lead times
Marketing effectiveness	Trend in market share Sales volume growth Customer visits per salesperson Client contact hours per salesperson Sales volume forecast v actual Number of customers Customer survey response information
Personnel	Number of complaints received Staff turnover Days lost through absenteeism Days lost through accidents/sickness Training time per employee.'

3 The value of non-financial performance indicators

3.1 Ease of use

FAST FORWARD

NFPIs do have advantages over financial indicators but a **combination** of both types of indicator is likely to be most successful.

Unlike traditional variance reports, NFPIs can be provided quickly for managers, per shift, **daily** or even **hourly** as required. They are likely to be easy to calculate, and easier for non-financial managers to understand and therefore to use effectively.

The beauty of non-financial indicators is that **anything can be compared** if it is **meaningful** to do so. The measures should be **tailored** to the circumstances so that, for example, number of coffee breaks per 20 pages of Study Text might indicate to you how hard you are studying!

Many suitable measures combine elements from the chart shown below. (If you studied Paper F5, you should remember this chart.) Use it to answer the question below.

Errors/failure	Time	Quantity	People
Defects	Second	Range of products	Employees
Equipment failures	Minute	Parts/components	Employee skills
Warranty claims	Hour	Units produced	Customers
Complaints	Shift	Units sold	Competitors
Returns	Cycle	Services performed	Suppliers
Stockouts	Day	kg/litres/metres	
Lateness/waiting	Month	m^2/m^3	
Misinformation	Year	Documents	
Miscalculation		Deliveries	
Absenteeism		Enquiries	

Question

NFPIs

Using the above chart make up five non-financial indicators and explain how each might be useful.

Answer

Here are five indicators, showing you how to use the chart, but there are many other possibilities.

(a) Services performed late v total services performed
(b) Total units sold v total units sold by competitors (indicating market share)
(c) Warranty claims per month
(d) Documents processed per employee
(e) Equipment failures per 1,000 units produced

Don't forget to explain how the ones that you chose might be useful.

3.2 Risk of manipulation

While NFPIs can provide valuable information to managers, alongside financial performance indicators, it is important that NFPIs are **open to manipulation**, just as financial performance indiciators (FPIs) are. Any measure of performance - whether qualitative or quantitative - can distort behaviour towards focussing on that measure ('What gets measured gets done').

Equally, though, the measures themselves could be manipulated as the case study below illustrates.

With financial measures, managers could try to build some slack into their budgets so that they can then show actual performance has exceeded budget. However, in relation to an NFPI, if an organisation looks to measure customer service levels, and uses customer service questionnaires as a measure for collating customer feedback, customer service staff could manipulate the results by only giving questionnaires to customers they think are going to give favourable feedback.

Another important issue to consider with NFPIs compared to FPIs is that NFPIs may actually be **more open to manipulation** because they can be **more subjective**. For example, what one customer considers to be a very good level of customer service another might be what another customer expects as standard.

Case Study

(1) Hospital waiting times

One of the indicators which is often used to measure the performance of hospitals in the UK is 'waiting time' - the length of time patients have to wait before they are treated.

NHS guidelines determine that a patient's waiting time ends if no treatment is necessary, or when their treatment begins. This could include:

- Being admitted to hospital for an operation or treatment
- Starting treatment, such as taking medication, that doesn't require you to stay in hospital
- Beginning your fitting of a medical device, such as leg braces
- Agreeing to your condition being monitored for a time to see whether you need further treatment
- Receiving advice from hospital staff to manage your condition

However, there have been examples where hospitals have tried to manipulate performance against the guidelines so improve their reported waiting times. For example:

- Holding patients in ambulances to delay their point of registration, or
- Counting triage or preliminary examinations as 'being seen'.

(2) Southern Water

In February 2008, Ofwat (the water company regulator in the UK) imposed a £20.3m fine on Southern Water for poor service and reporting misleading data.

Ofwat said that Southern Water had systematically manipulated information to hide its true service performance. During Ofwat's enquiry into Southern Water's performance, the water company admitted it had been taking too long to respond to customer complaints, had failed to compensate customers whose complaints were addressed too slowly, and had misreported its customer performance to Ofwat.

The enquiry showed that Southern Water had systematically manipulated information to hide its true service performance; and this misreporting meant Southern was able to raise its price by more than it should have done.

The annual price increases which Southern Water was entitled to impose on its customers were dependent on its levels of customer performance. Therefore, the company benefited directly from the misreporting at two price reviews, and customers received higher bills as a result.

Exam focus point

The Examiner (Alex Watt) wrote an article in *Student Accountant* (February 2012 edition) about the importance of reading the question requirements carefully in the P5 exam.

You are strongly advised to read this article in full before you sit your exam, but one section is particularly relevant here.

Dr Watt noted that there appears to be a common misconception among candidates that financial performance indicators are *always* being manipulated and that non-financial performance indicators are *less* open to manipulation than financial ones.

However, as Dr Watt points out, this implies both that the people that prepare financial reports are generally unethical, and also that controls over financial information systems are less stringent that those over non-financial information systems.

Hopefully you will recognise that both of these implications are false. There may be a *danger* of manipulation in financial information systems, and this *may* be exacerbated by inappropriate reward systems (creating a 'bonus culture'). However, this does not mean that financial performance indicators are inherently more vulnerable to manipulation that non-financial performance indicators.

3.2.1 Causal links

Another important issue to consider when looking at non-financial performance indicators is that of cause and effect.

Many companies adopt non-financial measures without properly assessing whether they will have an impact on performance and the ability to generate value.

However, unverified causal links can **focus attention on the wrong objectives**, meaning that 'what gets measured' will not lead to an improvement in performance.

For example, Xerox spent millions of dollars on customer surveys, based on the assumption that improvements in customer satisfaction translate to better financial performance. However, later analysis found no such association, and instead Xerox shifted to a customer loyalty measure which was found to be a leading indicator of financial performance.

3.3 The balanced scorecard

The ultimate goal of commercial organisations in the long run is likely to remain the maximisation of **profit**, however, so while non-financial performance indicators are important, the financial aspects of performance cannot be ignored.

Consequently, looking at a **combination of financial and non-financial indicators** is therefore likely to be most successful way of measuring performance.

Nonetheless, there is also a danger that if too many performance measures are reported this could lead to **information overload** for managers; providing information that is not truly useful, or sending conflicting signals.

A further danger of NFPIs is that they might lead managers to pursue detailed **operational goals** and become blind to the **overall strategy** in which those goals are set.

The need to **link financial and non-financial measures** of performance and to identify the **key performance measures** provided the impetus for the development of the balanced scorecard, which we look at in Chapter 13.

4 Non-financial performance indicators in relation to employees

FAST FORWARD

NFPIs can usefully be applied to **employees**.

One of the many criticisms of traditional accounting performance measurement systems is that they do not measure the **skills, morale and training of the workforce**, which can be as valuable to an organisation as its tangible assets. For example, if employees have not been trained in the manufacturing practices required to achieve the objectives of the new manufacturing environment, an organisation is unlikely to be successful.

Employee attitudes and morale can be measured by **surveying** employees. Education and skills levels, promotion and training, absenteeism and labour turnover for the employees for which each manager is responsible can also be monitored.

The **weighting** attached to employee-orientated NFPIs when assessing managerial performance should be high. High profitability or tight cost control should not be accompanied by 100% labour revenue.

The nature of the relationship between staff and customers in service industries means that staff-based NFPIs are particularly important in service industries. For example, the **morale** of restaurant staff could directly affect the welcome and they service they give to customers, which in turn could affect the customers' impression of the restaurant and whether they choose to eat there again.

Case Study

Aviva

The Insurance company, Aviva, has recognised that as well as reporting on financial performance it is also important to report on the non-financial aspects of its business.

It considers that its employees and customers are fundamental to the success of its business, so they form the basis of its non-financial performance measures which include employee engagement and customer advocacy.

Employee engagement represents the degree to which people believe Aviva is a great place to work, and are contributing to help meet the company's collective goals and ambitions.

Customer advocacy provides an indication of expected customer retention levels and the opportunities for cross-selling of the company's portfolio of products.

5 Non-financial performance indicators in relation to product/service quality

FAST FORWARD

NFPIs are extremely useful when assessing **product/service quality.**

5.1 Performance measurement in a TQM environment

TQM is a highly significant trend in modern business thinking. We look at it in more detail in Chapter 11 when we look at Japanese businesses practices and when considering the **costs of quality**.

Because **TQM embraces every activity** of a business, performance measures cannot be confined to the production process but must also cover the work of sales and distribution departments and administration departments, the efforts of external suppliers, and the reaction of external customers.

In many cases the measures used will be non-financial ones. They may be divided into three types.

5.1.1 Measuring the quality of incoming supplies

The quality of output depends on the quality of input materials, and so **quality control** should include procedures for acceptance and inspection of goods inwards and measurement of rejects.

(a) **Inspection** will normally be based on statistical sampling techniques and the concept of an acceptance quality level (AQL).

(b) Another approach that can be used is to give each supplier a **'rating'** for the quality of the goods they tend to supply, and give preference with purchase orders to well-rated suppliers.

(c) Where a **quality assurance scheme** is in place, the supplier guarantees the quality of goods supplied. This places the onus on the supplier to carry out the necessary quality checks, or face cancellation of the contract.

5.1.2 Monitoring work done as it proceeds

This will take place at various key stages in the production process. Inspection, based on random sampling and other statistical techniques, will provide a continual check that the production process is under control. The aim of inspection is not really to sort out the bad products from the good ones after the work has been done. The aim is to **satisfy management that quality control in production is being maintained.**

'In-process' controls include statistical process controls and random sampling, and measures such as the amount of scrap and reworking in relation to good production. Measurements can be made by product, by worker or work team, by machine or machine type, by department, or whatever is appropriate.

5.1.3 Measuring customer satisfaction

Some sub-standard items will inevitably be produced. In-process checks will identify some bad output, but other items will reach the customer who is the ultimate judge of quality. **'Complaints'** may be monitored in the form of letters of complaint, returned goods, penalty discounts, claims under guarantee, or requests for visits by service engineers.

Some companies adopt a more pro-active approach to monitoring customer satisfaction by surveying their customers on a regular basis. They use the feedback to obtain an index of customer satisfaction which is used to identify quality problems before they affect profits.

5.1.4 Customer satisfaction, repeat business and loyalty

Customer satisfaction levels are very important to a business, because satisfied customers are most likely to be loyal and make repeat orders with that business. As a result, high levels of customer satisfaction lead to higher and more stable revenues for a business, and increased profitability. This therefore emphasises the importance of measuring customer satisfaction levels.

In relation to customer loyalty, the customer's perspective of whether they had received good service can often play a key role in determining whether they will continue to choose one company over another. Importantly, a company may *think* it is providing good quality service, but if the customers disagree then they are less likely to remain loyal to it. This reiterates the importance of finding out what customers actually feel about the levels of service they have received; for example by obtaining customer feedback.

Research conducted by the consultancy firm Bain & Company found that an increase of 5% in customer retention can increase profits by anywhere between 25% and 95%. The same study found that it costs between six to seven times more to gain a new customer than to keep an existing one.

Similarly, the International Customer Service Association reported that 68% of customers stop doing business with a company because of poor service. Yet 95% of dissatisfied customers would continue to do business with a company if their problem was solved quickly and satisfactorily.

5.2 Quality of service

Exam focus point

A longer part-question in the December 2008 exam asked for a set of six performance measures that could be used to measure **quality** of **service**.

Service quality is measured principally by **qualitative measures**, as you might expect, although some quantitative measures are used by some businesses.

Service business, such as restaurants, hotels, airlines, software developers and so on need to research the **needs of their customers** to be able to measure how well they are performing.

These needs are likely to vary according to the nature of the business: for example, reliability is important in a bank; comfort is more likely to be important in a hotel.

The **SERVQUAL** methodology (developed by Zeithanl, Parasurman & Berry) covers five dimensions of service quality. Customer feedback is sought in relation to:

(a) **Tangibles**: for example, appearance of facilities; is equipment up-to-date equipment; are staff well dressed?

(b) **Reliability**: for example, are bookings processed accurately; if services are promised by a certain time, are they delivered by that time?

(c) **Responsiveness**: Do staff react to queries quickly, and courteously?

(d) **Assurance**: Do staff inspire confidence: if customers have problems, are staff sympathetic and reassuring?

(e) **Empathy**: Are customers are treated as individuals; do staff have the customers' best interests at heart?

The SERVQUAL methodology then allows business to improve their performance by gauging the gap between how well they think they are performing and customers' expectations of how well they should be performing. Staff and managers may believe they are delivering a good quality service; customer may not agree though.

The following table (based on Fitzgerald *et al*) identifies **factors** pertaining to service quality, the **measures** used to assess them, and the **means of obtaining the information** in the context of British Airports Authority (BAA), a mass transport service:

Service quality factors	Measures	Mechanisms
Access	Walking distances Ease of finding way around	Customer survey and internal operational data Customer survey
Aesthetics/appearance	Staff appearance Airport's appearance Quantity, quality, appearance of food	Customer survey Customer survey Management inspection
Availability	Equipment availability	Internal fault monitoring system and customer survey Customer survey and internal operational data
Cleanliness/tidiness	Cleanliness of environment and equipment	Customer survey and management inspection
Comfort	Crowdedness of airport	Customer survey and management inspection
Communication	Information clarity Clarity of labelling and pricing	Customer survey Management inspection
Competence	Competence of staff in performing duties and answering customer queries	Internal operational data Customer survey
Courtesy	Courtesy of staff in dealing with customers	Customer survey and management inspection
Friendliness	Staff attitude and helpfulness	Customer survey and management inspection
Reliability	Number of equipment faults	Internal fault monitoring systems
Responsiveness	Staff responsiveness	Customer survey
Security	Efficiency of security checks Number of urgent safety reports	Customer survey Internal operational data

Question

Measuring quality

What do you conclude are the two main means of measuring service quality at BAA?

Case Study

TNT

TNT is a leading global express distribution, logistics and international mail company which moves documents, consignments and business mail.

TNT's philosophy focuses on the customer and aims to be their business partner, devising solutions for all of their customers' distribution needs. TNT's mission is to exceed its customers' expectations in the transfer of their goods and documents around the world.

TNT is serious about providing distinctive levels of service quality and customer care to its customers, and works hard to derive improvements from problems and complaints. It uses a worldwide reporting system to identify all failures in detail, without exception. Then a weekly in-depth root-cause analysis is used to identify and solve problems.

By focusing on complaints data, TNT has been able to dramatically improve its performance, including a major improvement in the number of on-time deliveries, and a similarly dramatic reduction in missed pick-ups. This in turn resulted in fewer problems for staff, and led to a reduction in employee turnover and absenteeism.

6 Qualitative issues

FAST FORWARD

Whereas quantitative factors relate to quantities or amounts and so can be measured relatively easily, **qualitative factors** relate to quality and can often be more difficult to measure, and can be very difficult to express in monetary terms.

6.1 Qualitative information and difficulties in interpreting data

One of the major problems in interpreting qualitative data is that it is based on people's opinions and judgements, and therefore it is **subjective**.

For example, one person's assessment of the quality of service they have received could be different to another person's, despite the quality of service being provided remaining essentially the same.

Often the interpretation of qualitative issues is subject to **personal preference and taste**. For example, television talent shows (such as 'X factor') have a panel of judges who compare the quality of the performances they have seen and then provide feedback on them. However, the judges often differ as to which performances they thought were best, reflecting the subjective nature of comparing the quality of different performances.

There can also be problems in relation to how qualitative data is recorded is recorded and processed. One way to try to overcome the problems is by **converting qualitative data into quantitative data**. For example, continuing the idea of television talent shows, instead of just giving their comments on performances, the judges also give the different contestants a mark. Then the acts can be ranked according to the totals of the marks they have received.

Organisations can do something similar in order to measure performance in qualitative areas. For example if they want to record customers' feedback about the quality of service they have received, they can ask the customers to complete a short survey on it.

Surveys often use scoring systems to capture data on service or staff attitudes. This can be aggregated for management to get a feel for, say, employee or customer satisfaction. For example, customer service surveys may ask customers to indicate how satisfied with the level of service they have received, on a scale of 1 to 5, with '1' representing 'Very satisfied' and '5' representing 'Not at all satisfied'.
However scoring systems are still subjective, and there is also a tendency to score toward the middle. In general, people tend to feel more comfortable selecting scores in the range 2 to 4, rather than using the extreme scores of 1 or 5.

Trends and time series

One way of reducing the impact of the subjectivity in NFPIs is to look at trends in performance rather than one-off metrics.

In this respect, the average scores from customer service surveys over a period of time can be recorded as a time series, and a trend line (a regression line) can be derived from them. This trend line will show whether performance is improving or getting worse over time.

However, as with any time series analysis, there are different **components of the time series** which it may be necessary to identify:

(a) An underlying **trend**

(b) **Seasonal variations** or fluctuations

(c) Cycles, or **cyclical variations**

(d) Non-recurring, **random variations**. These may be caused by unforeseen circumstances such as a technological change or a fire at a factory or warehouse.

6.2 Branding

Brand identity conveys a lot of information very quickly and concisely. This helps customers to identify the goods or services and thus helps to **create customer loyalty** to the brand. It is therefore a means of increasing or maintaining sales. (In some extreme cases, a strong brand could even act as a barrier to entry preventing potential entrants from entering a market, if they think customers will not be persuaded to move away from the brand.)

Where a brand image promotes an idea of **quality**, a customer will be disappointed if their experience of a product or service fails to live up to expectations. Quality assurance and control is therefore of utmost importance. It is essentially a problem for **service industries** such as hotels, airlines and retail stores, where there is **less possibility** than in the manufacturing sector of **detecting and rejecting the work of an operator before it reaches the customer**. Bad behaviour by an employee in a face-to-face encounter with a customer will **reflect on** the **entire company** and possibly deter the customer from using any of the company's services again.

Brand awareness is an **indicator of a product's/organisation's place in the market**. **Recall tests** can be used to assess the public's brand awareness.

According to the marketing guru Kotler, a brand is 'a name, term, sign, symbol or design or combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors.'

Brands convey messages to customers, for example denoting quality or reliability, fashionability ('coolness') or tradition.

Branding messages are usually qualitative rather than focusing on price, and one of the perceived advantages of branding is that by creating an 'identity' for a product, an organisation can reduce the importance of price differentials between their product and rival products. This may in turn allow them to charge a higher price for their product.

However, some brands will position themselves on the basis of value for money so branding does not necessarily mean charging premium prices. Moreover, certain consumers reject 'branded products' especially when considering **value for money.** This can be seen in supermarkets where shoppers choose generic (own label) products in preference to brand names, because the own label products are seen as being cheaper but having the same use.

In this respect, branding is perhaps most appropriate to organisations or products which are following a differentiation strategy. Branding is a form of **product differentiation** that can make it possible to charge premium prices for a product (or service) and therefore earn higher profits than if products had to be sold at a lower price. (Think, for example, of designer clothes labels. The kudos attached to the brand means that the clothes can be sold for significantly higher prices than non-branded equivalents.)

Luxury brands use quality and exclusiveness to appeal to consumers. Recent reinventions of 'tired' brands include Burberry where a new designer has extended the brand life by reinventing the house style and designing it into new products. Extending the brand life in this way means the business can continue to benefit from the status of an existing brand. Burberry had a loyal customer base who bought the signature check products and these are still produced. It was also able to extend the brand life by attracting younger and high-spending customers who prefer modern interpretations but associated with established quality. This represents additional revenue.

Another important aspect of branding is the creation of brand loyalty, and therefore improving **customer retention** rates and encouraging repeat purchases.

An example of the way organisation's try to increase band loyalty is in the use of loyalty cards by supermarkets (for example, *Tesco's Clubcard*), attracting customers by earning points each time they buy goods from that store or consortium of participating retailers.

However, as well as encouraging loyalty, these cards also provide the retailer with valuable data about customer purchases and behaviours. The retailer can then use this data to create a profile what kind of people its cardholders are, by using data mining techniques it can also identify patterns in their purchases. The resulting information can then be used by the retailer to target its marketing campaigns – for example, offering cardholders deals on the products which they are likely to buy, and thereby increasing the likelihood they will continue to shop with that retailer, and continue to provide revenue for that retailer.

Case Study

Global brands

The Business Week/Interbrand Report of Top Global Brands (2008) identified Coca-Cola as the most valuable global brand, with a brand value of $66,667 million.

Coca-Cola itself has acknowledged that only a relatively small percentage of the company's value lies in its plant and machinery; because most of the value lies in its brands.

Strong brand names have positive effects on consumer perceptions and preferences.

Jobber, in *Principles and Practice of Marketing,* highlights a striking example of this:

Two matched samples of consumers were asked to taste Diet Coke and Diet Pepsi, and state a preference between the two drinks. The first group carried out a 'blind test' (that is, they tasted the drinks without being told which one was which.) The second group carried out an 'open test' (that is, they knew which drink was which when tasting them).

The results of the tests were as follows:

	'Blind' tasting	'Open' tasting
Prefer Diet Coke	44%	65%
Prefer Diet Pepsi	51%	23%
No clear preference	5%	12%

The tests clearly show how a strong brand name influenced perceptions and preferences towards Diet Coke.

This kind of positive brand equity is likely to result in high customer loyalty and low price sensitivity, which in turn should enable market-leading brands to be able to sustain high profits.

6.3 Company profile

Company profile is **how an organisation is perceived by a range of stakeholders.** For example, stakeholders may have a negative attitude towards an organisation, perhaps as a result of an ethical issue or a crisis that has struck the organisation and the associated media comment. **Market research** can determine company profile and **marketing campaigns** can improve it if necessary.

Chapter Roundup

- If organisations concentrate solely on financial performance indicators, important goals and factors may get overlooked.
- Changes in cost structures, the competitive environment and the manufacturing environment have lead to an **increased use of NFPIs.**
- NFPIs do have advantages over financial indicators but a **combination** of both types of indicator is likely to be most successful.
- NFPIs can usefully be applied to **employees**.
- NFPIs are extremely useful when assessing **product/service quality.**
- Whereas quantitative factors relate to quantities or amounts and so can be measured relatively easily, **qualitative factors** relate to quality and can often be more difficult to measure, and can be very difficult to express in monetary terms.

Quick Quiz

1 Which of the following is/are true:

(i) Non-financial performance indicators are always qualitative

(ii) Non-financial performance indicators are less open to manipulation than financial performance indicators

A Neither of them
B (i) only
C (ii) only
D Both of them

2 What is the main difficulty in interpreting qualitative data?

3 Managers are increasingly using non-financial as well as financial performance indicators. List some reasons why you think this might be happening.

4 List **four** suitable measures for each of the following activities: service quality, production performance, marketing effectiveness, and personnel.

5 Why are non-financial performance indicators important in relation to employees?

Answers to Quick Quiz

1 A

Although non-financial performance indicators focus on factors of a non-financial nature they can still include both quantitative and qualitative measures. So (i) is not true.

Both financial and non-financial performance measures could be open to manipulation. However, if anything, the subjective nature of many non-financial measures makes them more open to manipulation than financial measures are. So (ii) is not true either.

2 The data is often based on a person's opinion or judgement and is therefore subjective, because opinions and judgements vary from person to person.

3 A Three possible reasons are:

(a) Financial indicators concentrate on too few variables.
(b) Financial indicators give no information on quality.
(c) Financial indicators measure success but don't help business to be successful.

4 Here are some suggestions:

Area assessed	*Performance measure*
Service quality	Number of complaints Proportions of repeat bookings Customer waiting time On-time deliveries
Production performance	*Four from:* Set-up times Number of suppliers Days' inventory in hand Output per employee Material yield percentage Schedule adherence Proportion of output requiring rework Manufacturing lead times
Marketing effectiveness	*Four from:* Trend in market share Sales volume growth Customer visits per salesperson Client contact hours per salesperson Sales volume forecast v actual Number of customers Customer survey response information
Personnel	*Four from:* Number of complaints received Staff turnover Days lost through absenteeism Days lost through accidents/sickness Training time per employee.

5 A number of the aspects of employees' performance (such as skill, morale and attitude) are qualitative and cannot be expressed in financial terms. However, these aspects of employee performance can have a significant impact on an organisation's performance. For example, poor morale and attitude may translate into poor customer service and, in turn, poor customer retention rates.

'What you measure is what you get': WYMIWYG.

Issues in performance measurement

Ideally **performance measures** should reward behaviour that maximises the corporate good. But:

- Management/staff will concentrate only on what they know is being measured.
- Good performance that satisfies management's/staff's own sense of what is important will not necessarily work towards the corporate good (problem of **goal congruence**).

Problems in measuring managerial performance

- Segregating managerial performance from the economic performance of the department/division/team.
- Including in performance measures only those items directly controllable by the manager in question.
- Timing:
  - Not too long after performance (that is no automatic annual bonus).
  - Not so soon after performance that risk-taking is encouraged.
- Cultural differences:
  - Power distance, so manager-led, not a team effort.
  - Individualism vs collectivism.
  - National cultures.

It is easy to assess a manager as an employee (eg days absent) but ability as a manager requires assessment in relation to area of responsibility.

But:

- There are different degrees of controllability.
- There are reasons for holding managers accountable for factors beyond their control.

So a matter of judgment by top management.

12

Performance measurement: strategy, reward and behaviour

Topic list	Syllabus reference
1 Human resource planning	D7(a)
2 Appraisal and performance management	D7(b)-(c)
3 Reward management	D8(a)-(e)
4 Accountability	D9(a)
5 Benefits and problems of performance measurement	D9(b)
6 Management styles	D9(c)

Introduction

In this final chapter in this part we consider the various aspects of leadership and motivation. **Appraisal and reward** are the practical activities that derive from these wider topics and they have a direct influence on performance.

We also consider how managers can be made **accountable** for performance outcomes and the roles of principal and agent. Then we move onto what happens when **performance measurement leads to certain types of behaviour** in those being measured. Finally we look at **three styles of manager** identified by Hopwood and how these styles affect relationships and behaviour.

Study guide

		Intellectual level
D7	**Performance measurement and strategic Human Resource Management issues**	
(a)	Explain how the effective recruitment, management and motivation of people is necessary for enabling strategic and operational success.	3
(b)	Discuss the judgemental and developmental roles of assessment and appraisal and their role in improving business performance.	3
(c)	Advise on the relationship of performance management to performance measurement (performance rating) and determine the implications of performance measurement to quality initiatives and process re-design.	3
D8	**Performance measurement and reward systems**	
(a)	Explore the meaning and scope of reward systems.	2
(b)	Discuss and evaluate different methods of reward practices.	2
(c)	Explore the principles and difficulty of aligning reward practices with strategy.	2
(d)	Advise on the relationship of reward management to quality initiatives, process re-design and the harnessing of e-business opportunities.	3
(e)	Assess the potential beneficial and adverse consequences of linking reward schemes to performance measurement, for example how it can affect the risk appetite of employees.	3
D9	**Other behavioural aspects of performance measurement**	
(a)	Discuss the accountability issues that might arise from performance measurement systems	3
(b)	Evaluate the ways in which performance measurement systems may send the wrong signals and result in undesirable business consequences.	3
(c)	Demonstrate how management style needs to be considered when designing an effective performance measurement system.	3

Exam guide

Make sure you take note of syllabus reference D7(c) at the start of this chapter: '… determine the implications of performance measurement to quality initiatives and process re-design'.

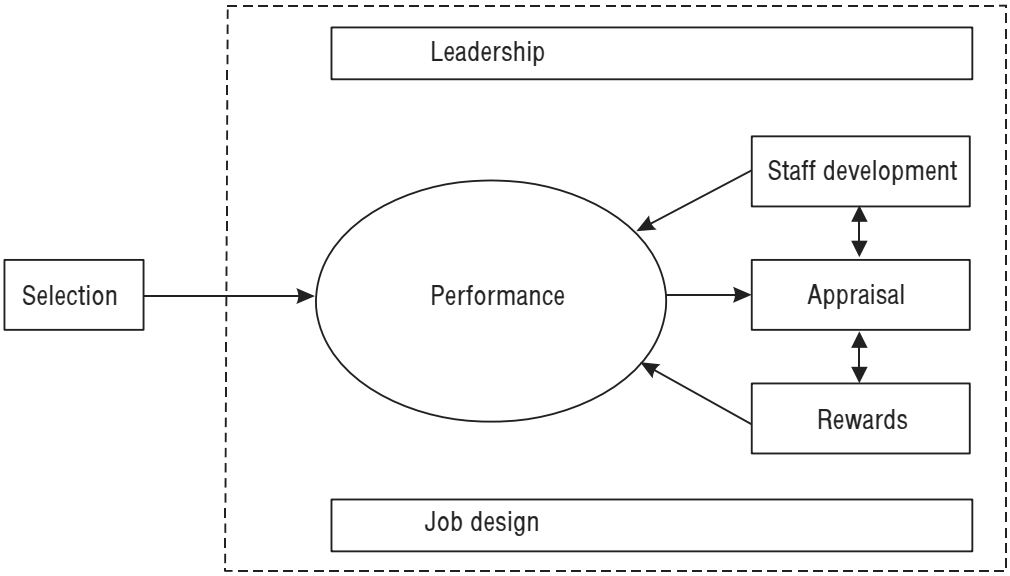
Although the overall focus of Section D of the syllabus is on performance measurement, it also encourages you to think of the contribution that performance measurement makes to an organisation's strategy and the implementation of that strategy. And one of the key roles of HRM in this context comes through aligning employees' goals and objectives with the strategic goals of an organisation.

The linkages between performance measurement and human resources issues (which are highlighted in Section D7 of the syllabus) highlight the key role that people (and therefore also HRM) play in enabling an organisation to successfully implement its strategy.

The diagram below, adapted from *Fombrun, Tichy and Devanna's* model of human resource management, is a useful way of illustrating how human resource management activities link together. Try to keep this diagram – and the linkages between the activities – in your mind as you read through this chapter, and if you have to answer a question about human resource management in your exam.

Remember also human resource management's (HRM) role in business strategy overall. *Bratton and Gold's* definition of HRM is useful here:

'HRM is a strategic approach to managing employment relations which emphasises that leveraging people's capabilities is critical to achieving sustainable competitive advantage, this being achieved through a distinctive set of integrated employment policies, programmes and practices.'



1 Human resource planning

FAST FORWARD

People are fundamental to any organisation. The **manpower planning** approach suffers from disadvantages that are similar to those of the rational planning approach to strategy. A more diagnostic approach lays more emphasis on the complexity of **human behaviour**.

Psychological contracts may be **coercive**, **calculative** or **co-operative**. The contract is perceived as coercive when the individual perceives if as unequal and exploitative. The co-operative contract exists when the individual identifies with the organisation and its goals.

People and strategic success

Bratton and Gold's definition of HRM (above) highlights that human knowledge and skills are a strategic resource for an organisation, and that they can play a vital role in achieving sustainable competitive advantage.

The **strategic significance** of having the right people working effectively increases as technology becomes more complex, knowledge work increases in importance and strategy relies more and more on the talents and creativity of human beings.

An important aspect of human resource management (HRM), therefore, consists of the various activities that attempt to ensure that the organisation has the people it needs when it needs them. These activities include **recruitment**, **retention** and, when necessary, **reduction** of headcount.

However, aspects of HRM (such as setting **performance objectives** and **reward management**) also play an important role in the performance management and control of the organisation. In this respect, HRM follows a similar control model as is used for the overall strategic and operational control of an organisation:

Step 1: Goals are set.

Step 2: Performance is measured and compared with target.

Step 3: Control measures are undertaken in order to correct any shortfall.

Step 4: Goals are adjusted in the light of experience.

However, it is crucial to recognise that these goals link to both strategic and operational success. Effective performance management requires that the strategic objectives of the organisation are broken down into layers of more and more detailed sub-objectives, so that **individual performance** can be judged against personal goals that support and link directly back to corporate strategy.

People and operational success

Recruitment and selection

Operational success relies on the ability of people to do their jobs properly. This could their ability to perform a range of activities such as being able to operate machinery correctly, use computers, manage others, or perform specific technical routines. In this respect, operational success requires the proper **recruitment** and **selection** of people with the right skills for the particular job, and the provision of further training as the requirements may dictate.

An organisation's staff are a very important resource, and they are likely to play a crucial role in an organisation achieving its strategic objectives. Therefore, it is vital that an organisation has the right number (quantity) and the right quality of staff to achieve its objectives.

In this respect, human resource planning is very important; not only in forecasting the numbers and levels of staff an organisation is likely to need, but also in deciding whether, for example, the staff should all work 'in house' or whether it might be more appropriate to outsource some functions, or to move to a more 'network' based organisation rather than using a more formally structured one.

In this way, recruitment and human resource planning play a vital role in ensuring that organisations have the necessary quantity and quality of staff to facilitate their success.

Objectives and performance targets

Staff should also have individual work **objectives** and **performance targets** (for example the number of sales calls made) and their performance against these objectives should be measured. These individual objectives and targets should be derived from department and organisation objectives. This should then mean than that, in theory, if every individual achieves their objectives then their department will achieve its objectives, and, if every department achieves its objectives then the organisation as a whole will achieve its objectives.

Two factors which play an important role in determining whether employees achieve their objectives are **management** and **motivation**. We will look at a number of aspects of employee performance management later in this chapter, but in general terms we can highlight the link between performance and motivation by reference to the following equation (after Vroom):

Performance = Ability × Motivation

(where Motivation = Desire × Commitment)

In this equation, desire is seen as enthusiasm for a task, and commitment is about putting in effort. Therefore, as well as ensuring that employees have the necessary abilities to carry out their jobs, managers also need to make sure that their staff have the desire and commitment to do so efficiently and successfully.

Staff retention

Keeping staff motivated can also help an organisation retain staff more effectively, and in doing so can reduce the costs associated with **staff turnover**. These include: the time and costs spent in advertising for and recruiting new staff; time and cost spent training new staff, and the 'learning curve' associated with new staff getting up to speed with their jobs; and the loss of organisational knowledge which occurs when individuals (particularly key employees) leave an organisation.

1.1 Rational planning and diagnostic planning

Early attempts to systematise staff planning in the 1960s and 1970s relied on a top-down, 'manpower planning' approach that fitted well with the then-popular rational planning approach to strategy. This attempted to forecast future requirements for all grades and types of staff, to analyse existing staff into the various categories required and to forecast the resulting surpluses or shortfalls. Recruitment, retention and reduction were then planned as required to meet the overall requirement. Extensive work was done on statistical tools and measures to support this method, leading to **PC-based personnel information systems** that could provide extensive detail on such matters as staff turnover, absenteeism and retention.

This approach suffered from the same disadvantages that we have seen in connection with the rational approach to strategy itself. In particular, it failed to pay sufficient attention to the **complexity of human behaviour**, emphasising systems rather than actually managing people in an effective way. As a result, a more **diagnostic** approach was developed. This attempts to look behind the raw data and to discern the factors that lead to variation in such matters as turnover, retention and absenteeism. As a result, 'planning becomes integrated into the whole process of management of the employment relationship . . . Importantly, manpower planning has a part to play in bridging the gap between the needs of the organisation (as defined by senior management) and the needs of individual employees' (*Gold*).

1.2 Human resource planning

Both the rational and diagnostic approaches are used to support an existing strategy. The use of the term 'human resource planning' to replace 'manpower planning' reflects a move to a co-ordinated bundle of HRM practices that make the links between strategy, structure and people more explicit. One important result of this change is an acknowledgement that HR practices based on high involvement, commitment and reward tend to be more effective than the alternative approach based on low pay, low job security and work intensification. However, basing HRM methods on the former approach requires that senior management accept that individual and collective knowledge and skill constitute an important element of strategic capability. Many organisations do not accept this and see their people mainly as a cost driver that must be controlled.

1.3 Psychological contracts

A **psychological contract** exists between individuals in an organisation and the organisation itself.

(a) The individual expects to derive certain benefits from membership of the organisation and is prepared to expend a certain amount of effort in return.

(b) The organisation expects the individual to fulfil certain requirements and is prepared to offer certain rewards in return.

Three types of psychological contract can be identified.

(a) **Coercive contract**. This is a contract in which the individual considers that he or she is being forced to contribute his efforts and energies involuntarily, and that the rewards he receives in return are inadequate compensation.

(b) **Calculative contract**. This is a contract, accepted **voluntarily** by the individual, in which he expects to do his job in exchange for a readily identifiable set of rewards. With such psychological contracts, motivation can only be increased if the rewards to the individual are improved. If the organisation attempts to demand greater efforts without increasing the rewards, the psychological contract will revert to a coercive one, and motivation may become negative.

(c) **Co-operative contract**. This is a contract in which the individual identifies himself with the organisation and its goals, so that he/she actively seeks to contribute further to the achievement of those goals. Motivation comes out of success at work, a sense of achievement, and self-fulfilment. The individual will probably want to share in the planning and control decisions which affect his work, and **co-operative contracts are therefore likely to occur where employees participate in decision making**.

Motivation happens when the psychological contract is viewed in the same way by the organisation and by the individual and when both parties are able to fulfil their side of the bargain: the individual agrees to work, or work well, in return for whatever rewards or satisfactions are understood as the terms of the 'contract'.

An important aspect of how employees perceive the equity of their relationship with their employers lies in the way they perceive their material rewards. *Adams* and *Salomon* suggest that this perception will always be coloured by comparisons with other people. There are many classes of person with whom comparison could be made, such as employees doing the same work, those doing different work and those working for other organisations. Comparisons will also be made between the employee's pay and the company's profits; between the employee's pay and his perception of his needs; and so on.

1.4 Recruitment and selection

The psychological contract comes into existence during the processes of recruitment and selection. The co-operative contract may be considered to be the most appropriate for highly-skilled knowledge workers, such as professionally qualified accountants, but the calculative contract is probably at least as important. The potential for the calculative contract to degenerate into a coercive contract emphasises the importance of a clear understanding of the **mutual obligations** that exist within employment. This understanding should be based on equitable recruitment and selection procedures and developed within the employment relationship.

2 Appraisal and performance management

FAST FORWARD

Appraisal has several purposes, including the improvement of individual performance; motivation; communication; selection for promotion; and the determination of individual reward.

It is also fundamental to **performance management**, forming a link between the individual and overall strategy. Within this wider setting, appraisal may be seen as having two immediate purposes:

- Judgement
- Development

2.1 Introduction

While the need for some kind of performance assessment is widely accepted, appraisal systems are frequently criticised as bureaucratic, ineffective and largely irrelevant to the work of the organisation. Partly as a response to this view, modern approaches attempt to enhance the relevance of appraisal by linking it to organisational strategy and objectives. This emphasises the use of appraisal as an **instrument of control over the workforce**. However, running in parallel with this trend is an awareness, among HR professionals at least, that appraisal systems are fundamental to the aspirational model of HRM outlined above and to the co-operative psychological contract.

2.1.1 The purpose of appraisal

Appraisal is a process that provides an analysis of a person's overall capabilities and potential. An important part of the appraisal process is assessment – collecting and reviewing data on an individual's work.

The purpose of appraisal is usually seen as the **improvement of individual performance**, but it may also be regarded as having close links to a wide range of other HR issues, including discipline, career management, identifying training and development opportunities, motivation, communication, selection for promotion and determining rewards. It is also fundamental to the notion of **performance management**, which may be regarded as trying to direct and support individual employees to work as effectively and efficiently as possible so that individual's goals are aligned with the organisation's goals and business strategy.

Within this wider view, regular appraisal interviews can be seen as serving two distinct purposes.

(a) **Judgement**: Judgemental appraisals are undertaken in order for decisions to be made about employees' pay, promotion and work responsibilities.

These decisions have to be made on the basis of judgements about the appraisee's behaviour, talent, industry and value to the organisation. Such judgements can be uncomfortable for both appraiser and appraisee and lead to hostility and aggression.

(b) **Development**: The focus of developmental appraisals is to assess employees' training and development needs.

Development appraisal can contribute to **performance improvement** by establishing individuals' development needs, progress and opportunities. This is the more supportive aspect of appraisal, but still requires the appraiser to make decisions about the appraisee.

'The tension between appraisal as a judgemental process and as a supportive development process has never been resolved and lies at the heart of most debates about the effectiveness of appraisal at work.' (Bratton & Gold)

Feedback on performance has been widely regarded as an important aspect of the participative style of management, which, in turn, has been promoted as having potential to motivate higher performance. However, the link between feedback and motivation is not simple and an important aspect of the judgemental part of appraisal is its potential to **demotivate**.

The classic study which highlighted this was carried out by *Meyer et al* at the General Electric Company (GEC) in 1965. Gold suggests that their findings are still relevant and provides a summary.

(a) Criticism often has a negative effect on motivation and performance.

(b) Praise has little effect, one way or the other.

(c) Performance improves with specific goals.

(d) Participation by the employee in goal-setting helps to produce favourable results. (Don't forget the whole point of performance management is to improve performance!)

(e) Interviews designed primarily to improve performance should not at the same time weigh salary or promotion in the balance.

(f) Coaching by managers should be day to day rather than just once a year.

More recently, *Campbell and Lee* have pointed out the ways in which discrepancies may arise between people's own opinions of their performance and those of their supervisors.

(a) **Information**. There may be disagreement over what work roles involve, standards of performance and methods to be used.

(b) **Cognition**. The complexity of behaviour and performance leads to different perceptions.

(c) **Affect**. The judgemental nature of appraisal is threatening to the appraisee and, possibly, to the appraiser.

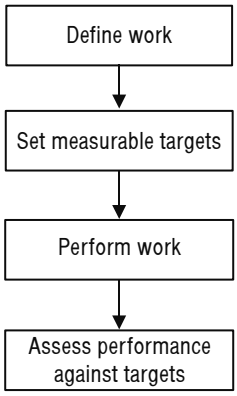
Since *Meyer et al's* study there has been a long search to find a way of appraising employees which reduces the feeling that feedback is about criticism.

One approach to mitigating the undesirable effects of judgemental appraisal has been the use of **multisource feedback**, including 360 degree appraisal, in order to provide a demonstrably more **objective** review. Such approaches have tended to be used principally for appraisal of managers. Multisource feedback can be seen as empowering for staff. It may also be seen as reinforcing for good management behaviour (since it shows managers how they are seen by others) and likely to improve the overall reliability of appraisal. However, research has shown that the effects can vary significantly.

2.1.2 Appraisal as control or development?

The last of *Meyer et al's* findings 'coaching by managers should be day to day rather than just once a year' highlights the role of managers in the **development** of their staff on a continual basis.

However, any shift towards a more developmental view of appraisal sits uncomfortably with the traditional management objectives of having a means of measuring, monitoring and controlling performance. Most appraisal schemes are still ultimately **performance control schemes**, as illustrated in the figure below.



This somewhat rigid approach, based on the drive for rationality and efficiency in organisations, highlights what *Mintzberg* has called '**machine bureaucracy**'. 'Getting organised', 'being rational' and 'achieving efficiency' are felt to be the best ways for an organisations to be structured.

This mechanistic view of organisations will, almost inevitably, mean that appraisal is seen as a control system, and will lead to employees feeling that they are being controlled by appraisal systems. However, this is unlikely to motivate employees or to generate trust, commitment and high productivity.

Employees' trust and commitment to an organisation will come about through management creating a culture that supports the long-term development of people. Assessment and appraisal could play a key part of this shift, but only if human resource managers can convince organisations that, while control remains important, development needs to play a much greater role in the appraisal process.

2.2 Performance management

FAST FORWARD

Performance management attempts to integrate HRM processes with the strategic direction and control of the organisation by incorporating agreed goals and control measures. There are several approaches to performance rating.

- Inputs and personal qualities
- Behaviour in performance
- Results and outcomes

As we mentioned at the start of the chapter, performance management systems represent the rational, efficiency-driven aspect of HRM. They attempt to integrate HRM processes with the strategic direction and control of the organisation.

Step 1 Goals are set.

Step 2 Performance is measured and compared with target.

Step 3 Control measures are undertaken in order to correct any shortfall.

Step 4 Goals are adjusted in the light of experience.

You should be familiar with this kind of management control in business organisations, where the balanced scorecard, for example, is often used as the basis for such an approach.

Performance management requires that the strategic objectives of the organisation are broken down into layers of more and more detailed sub-objectives, so that individual performance can be judged against personal goals that support and link directly back to corporate strategy. This kind of cascade of goals and objectives was discussed earlier in this Study Text.

The performance management system, though it emphasises the control aspects of appraisal must also allow for the **development** aspect of appraisal, providing for coaching and training where needed.

2.3 Performance rating

Intimately linked with the definition of goals is the creation of suitable **performance indicators**. Several different approaches have been used at various times.

2.3.1 Inputs or personal qualities

The diagnosis of **personality traits** such as loyalty, leadership and commitment really requires the use of valid psychometric methods by qualified specialists. When managers attempt to perform this task, bias, subjectivity, and other effects will tend to **undermine the reliability of the output**.

2.3.2 Results and outcomes

Where the cybernetic model is implemented, objective assessment of performance against work targets can be a **reliable method of rating**. Performance against quantified work objectives, such as number of sales calls made, can be used alongside measures of progress within competence frameworks and the overall picture can be enriched with qualitative measures and comments. A **fundamental problem** with this approach is the importance of the way in which objectives are set. Ideally, they should be agreed at the outset, but this requires a degree of understanding of the complexity and difficulty of the work situation that neither party to the appraisal may possess.

Exam focus point

This approach can be used effectively in the context of both quality management and business process re-design which we have considered earlier in this Study Text. Note the importance of measurement here, and remember that 'measure' is one of the DMAIC project phases in Six Sigma.

Also note syllabus reference D7(c) at the start of this chapter: '… determine the implications of performance measurement to quality initiatives and process re-design'. Again the syllabus is encouraging you to think of the contribution of one specific area (performance measurement) to the 'coherent whole' of strategy. The value of performance measurement – and, in turn, performance management – comes through aligning staff goals with the strategic goals of an organisation.

2.3.3 Behaviour in performance

Appraisal may be based more on how appraisees carry out their roles than on quantified measures of achievement. This is particularly relevant to managerial and professional activities such as communication, planning, leadership and problem resolution.

Behaviour-anchored rating scales (BARS) enable numerical scoring of performance at such activities. A numerical scale from, say, one to seven, is 'anchored' against careful descriptions of the kind of behaviour that would lead to a maximum or minimum score. This is the kind of scale satirised by the well known parody that has 'leaps tall buildings at a single bound' at the top and 'walks into walls' at the bottom. Appraisers then judge just where the appraisee falls against each scale.

Behavioural observation scales (BOS) are slightly different in two respects.

(a) They break aspects of behaviour down into sub categories: skill at developing people, for example might be assessed against such activities as giving praise where due, providing constructive feedback and sharing best practice.

(b) Appraisers assess the actual frequency with which such activities are performed against the frequency of opportunities to undertake them. The scores are recorded on numerical scales anchored by 'never' and 'always'.

Both BARS and BOS can enhance objectivity in appraisal and in self-appraisal.

2.4 Target selection

We have how performance management acts as a control system in measuring people's achievement against targets. However, in order to performance management to be beneficial , it is important to select the right measures or targets at the outset when setting performance goals.

We have noted the phrase 'What gets measured, get done' several times earlier in this text, in relation to corporate performance, but it is equally relevant here. If the 'wrong' performance measures or targets are set, this could lead to staff behaviour being different to that originally intended, and ultimately adversely affecting performance.

Case Study

Bankers' bonuses

In the aftermath of the global financial crisis of 2008-9, a lot of media attention has focused on bankers' bonuses. A number of investment banks link employees' annual bonuses to the amount of money they earn in that year; a short-term approach which can influence employees' decision-making.

Critics argue that the bonuses encourage short-term, risky behaviour that maximizes profits in the short term but could potentially be loss-making in the longer term.

The sub-prime mortgage crisis in the US in 2007 was a good example of this. The mortgage bond market proved extremely profitable for the banks in the short term, but once mortgage-holders started defaulting on their loans, the banks had to foreclose them, causing the loans to be written off.

During the bull market (before 2007) certain financial packages made a great deal of money for the banks in the short term, resulting in their staff receiving large bonuses. However, those same financial packages failed shortly afterwards, triggering the financial crisis.

The individual performance measures selected should be relevant to the overall objectives of the organisation. Individual's objectives must reflect the overall strategic initiatives management are taking. For example, if management is focusing on quality, performance measures must reflect this by measuring employees on their contribution to achieving quality targets.

Some employees respond well to difficult targets and are motivated to attain them. Others may find the targets daunting and feel they are unachievable, and indeed there may be valid reasons why they believe this. For example, in an economic downturn, a number of businesses are reducing the amount they are spending on their IT budgets. Therefore if a salesperson in an IT company was given a target of increasing sales 25% on the prior year they would appear to be justified in thinking this target is unachievable.

Equally, care must be taken when using certain measures, for instance numbers of sales, as the basis for rewarding employees. As an example, here are some possible negative consequences of using sales numbers as a primary performance measure:

- The salesman might offer potential customers large discounts in order to make the sale (but with the effect that the company makes a loss on the sale)
- The salesman is concerned solely with the immediate sale, which may lead to poor after-sales service, low customer satisfaction levels and poor customer retention
- The salesman might use expensive promotions that actually generate less in sales value than they cost, but which allow the salesman to register a number of sales
- Once a salesman has reached his target figure for a period he might look to defer future sales into the next period

It may be better to use a balanced mix of targets – for example, setting customer care and customer profitability targets as well as the number of sales made.

It is also important to make sure whatever goals are set that these are capable of being controlled by the individual, otherwise the individual is likely to become demotivated.

In addition, if processes are being redesigned, and job roles are changing, performance measures must be adapted to reflect the new jobs and responsibilities.

However, it is important that people are not given too many objectives and targets. There is a danger that people could become overwhelmed by the sheer number of goals they are expected to meet, but with the result that they do not know what their priorities are or what aspects of their work they should give most attention to.

Finally, it is useful to remember the acronym SMART when setting performance targets: are the targets specific, measurable, achievable, relevant and time-bounded?

3 Reward management

FAST FORWARD

Employment is an economic relationship: labour is exchanged for reward. **Extrinsic rewards** derive from job context and include pay and benefits. **Intrinsic rewards** derive from job content and satisfy higher level needs. reward interacts with many other aspects of the organisation. Reward policy must recognise these interactions, the economic relationship and the psychological contract.

There are five elements to Bratton's model of reward management.

- The strategic perspective
- Reward objectives
- Reward options
- Reward techniques
- Reward competitiveness

Employment is fundamentally an economic relationship: the employee works as directed by the employer and, in exchange, the employer provides reward. The relationship inevitably generates a degree of tension between the parties, since it requires **co-operation** if it is to function, but it is also likely to give rise to **conflict** since the employee's reward equates exactly to a cost for the employer.

Key term

Reward is 'all of the monetary, non-monetary and psychological payments that an organisation provides for its employees in exchange for the work they perform'. *Bratton*

Rewards may be seen as **extrinsic** or **intrinsic**.

(a) **Extrinsic rewards** derive from the **job context**: such extrinsic rewards include pay and other material benefits as well as matters such as working conditions and management style.

(b) **Intrinsic rewards** derive from **job content** and satisfy higher-level needs such as those for self esteem and personal development.

The organisation's reward system is based on these two types of reward and also includes the policies and processes involved in providing them.

Reward is a fundamental aspect of HRM and of the way the organisation functions. It interacts with many other systems, objectives and activities.

- It should support the overall strategy.
- It is a vital part of the psychological contract.
- It influences the success of recruitment and retention policies.
- It must conform with law.
- It consumes resources and must be affordable
- It affects motivation and performance management.
- It must be administered efficiently and correctly.

The dual nature of reward mentioned earlier – a benefit for the employee, a cost for the employer – means that the parties in the relationship have divergent views of its purposes and extent. Employees see reward as fundamental to their standard of living: inflation, comparisons with others and rising expectations put upward pressure on their notion of what its proper level should be. Employers, on the other hand, seek

both to control their employment costs and to use the reward system to influence such matters as productivity, recruitment, retention and change.

Case Study

Google's Security Reward Programme

In the enigmatic world of cybersecurity 'white hat' hackers work with corporations to find (and then hopefully fix) flaws in their computer systems to try to fend off 'black hat' hackers who try to take advantage of any vulnerabilities in a company's systems.

Although some companies threaten legal action against any hackers, others work closely with hackers and even pay and reward them when they find flaws in a system. Google is one such company which works with hackers to promote security in its Google Web applications.

Google's reward system offers financial compensation to hackers and security researchers who find flaws in products like Google, YouTube and Blogger. The amount of compensation will depend on the severity of the potential security breach.

In a company blog, the Google Security Team said the base reward for finding a bug starts at $500, while 'unusually clever' or severe flaws can be rewarded by over $3,000, with the amount being decided by a panel of Google security experts.

However, the company also acknowledges that some researchers are not compelled by money, and simply enjoy the recognition that comes from finding a security flaw. In such instances, the researchers are thanked publicly on a section of the website entitled 'We Thank You.'

3.1 A reward management model

The effective reward system should facilitate both the **organisation's strategic goals** and also the goals of **individual employees**.

Within this, an organisation has to make three basic decisions about monetary reward:

(a) How much to pay
(b) Whether monetary rewards should be paid on an individual, group or collective basis
(c) How much emphasis to place on monetary reward as part of the total employment relationship.

However, there is no single reward system that fits all organisations.

Bratton proposes a model of reward management based on five elements.

(a) The **strategic perspective**
(b) Reward **objectives**
(c) Reward **options**
(d) Reward **techniques**
(e) Reward **competitiveness**

3.2 The strategic perspective

Knowledge brought forward from earlier studies

You will recall from your studies for paper F1 that contingency theory as applied to management suggests that techniques used should be appropriate to the circumstances they are intended to deal with: there is unlikely to be a single best option that is appropriate to any context.

A **contingency approach to reward** accepts that the organisation's strategy is a fundamental influence on its reward system and that the reward system should support the chosen strategy.

Thus, for example, cost leadership and differentiation based on service will have very different implications for reward strategy (and, indeed, for other aspects of HRM). This is because each strategy needs a reward which is appropriate for it. The closer the alignment between the reward system and the strategic context, the more effective the organisation. The following example illustrates this.

3.2.1 Example of strategic perspective

Bratton & Gold in *Human Resource Management* provide an illustration of how two different businesses with different generic strategies have completely different rewards systems.

The first business produces high-quality, custom-made machine tools for a high-tech industry. The production process is complex and workers are highly-skilled, capable of performing various different jobs. The workers all work in self-managed teams.

In contrast to the industry norm, these skilled machine operators are not paid an hourly wage, but instead they receive a base salary which is increased as they learn new skills. The employees receive an excellent benefits package and profit-sharing bonuses. Not surprisingly, staff turnover is very low.

Labour cost at this company are above the industry average, but the company is successful nonetheless because its reward system is aligned to its strategy. It is following a differentiation strategy, and its reward system encourages commitment from its staff. The system also encourages higher productivity than its competitors, because of the increased functional flexibility which having multi-skilled staff offers. The incentive of their salary increasing as they learn new skills encourages the staff to become multi-skilled. In turn having a multi-skilled workforce reduces machine downtime and scrap rates. Because the teams are self-managed, the company does not need to employ supervisors or quality inspectors (the teams self-regulate their own quality). Because staff turnover is low, recruitment and training costs are similarly low.

Therefore although the company's labour cost are above the industry average, these additional costs deliver benefits elsewhere and support its differentiation strategy.

Against this, *Bratton & Gold* contrast a production process producing frozen food. The work is low-skilled and monotonous, and requires little employee commitment. The production line is automated, and managers not workers control the speed of the line.

The workers are paid an hourly wage marginally above the minimum wage, and there are no additional payments or benefits. Not surprisingly, labour turnover is very high.

However, again this company is successful, because its reward system is aligned to its strategy. It is following a cost leadership strategy and so low-cost production is essential. The high labour turnover is not a problem because unskilled workers are easy to recruit, and training costs are low. Therefore, the company's policy of paying near-minimum wage only is appropriate to a strategy in which little commitment or loyalty is required from the employees.

Exam focus point

It is important that reward systems are aligned to an organisation's objectives and its critical success factors, as well as to the job in question. As the example from Bratton & Gold (above) illustrates, if the organisation has highly-skilled employees who are crucial to its competitive success, then the reward system should be designed to try to retain such staff.

However, it is also important to recognise the impact that implementing a reward system can have on employees' day-to-day performance. Once again, the adage 'What gets measured, gets done' could be relevant here. In particular, if a reward system is based primarily around individual performance, then staff will focus on their own individual results and teamwork could suffer as a result.

In your exam, a case study scenario may describe a reward management system which is not appropriate for the context in which it is being used, and you may need to evaluate the system and the impact it could have on an organisation's performance.

Similarly, if an organisation is looking to re-design jobs as part of a change initiative (for example, to introduce new technologies), you may be asked to consider what impact this could have on the reward system.

3.3 Reward objectives

The reward system should pursue three behavioural objectives.

(a) It should support **recruitment and retention**.

(b) It should **motivate** employees to high levels of **performance**. This motivation may, in turn, develop into commitment and a sense of belonging, but these do not result directly from the reward system.

(c) It should promote **compliance** with workplace rules and expectations.

3.3.1 Recruitment and retention

The reward system should support **recruitment and retention**. Several influences are important here. Employees will certainly assess their pay and material benefits against what they believe to be the prevailing market rate. They will also take account of disadvantageous factors, such as unpleasant working conditions in their assessment of the degree of equity their reward achieves for them. Finally, they will be very sensitive to comparisons with the rewards achieved by other employees of the same organisation. Failure to provide a significant degree of satisfaction of these concerns will lead to enhanced recruitment costs.

3.3.2 Motivation

The reward system should **motivate employees** to high levels of performance.

Knowledge brought forward from earlier studies

You will recall from your studies for Paper F1 that motivation has been the subject of much research and many theories. It is a very complex topic and impossible to sum up in a few words. However, we can say with reasonable confidence that the relationship between reward and motivation is far from simple and that there is no more than a very limited degree of correlation between pay levels and work performance.

Despite the apparently tenuous link between performance and level of pay, traditional pay systems have featured incentives intended to improve performance; also there has been a tendency for British and North American companies to adopt systems of individual performance related pay intended to support overall organisational objectives rather than simply to incentivise individual productivity.

3.3.3 Compliance

The reward system should **promote compliance** with workplace rules and expectations. The psychological contract is complex and has many features, including material rewards. The incentives included in the reward system play an important role in **signalling to employees the behaviour that the organisation values**. It is also an important contributor to the way employees perceive the organisation and their relationship with it.

3.4 Reward options

Material reward may be divided into three categories.

(a) **Base pay** is a simply established reward for the time spent working.

(b) **Performance pay** is normally added to base pay and is intended to reward performance learning or experience.

(c) **Indirect pay** is made up of benefits such as health insurance, child care and so on and is provided in addition to base pay or performance pay.

3.4.1 Base pay

Base pay is usually related to the value of the job, as established by a simple estimate, a scheme of **job evaluation** or reference to prevailing employment market conditions. It is **easy to administer** and shows a **commitment by the employer** to the employee that goes beyond simple compensation for work done. A distinction may be made between hourly or weekly paid **wages** and monthly paid **salary**. The latter is normally expressed as an annual rate.

3.4.2 Performance pay

Performance pay takes many forms, including **commission**, **merit pay** and **piecework pay**.

Performance pay differs from base pay in that it can be designed to support **team working** and **commitment to organisational goals**. Team working is supported by a system of bonuses based on team rather than individual performance. The size of the team may vary from a small work group to a complete office or factory. Overall organisational performance is supported by various schemes of **profit sharing**, including those that make payments into pension funds or purchase shares in the employing company.

However, the extent to which an organisation emphasises performance pay will depend on whether this type of reward supports its strategy.

3.4.3 Indirect pay

Indirect pay is often called 'employee benefits'.

Benefits can form a valuable component of the total reward package. They can be designed so as to resemble either base pay or, to some extent, performance pay. A benefit resembling base pay, for example, would be use of a subsidised staff canteen, whereas the common practice of rewarding high-performing sales staff with holiday packages or superior cars looks more like performance pay. Again though, the extent to which an organisation offers indirect pay should reflect whether this type of reward supports its strategy.

There is a trend towards a **cafeteria** approach to benefits. Employees select the benefits they require from a costed menu up to the total value they are awarded. This means that employees' benefits are likely to match their needs and be more highly valued as a result.

Types of indirect pay include:

- Private health care
- Private dental care
- Pension plans
- Car allowance
- Discounted insurance
- Extra vacation days
- Child care
- Shopping/entertainment vouchers

3.4.4 Share options

One further type of reward option we should consider is share options (or employee share option plans (ESOP)).

Share options give directors - and possibly other managers and staff - the right to purchase shares at a specified exercise price after a specified time period in the future.

The options will normally have an exercise price that is equal to, or slightly higher than, the market price on the date that the options are granted. The time period (vesting period) that must pass before the options can be exercised is generally a few years. If the director or employee leaves during that period the options will lapse.

In this respect, share options can be seen as a way of rewarding directors and employees for remaining with a company. In turn, this could mean that they are concerned with the longer-term success of the company, rather than simply focusing on short term performance.

Share options will generally be exercisable on a specific date at the end of the vesting period. In the UK, the Corporate Governance Code states that shares granted, or other forms of remuneration, should not

vest or be exercisable in less than three years. Directors should be encouraged to hold their shares for a further period after vesting or exercise. If directors or employees are granted a number of options in one package, these options should not all be able to be first exercised at the same date.

If the price of the shares rises so that it exceeds the exercise price by the time the options can be exercised, the directors will be able to purchase shares at lower than their market value, which is clearly advantageous for the directors exercising the options. Share options can therefore be used to **align management and shareholder interests**, because the directors have an interest in ensuring that the share price increases over time such that it is higher than the exercise price when the options come to be exercised. This is particularly relevant for options held for a long time when value is dependent on long-term performance.

However, the main danger with share options is that they could give directors an incentive to manipulate the share price if a large number of options are due to be exercised.

Alternatively, granting options could be used as a way of encouraging cautious (or risk averse) directors to take positive action to increase the value of the company.

Again, this could help align the interests of directors and shareholders, if the directors would not otherwise be prepared to accept the same risks which the shareholders would tolerate by themselves.

The upside risk of share options is unlimited – because there is no restriction on how much the share price can exceed the exercise price. However, there is no corresponding downside risk for the directors. If the share price is less than the exercise price, the intrinsic value of options will be zero and the options will lapse. In these circumstances it will make no difference how far the share price is below the exercise price.

If directors hold options, the value of their options will rise if a strategic investment succeeds and they will not suffer any loss on their options if the investment fails. Therefore, granting the options might encourage the directors to take actions they would not otherwise be prepared to take.

3.4.5 Risk, reward and performance

Although we have noted that share options could encourage cautious directors to be less cautious, it is equally important that reward structures do not encourage directors and managers to take excessive risks.

Since the collapse of Northern Rock bank (in 2007), and throughout the ensuing financial crisis, there has been much political and media interest in the issue of reward management. This has focused on the role which reward structures were perceived to have played in encouraging excessive risk-taking in the financial services sector and, in turn, what role this risk-taking played in the problems which have affected the sector.

Additionally, there has been increasing concern about the extent to which the level of remuneration given to senior executives reflects (or does not reflect) the value their companies are generating for their shareholders.

In the UK, in a speech to the High Pay Commission and the Institute for Public Policy Research (January 2012) the Labour MP, Chuka Umunna, highlighted the extent to which the value of incentive packages for executives has risen disproportionately to improvements in company performance. In the first decade of the 21st century, FTSE 350 firms increased their pre-tax profits by 50% and their earnings per share by 73%, while year end share prices fell by 5%. Over the same period, bonuses for executives in these companies rose by 187% and long term incentive plans by 254%.

And, as Mr Umunna pointed out, in the worst cases 'you end up with perverse incentive structures which encourage the wrong kind of decision-making, as the failures in many financial institutions in the wake of the 2008/9 financial crises so clearly illustrated.'

Another issue which is causing increasing anger and frustration amongst shareholders is the level of bonuses being awarded by companies that were rescued by taxpayer funds.

This is perhaps symptomatic of a potentially wider issue: the extent to which companies are perceived to be **rewarding failure**. The senior executives of failed companies often walk away with significant payouts, whilst large numbers of other mangers and staff lose their jobs and their incomes.

Critics have argued that if companies are serious about improving performance, then they need to stop rewarding failure.

Case Study

Rewards for failure

In 2009, Carol Bartz was appointed CEO of Yahoo, and was brought in to help turn the company around.

According to Equilar, a firm which researches executive compensation, she was given a signing-on package worth over $47.2 million in cash and stock options, and she received pay worth an additional $11.9 million in 2010.

However, Bartz's plans to revive the beleaguered search company failed to improve its results, and in September 2010 Yahoo's board fired her.

Nonethess, she walked away with a large allocation of deeply discounted stock options as well as cash severance worth about $5.2 million.

At around the same time, Lloyd Doggett, a senior member of the 'Ways and Means' Committee in the US House of Representatives, said that the size of the severance packages senior executives were receiving was 'outrageous.' 'The whole concept that the only way to get rid of bad management is to buy them off is fundamentally wrong' he said.

3.5 Reward techniques

Reward systems must attempt to achieve **internal equity.** This means when employees make comparisons between their own rewards and those of others, they conclude that the overall structure is fair. If internal equity is not achieved, employees will conclude that the psychological contract has been breached and their behaviour will be affected. They may become less co-operative or they may leave.

Three techniques contribute to the establishment of internal equity.

3.5.1 Job analysis

Job analysis is the 'systematic process of collecting and evaluating information about the tasks, responsibilities and the context of a specific job' (*Bratton*). The data collected during job analysis identifies the major tasks performed by the job-holder, the outcomes that are expected, and how the job links to other jobs in the organisation. This date is used to prepare job descriptions, job specifications and job performance standards. (Note that in practice the terms job description and job specification may be used loosely and a *job specification* is often referred to as a *person specification.*)

This information is useful in itself for a range of HRM purposes, including recruitment and training needs analysis, and it also forms the basis for **job evaluation**.

Note also that job analysis is an important aspect of quality and process re-design initiatives and is almost certainly required when e-business methods are adopted.

3.5.2 Job evaluation

Job evaluation is 'a systematic process designed to determine the relative worth of jobs within a single work organisation' (*Bratton*). The process depends on a series of subjective judgements and may be influenced by organisational politics and personal preconceptions. In particular, it can be difficult to separate the nature of the job from the qualities of the current incumbent.

Evaluation may be carried out in four ways.

(a) **Ranking** simply requires the arrangement of existing jobs into a hierarchy of relative value to the organisation.

(b) **Job-grading** starts with the definition of a suitable structure of grades in a hierarchy. Definitions are based on requirements for skill, knowledge and experience. Each job in the organisation is then allocated to an appropriate grade.

(c) **Factor comparison** requires the allocation of monetary value to the various factors making up the content of a suitable range of benchmark jobs. This method is complex and cumbersome.

(d) **Points rating** is similar to factor comparison, but uses points rather than monetary units to assess the elements of job content.

Whichever method is used, the end point of a job evaluation exercise is the production of a **hierarchy of jobs** in terms of their elative value to the organisation. The **Pay structure** is then set by reference to this hierarchy of jobs.

3.5.3 Performance appraisal

Performance appraisal has already been discussed in detail.

3.6 Reward competitiveness

The level of rewards an organisation offers will inevitably be subject to factors external to the organisation.

(a) The **labour market** as it exists locally, nationally and perhaps globally, as relevant to the organisation's circumstances

(b) The pressure for **cost efficiency** in the relevant industry or sector

(c) **Legislation** such as the level of any applicable minimum wage

3.7 Setting reward levels in practice

Many companies use commercially available **survey data** to guide the overall level of the rewards they offer. This approach can be combined with the reward techniques outlined above.

An element of **flexibility** must be incorporated to reflect both the different levels of skill, knowledge and experience deployed by people doing the same work and their effectiveness in doing it.

Governments influence pay levels by means other than outright legislative prescription.

(a) They affect the demand for labour by being major employers in their own right.

(b) They can affect the supply of labour by, for example, setting down minimum age or qualification requirements for certain jobs.

(c) Their fiscal and monetary policies can lead them to exert downward pressure on public sector wage rates.

3.7.1 Problems with reward systems

Reward systems are subject to a range of pressures that influence their working and affect the psychological contract.

(a) Where **trade unions** are weak, as in the UK, employers have more freedom to introduce performance related pay.

(b) **Economic conditions** may prevent employers from funding the rewards they might wish to provide in order to improve commitment. The result would be disappointment and dissatisfaction.

(c) Performance pay systems are prone to **subjective and inconsistent** judgement about merit; this will discredit them in the eyes of the employees.

Case Study

Why reward systems fail to deliver IT transformation

(A short article on the technology website www.zdnet.com looks at some examples of failings in reward systems in relation to IT projects.)

An organisation had a plan for an enterprise-wide service-oriented approach which was well thought through and should have worked well. But when the project was implemented it turned out to be a failure. One of the reasons for the failure was the way IT professionals and managers were rewarded, highlighting the importance of rewarding the right behaviour in any IT-driven transformational project.

The article highlights four common misconceptions in reward systems:

- **Rewarding programmers for lines of code produced, or based on program complexity**. This type of reward system will encourage programmers to develop more complex or difficult programmes without considering what the organisation needs. It may not need – or want – complex or difficult programmes.
- **Rewarding developers based on long hours worked.** There is a danger with this kind of measure that **quantity** gets rewarded rather than **quality**. A programmer may end up working very long days simply because they did a poor job of estimation and planning up front, or the long hours could be an indication that there is a lot of code-rewriting going on, to correct mistakes which the programmer had made initially.
- **Rewards based on salary surveys.** Basing IT salaries on industry averages means that some of the competitor companies in the market are paying more (although some are also paying less). However, if you simply pay an average rate as soon as the economy becomes more buoyant, and demand for workers heats up, programmers will defect and move to higher-paying rival companies.
- **Rewarding people based on the number of problem statements they close.** This is problematic because some people will solve multiple problems with one problem statement, while others will open and solve as many problem statements as they can to inflate the number of problems solved.

(Source: Joe McKendrick, (2010) Why reward systems fail to deliver IT transformation, *www.zdnet.com*)

3.8 Relationship of reward systems to quality initiatives, process redesign and e-business opportunities

The value of performance measurement come from aligning individual staff goals with the strategic goals of the organisation.

Quality initiatives

Clearly, rewards should be linked to the desired outcomes of the quality process. If a call centre is seeking to improve the quality of the service provided to customers it would set objectives such as calls answered in two minutes or customer satisfaction scores above 80%. These objectives would translate into individual objectives when agreeing employee targets with employees during the appraisal process.

When the appraisal takes place and performance is assessed it would include these targets. Depending on the outcome, promotion may be offered or further training and development may be recommended. However, it is not always possible to link pay or rewards to the achievement of targets as so much also depends on the resources available in the organisation.

Process redesign

Redesigning processes can involve change to people's jobs or organisational structures, and new high-level objectives may be set. These changes will need to be reflected in the individual's personal objectives and in the appraisal process.

Equally, managers should also recognise that employees may be resistant to change, so the reward system needs to provide sufficient incentive to encourage them to support the changes. The successful implementation of any process redesign depends on **acceptance by the staff and managers** who will have to operate the new process. Rewards available for advocating the new process, or successfully implementing it could act as a significant incentive to employees to accept the new process.

Positive or negative reinforcement could be used here: with positive rewards (for example, pay increases) being offered to staff who support the change, but sanctions (for example, a pay freeze) for people who continue to resist the new process.

Although they can be financial, the rewards and incentives offered to staff need not necessarily be in the form of extra pay: for example, employees who have played an important role in the process redesign could have their holiday entitlement increased. Nonetheless, people's contributions to the redesign should be recognised explicitly at appraisal time.

Equally, however, once the process redesign has been implemented, the organisation should consider ways of encouraging individuals to reach ever higher levels of performance, so individual's goals should continue to be challenging although still achievable.

Harnessing of e-business opportunities

E-business involves business processes spanning the entire value chain: electronic purchasing and supply chain management, processing orders electronically, handling customer service, and cooperating with business partners. The reward system can ensure individual objectives reflect the strategic and tactical aims of the organization in developing new processes and technologies.

3.9 Benefits and adverse consequences of linking reward schemes to performance measurement

3.9.1 Benefits for the organisation

It is clear how objectives set at higher levels are being translated into individual goals thereby linking strategy to outcomes for the individual. This is explained in Bratton's model where the strategic perspective explains that the reward system should support strategy, and the two should be closely aligned.

A reward scheme should also provide an incentive to achieve a good level of performance, and the existence of a reward scheme can help to both attract, and retain, employees who are making favourable contributions to the running of the organisation.

A reward scheme can also help emphasis the key performance indicators of the business, if these are incorporated into the performance measures which underpin the scheme. This will help reinforce to employees the key aspects of their performance which contribute most to the organisation's success.

3.9.2 Drawbacks for the organisation

However, the financial crisis of 2007-8 has showed the dangers of linking reward schemes to performance measures if those **performance measures are poorly designed**. We highlighted this in the case study earlier in the chapter, suggesting that bank bonuses encouraged a focus on short-term decision making and risk taking.

A European Commission report into the financial crisis suggested that 'Excessive risk taking in the financial services industry…has contributed to the failure of financial undertakings…Whilst not the main cause of the financial crises that unfolded…there is widespread consensus that inappropriate remuneration practices…also induced excessive risk taking.'

In this case, there appears to be a direct link between the profit measures (short term profitability) and the **risk appetite of employees**. Employees were prepared to take greater risks in the hope of making higher profits and therefore getting larger bonuses.

However, a second potential drawback for an organisation arises if it is unable to reward individuals for good performance (for instance, due to a shortage of funds) because then the link between reward and motivation may break down.

3.9.3 Benefits and drawbacks for the individual

If an individual's goals are linked to the objectives of the organisation, then it is clear to the individual how their performance is measured and why their goals are set as they are. However, on occasions there may be a problem in linking individual rewards directly to organisational outcomes, especially if the latter are uncertain.

Another drawback is that, in striving to meet targets, some individuals may become cautious and reluctant to take risks given they have a stake in the outcome. Conversely, other individuals may choose riskier behavior especially if reward is linked to say revenue generation or levels of output.

3.9.4 Risk and reward

Overall, a reward system needs achieve a balance between risk and reward:

Recruitment and retention: Rewards need to be structured in such a way that they attract and retain key talent. If an organisation's reward system is not deemed to be attractive, then there is a risk it will not be able to attract or retain the staff it needs to be successful.

Alignment with business strategy and culture: If reward strategy is not aligned to organisational goals then there is a risk the organisation will not achieve those goals. Equally the reward system needs to encourage styles of behaviour that fit with the organisation's culture.

Reputation/brand: If the organisation's reward systems generate negative press coverage (as has been the case with some of banks in the recent financial crisis) there is a risk this will adversely affect the organisation's reputation or brand.

4 Accountability

FAST FORWARD

Hard accountability involves consideration of financial and quantitative information. **Soft accountability** considers the human input to the system and its role in shaping, evaluating and implementing goals.

4.1 Agency theory

Key term

Agency theory considers the relationship between a principal (such as the owners of a company, the shareholders) and an agent (such as an organisation's managers and employees).

George Brown, the examiner of an equivalent paper to P5 under a previous syllabus, explains this well (with BPP's emphasis):

> 'The problem is ''how can the agent be motivated and monitored?''. The motivation may be achieved by the payment of ….a reward. The monitoring may be through the submission of regular accounts… (as a measure of performance). The key requirements are that:
>
> (a) The **agent** must have to **give an account of performance** to the principal; and
> (b) The **principal** must be able to **hold the agent to account**.'
>
> ('Accountability and performance measurement', *ACCA Student's Newsletter,* August 1998).

In the corporate sector, the identification of agents (managers and employees) and principals (shareholders) is comparatively straightforward. In public sector and non-profit seeking organisations

there are likely to be multiple principals (such as the Government and students in the Higher Education sector), making identification more difficult.

The theory makes certain **assumptions about individuals as agents**, listed in Wilson and Chua, *Managerial Accounting: Method and Meaning* (1993) as follows.

(a) They behave rationally in seeking to maximise their own utility.

(b) They seek financial and non-financial rewards.

(c) They tend to be risk-averse and, hence, reluctant to innovate.

(d) Their individual interests will not always coincide with those of their principals.

(e) They prefer leisure to hard work.

(f) They have greater knowledge about their operating performance and actions than is available to their principals.

Key issues in agency theory are **attitudes to risk** and the **observability of effort**.

(a) Conventional management accounting assumes that principals protect agents from risk – it only makes managers responsible for things they can control. Agency theory suggests that if principals are risk averse then they should share the risk with agents and this can increase the utility of both parties. Making a large part of an executive's potential reward subject to some profit target is a simple example of such a contract.

(b) The principal may find it difficult to observe the agent's efforts. Alternatively the principal may not be able to evaluate the effort because he does not possess the information on which the decision to expend that much effort was based.

Accountability requires and assumes that the agent (manager or employee) is motivated and monitored to do what the principal wants them to do. The reward system has to incorporate the means of **monitoring** (performance measurement) and **motivating** the agent to do what is required of them. If the reward system aligns the agent's goals with those of the organisation (ie, it promotes goal congruence) it should be successful in monitoring and motivating the agent to perform as desired. The problem is ensuring that the agent is motivated and monitored, or else they may not do what is required.

Another potential complication comes from identifying who the principal is.

In **commercial organisations**, this is relatively straightforward: the principals are the shareholders, and the agents are the management and staff of the organisation. However, in the **public sector and not for-profit** organisations this relationship can be more complex because there are often multiple principals.

For example, in the public health sector (hospitals) principals may include the government (as providers of funds) and patients (as recipients of healthcare). The agents are the hospital management, surgeons and staff. The achievement of accountability (holding the agent to account) is an important aspect of the relationship. However, this can be difficult if the principals have differing aims: for example, is the hospital primarily judged according to the quality of its medical treatment (patient as principle), or how well it stays within budget (government as principal). Moreover any such uncertainty can lead to uncertainty over which are the key performance measures for an organisation to focus on.

4.1.1 Pressure for short term results

Another difficulty that managers (agents) can sometimes face is how to achieve a target level of result without increasing the level of risk they are prepared to take. This can particularly be the case if managers are under pressure to achieve short term performance targets.

For example, if a manager is being assessed against an annual revenue target, and they know they will not achieve that target if they continue with their current (relatively low risk strategy), then the manager may consider alternative strategies (which may be higher risk, but have the potential for greater rewards) in order to try to achieve the revenue target.

4.2 Accounting and accountability

Accountancy via the use of **management control systems** (budgeting and standard costing) has a key role to play in the development of regimes of accountability. Such control systems provide two forms of accountability.

4.2.1 Hard accountability

This involves consideration of financial and quantitative information and covers three areas.

(a) **Counting** (that is, **converting activities and outcomes into numbers**), such as the number and type of warranty claims

(b) **Ensuring that the numbers are accounted for** (in other words, **reporting on activities and outcomes** and providing a discussion of **how and why they have occurred**). The examiner's example is to report 'we achieved 20% new customers though promising a just-in-time delivery of orders (**how**) and 80% of complaints related to an inability to meet the JIT timetable because of internal failure of the 'pull-through' system due to lack of a synchronised manufacturing system (**why**)'.

(c) **Being held accountable for** accounting and also for the events and circumstances leading to the records, such as being held responsible for failing to meet unrealistic production schedules and for failing to take action such as implementing overtime working to try and meet the schedules.

4.2.2 Soft accountability

This involves consideration of the human input to the system and its role in shaping, evaluating and implementing goals**. Self accountability** achieved by employees, for example, will be affected by financial and non-financial rewards offered, training and developments programmes and the way in which employees are grouped in order to achieve specific business outcomes (such as multidisciplinary project teams and quality circles).

4.2.3 Implementing accountability

George Brown suggests that **accountability requires** the implementation of the following **steps**.

(a) 'Choose and make public a range of accepted performance measures;
(b) Ensure that the benefits of the performance measures have been identified;
(c) Identify and understand possible problems in the use of performance measures;
(d) Consider ways in which to counter perceived problems in the use of performance measures.'

4.3 Accountability and control

In Section 4.2 above we introduced the idea that management control systems have an important role to play in developing accountability, and we will now look at this idea of accountability and control further.

There are three broad categories of control mechanism which companies can use to cope with the problem of organisational control:

- Action (or behavioural) control
- Personnel and cultural control
- Results (or output) control.

4.3.1 Action control

The aim of action controls is to ensure that only those actions which are desirable occur, and actions which are undesirable do not occur.

Action accountability involves defining actions that are acceptable or unacceptable, observing the actions and then rewarding acceptable (or punishing unacceptable) actions. In this way, action accountability sets limits on employee behaviour. For example, setting budgets for different categories of expenditure makes

the budget-holder accountable if they exceed the budget limit, such that they have to explain or justify their actions. In this way, budgets, acting as an action control, should help to prevent excess expenditure which is not in the best interests of the organisation.

4.3.2 Personnel control

The aim of personnel controls is to help employees do a good job, by ensuring they have the capabilities and the resources needed to do that job.

In this respect, we can highlight three major methods of implementing personnel controls:

- **Recruitment and selection** (finding the right people to do a specified job)
- **Training and job design** (where job design includes making sure that jobs are not too complex, onerous or badly designed so that employees do not know what is expected of them)
- **Providing the necessary resources** for people to do their jobs

Cultural controls represent a set of values or social norms that are shared by members of an organsiation and influence their actions. These could include codes of conduct, or group based rewards schemes. Part of the logic behind group based reward schemes (such as profit sharing schemes) is that they encourage employees to work together to enhance the collective achievements of the group.

4.3.3 Results control

The focus of results control is on collecting and reporting information about the outcomes of work effort.

Drury identifies four stages of results control:

(a) Establish results measures (performance measures) that maximise desirable behaviour or minimise undesirable behaviour

(b) Establish performance targets for those measures

(c) Measuring performance

(d) Providing rewards or punishment based on performance

The key value of results controls for organisations is that they identify deviations from desired performance measures (eg variances to budget) and then allow corrective actions to be taken to try to improve performance. (In this respect, results controls resemble feedback controls which we looked at in Chapter 7 earlier in this Study text.)

However, as Drury points out, results measures work most effectively where the individuals whose behaviours are being controlled are able to control and influence the results. If uncontrollable factors cannot be separated from controllable factors, then results control measures are unlikely to provide useful information for evaluating the actions taken by individuals.

Moreover, if the outcomes of desirable behaviours are offset by the impact of uncontrollable factors, then results measures will lose any motivational impact and create the impression that they are unfair.

For example, a sales manager's target may be to increase annual sales by a given percentage, continuing the pattern of growth experienced in previous years. However, if during the course of the current year, a new rival company joins the market, and overall economic growth slows down significantly, the sales manager is unlikely to achieve their performance target. However, this failure to achieve the target does not necessarily reflect any undesirable behaviour on the part of the sales manager, or any decline in their own performance. Rather, it is likely to be due to the new, uncontrollable factors that have emerged.

Exam focus point

We looked at the idea of controllability in Chapter 5 earlier in this Study Text, and we highlighted the key principle that managers should only be responsible for those aspects of performance they can control.

It is important to remember that principle when designing reward systems.

One of the case study scenarios questions in the December 2011 highlighted a situation in which managers were unhappy with their remuneration. One of the main reasons for this was that their bonuses were dependent on achieving performance targets (performing above budget) but they had no control over a number of the factors which affected whether or not their shops reached their budget targets.

Part of the question requirement asked students to suggest suitable improvements to the company's reward system for the shop managers. One such improvement was the need to focus on controllable aspects of performance.

5 Benefits and problems of performance measurement

FAST FORWARD

Berry, Broadbent and Otley have described various **problems and benefits of performance measurement.**

5.1 Benefits of performance measures

Berry, Broadbent and Otley provide the following list.

(a) Clarify the objectives of the organisation
(b) Develop agreed measures of activity
(c) Greater understanding of processes
(d) Facilitate comparison of performance in different organisations
(e) Facilitate the setting of targets for the organisation and its managers
(f) Promote accountability of the organisation to its stakeholders

5.2 Problems

Here is their list of possible problems accompanying the use of performance measures.

(a) **Tunnel vision** (undue focus on performance measures to the detriment of other areas). For example, if a performance measure for an accountancy firm is the staff utilisation ratio in terms of chargeable hours as a proportion of total hours, this may lead to an insufficient amount of time being spent on staff development or training.

(b) **Sub-optimisation** (focus on some objectives so that others are not achieved). For example, if an audit partner focuses too much on winning new clients, this may lead to inadequate time being given to managing relationships with existing clients and supervising the work being done on the audits of those clients.

(c) **Myopia** (short-sightedness leading to the neglect of longer-term objectives). For example, the audit firm might be focussed on maximising client revenues rather than investing in the technology to provide automated audit software which will generate efficiency savings in the future.

(d) **Measure fixation** (measures and behaviour in order to achieve specific performance indicators which may not be effective). For example, if the audit firm's primary objective is to reduce costs on its audits, this may lead it to use staff who are too junior for the complexity of the work involved at particular clients. This may lead to client dissatisfaction (and loss of clients) or extra costs when a more senior member of staff has to re-do work which is unsatisfactory or incomplete.

(e) **Misrepresentation** ('creative' reporting to suggest that a result is acceptable). For example, the audit firm may produce a report saying that 90% of its clients have expressed complete satisfaction with the service they have received. But if the firm only sent its client satisfaction survey to a carefully selected number of clients, rather than all its client, the satisfaction score is misleading.

(f) **Misinterpretation** (failure to recognise the complexity of the environment in which the organisation operates). Within the accountancy firm, one partner might be focused on winning new business from large, national clients, another might be focused on winning new business from small, local clients, while a third might be focused on selling additional services to existing clients. In this

scenario, the motives of the different partners creates a complex environment in which the objectives of the firm's key players may conflict.

(g) **Gaming** (deliberate distortion of a measure to secure some strategic advantage). This might include deliberate under-performance in the current period to avoid higher targets being set in future periods. For example, assume an audit manager spots an opportunity to sell some additional services to a client, but knows the audit firm is already on target to exceed budgeted profit for the current period. The manager may suggest that the consultancy work begins in the next period, with the hope that the additional services help create a favourable performance to budget in that period as well.

(h) **Ossification** (an unwillingness to change the performance measure scheme once it has been set up). For example, the questions in the audit firm's questionnaire may be poorly designed and don't give clients the opportunity to comment on some aspects of the firm's offering. However, because the firm gets good responses from the questionnaire in its current form, it may be unwilling to change the questionnaire.

These problems highlight the issue of **congruence between the goals of individuals and the goals of the organisation.**

(a) We looked at organisational goals or objectives in Chapter 7.

(b) Individual goals may be financially or non-financially orientated and relate to remuneration, promotion prospects, job security, job satisfaction and self esteem.

Each **individual** may face a **conflict** between taking action to ensure organisational goals and action to ensure personal goals.

5.2.1 Ways in which the problems may be reduced

(a) **Involvement of staff** at all levels in the development and implementation of the scheme should help to reduce gaming and tunnel vision.

(b) A **flexible use** of performance measures should help to reduce measure fixation and misrepresentation.

(c) Keeping the performance measurement system under **constant review** should help to overcome the problems of ossification and gaming.

(d) Give careful consideration to the **dimensions of performance**. Quantifying all objectives should help to overcome sub-optimisation, while a focus on measuring customer satisfaction should reduce tunnel vision and sub-optimisation.

(e) Consideration should be given to the **audit of the system**. Expert interpretation of the performance measurement scheme should help to provide an idea of the incidence of the problems, while a careful audit of the data used should help to reduce the incidence and impact of measure fixation, misinterpretation and gaming.

(f) **Recognition of the key feature** necessary in any scheme (a long-term view/perspective amongst staff, a sensible number of measures, benchmarks which are independent of past activity) should help to overcome the range of problems listed above.

Exam Focus Point

This section of the text about the potential problems of performance measurement is based on an article Shane Johnson wrote in September 2005, called *The Pyramids and Pitfalls of Performance Measurement*. The article can be found on the ACCA website, and you are advised to read it.

In the December 2008 exam, students were asked to comment on statements made by a manager which revealed **measure fixation** being a possible problem with an organisation's performance measurement system.

6 Management styles

FAST FORWARD

Hopwood identified three distinct management styles: **budget-constrained style; profit-conscious style; and non-accounting style**.

Style	Hopwood says …
Budget-constrained style	'The manager's performance is primarily evaluated upon the basis of his ability to continually **meet the budget** on a **short-term basis** . . . stressed at the expense of other valued and important criteria and the manager will receive unfavourable feedback from his superior if, for instance, his actual costs exceed the budgeted costs, regardless of other considerations.'
Profit-conscious style	'The manager's performance is evaluated on the basis of his ability to **increase the general effectiveness** of his unit's operations in relation to the **long-term purposes** of the organisation'. If the manager can prove his actions will benefit the company in the future, he will be rewarded rather than punished (even if the actions have a short-term cost).
Non-accounting style	'The budgetary information plays a **relatively unimportant** part in the superior's evaluation of the manager's performance.' Other non-financial factors are deemed more important when appraising the manager's performance.

With the **profit-conscious** style of evaluation, budget reports are not dealt with in the rigid sense of analysing the size and direction of variances: the information in budget reports is supplemented with **information from other sources** and **interpreted in a wider sense**.

Short term vs long term performance

On a number of occasions in this Study Text we have highlighted the contrast between focusing on short term performance targets or longer term objectives. The distinction between 'budget-constrained style' and 'profit-conscious style' is another illustration of this contrast.

In an organisation which has a **budget-constrained management** style, the focus will be on **short-term financial performance**, and managers will be assessed on their ability to achieve budgets and other short-term targets.

The main focus of performance measures under a budget-constrained style is on **cost control**. However, again this might hinder future performance in the longer term. For example, if a firm reduces marketing expenditure there is a danger that its future revenue growth or market share may be reduced as a result.

By contrast, an organisation which has a **profit-conscious style** focuses more on **long-term performance,** and increasing an organisation's ability to achieve its longer-term objectives (eg growth).

Moreover, the main focus of performance measures under a profit-conscious style is **profitability** rather than cost control.

However, there is a possible danger that short-term performance could suffer if an organisation focuses too much on the long term rather at the expense of any more short term measures.

Hopwood's summary of the effects of the three styles of evaluation

	Style of evaluation		
Effects	**Budget-constrained**	**Profit-conscious**	**Non-accounting**
Involvement with costs	HIGH	HIGH	LOW
Job-related tension	HIGH	MEDIUM	MEDIUM
Manipulation of accounting reports	EXTENSIVE	LITTLE	LITTLE
Relations with the supervisor	POOR	GOOD	GOOD
Relations with colleague	POOR	GOOD	GOOD

The **profit-conscious style appears to be optimum** in terms of the variable examined but Hopwood pointed out this may **differ between organisations** and **between activities in the same organisation.**

Otley carried out a separate study and found **no significant difference** in job-related tension and so on, whichever managerial style was adopted. Otley's study considered managers who were comparatively independent, however, had a high degree of control over cash and resources and operated in a more predictable environment than the managers studied by Hopwood.

6.1 The importance of context

Otley's research indicates that the **context** in which budgetary control is used is as **important** as the style in which it is used. For example, some managers (like those studied by Hopwood) are highly interdependent and face a good deal of uncertainty, so that good performance depends upon others' co-operation and favourable external circumstances. Such situations do not match well with the budget-constrained style.

A **budget-constrained** style can be appropriate in a business with cash flow problems where management are focusing on keeping costs reigned in. So, for example, making unplanned expenditure to get a machine repaired quickly so that an important order could be completed and shipped to a customer would be criticised because it led to the repair budget being exceeded. Not surprisingly, this approach leads to very **poor manager/subordinate relationships** and also encourages the manipulation and misreporting of information.

This style might be used in a **mature business**, where there is limited scope for growth so **cost control** becomes an increasingly important to maximising profit. A business in decline may possibly also use this style. (We consider business failure in a later chapter.)

A **profit-conscious** style may suit a business which has devolved operations and managers assume a high level of discretion. Short-term profit remains important but it is balanced against **longer-term performance** objectives. In the previous example, the employee would arranged for the machine to be repaired would be more likely to be praised for this because it enabled the organisation to meet customer requirements, thereby increasing the likelihood of generating further business from them in the future.

This style is likely to be used by business which are in the **growth phase** of their life cycle.

A **non-accounting** style may suit managers with operational priorities rather than a cost or profit focus, because it prioritises non-financial performance measures above financial ones.

For example, the quality control department for an airline company has to ensure that its planes are safe to fly before they take to the air. If an inspection requires that a plane needs some repair work before it can take off safely, that repair work has to be done, because the consequences of not doing it could be disastrous.

Equally, this style may be appropriate in some medical research and development teams. The teams' performance could be evaluated on the basis of the quality of the research they carry out and the number of potentially valuable new discoveries they make rather than the amount of profit made by the department.

A non-accounting style could also be appropriate for public sector organisations where financial parameters are less important than non-financial ones.

However, if an organisation focuses too much on non-financial performance at the expense of financial performance (as would be the case in a non-accounting style) there is a danger that financial performance will suffer as a result.

Chapter Roundup

- People are fundamental to any organisation. The **manpower planning** approach suffers from disadvantages that are similar to those of the rational planning approach to strategy. A more diagnostic approach lays more emphasis on the complexity of **human behaviour**.

  Psychological contracts may be **coercive**, **calculative** or **co-operative**. The contract is perceived as coercive when the individual perceives if as unequal and exploitative. The co-operative contract exists when the individual identifies with the organisation and its goals.

- Appraisal has several purposes, including the improvement of individual performance; motivation; communication; selection for promotion; and the determination of individual reward.

  It is also fundamental to **performance management**, forming a link between the individual and overall strategy. Within this wider setting, appraisal may be seen as having two immediate purposes:

  – Judgement
  – Development

- Performance management attempts to integrate HRM processes with the strategic direction and control of the organisation by incorporating agreed goals and control measures. There are several approaches to performance rating.

  – Inputs and personal qualities
  – Behaviour in performance
  – Results and outcomes

- Employment is an economic relationship: labour is exchanged for reward. **Extrinsic rewards** derive from job context and include pay and benefits. **Intrinsic rewards** derive from job content and satisfy higher level needs. reward interacts with many other aspects of the organisation. Reward policy must recognise these interactions, the economic relationship and the psychological contract.

- There are five elements to Bratton's model of reward management.

  – The strategic perspective
  – Reward objectives
  – Reward options
  – Reward techniques
  – Reward competitiveness

- **Hard accountability** involves consideration of financial and quantitative information. **Soft accountability** considers the human input to the system and its role in shaping, evaluating and implementing goals.

- Berry, Broadbent and Otley have described various **problems and benefits of performance measurement.**

- Hopwood identified three distinct management styles: **budget-constrained style; profit-conscious style; and non-accounting style.**

Quick Quiz

1 What are the two main purposes of appraisal?

2 What are the five elements of Bratton's model of reward management?

3 What are the three categories of material reward?

4 *Link the following terms (problems of performance measurement) to the correct definitions.*

Terms

(a)	Tunnel vision	(e)	Misrepresentation
(b)	Sub-optimisation	(f)	Misinterpretation
(c)	Myopia	(g)	Gaming
(d)	Measure fixation	(h)	Ossification

Definitions

1 Deliberate distortion of a measure to secure some strategic advantage

2 'Creative' reporting to suggest that a result is acceptable

3 Undue focus on performance measures to the detriment of other areas

4 Short-sightedness leading to the neglect of long-term objectives

5 Focus on some objectives so that others are not achieved

6 An unwillingness to change the performance measure scheme once it has been set up

7 Failure to recognise the complexity of the environment in which the organisation operates

8 Measures and behaviour in order to achieve specific performance indicators which may not be effective.

5 Relationships between managers and staff at AQ Co have become increasingly strained recently, with staff being concerned at the number of cut-backs that are being made. They fell that the managers need to look at longer term objectives rather than focussing solely on short-term cost targets, which they seem to be doing at the moment.

Which of Hopwood's management styles best describes the style being used at AQ Co?

A Budget-constrained style
B Profit-conscious style
C Non-accounting style
D Judgemental style

6 *Fill in the blanks.*

Reward schemes undervalue ..... rewards (which reflect the satisfaction that an individual experiences from doing a job and the opportunity for growth that the job provides) given that they promote ..... rewards (bonuses and so on).

Answers to Quick Quiz

1 Judgement; and development.

Remember, the tension between judgement (control) and development is at the heart of most debates about the effectiveness of appraisal at work.

2 Strategic perspective, reward objectives, reward options, reward techniques and reward competitiveness.
Remember, strategic perspective is very important because a reward system must be properly aligned to the job and the organisation's overall strategy.

3 Base pay, performance pay and indirect pay

4 (a) 3
(b) 5
(c) 4
(d) 8
(e) 2
(f) 7
(g) 1
(h) 6

5 A

The focus on short-term results and cost cutting is characteristic of a budget-constrained style.
A budget-constrained style also tends to lead to poor relationships between managers and subordinates.

6 Intrinsic
Extrinsic

Now try the question below from the Question Bank

Number	Level	Marks	Time
Q15	Examination	20	36 mins

9

Divisional performance and transfer pricing issues

Topic list	Syllabus reference
1 Divisional structure and performance measures	D3(a)
2 Measuring performance	D3(b)
3 When transfer pricing is required	D3(c)
4 The 'general rule'	D3(c)
5 The use of market price	D3(d)
6 Cost-based approaches to transfer pricing	D3(d)
7 Fixed costs and transfer pricing	D3(d)
8 Standard cost versus actual cost	D3(d)
9 Cost-based approaches with no external market	D3(d)
10 Opportunity costs and transfer prices	D3(d)
11 Transfer pricing when intermediate products are in short supply	D3(d)
12 Transfer pricing and a range of limiting factors	D3(d)
13 Shadow price and transfer prices	D3(d)
14 Negotiated transfer prices	D3(d)
15 Multinational transfer pricing	D3(e)

Introduction

This is the third chapter in the **performance measurement** part of the syllabus. The main focus of this chapter is on **transfer pricing**, which is a system of **charging a division of an organisation for goods and services provided by another division.**

In a **divisionalised organisation** structure of any kind, if one division does work that is used by another division, transfer pricing may be required. Do not be misled by the term 'price': there is **not necessarily any suggestion of profit** as there usually is with an external selling price. But as we shall see, transfer pricing is particularly appropriate where divisions are designated as **profit centres**.

The chapter covers a lot of material. Read through the two sections at the start of the chapter. These run though **performance measures used in divisionalised organisations** and how suitable these are as divisional measures. Then move on to the third section where we introduce **transfer pricing policy**. Thereafter, the chapter describes a variety of **transfer pricing methods**. We then conclude the chapter with an explanation and consideration **of transfer prices in multinational companies**.

Study guide

		Intellectual level
D3	**Divisional performance and transfer pricing issues**	
(a)	Describe, compute and evaluate performance measures relevant in a divisionalised organisation structure including ROI, RI and Economic Value Added [EVA]	3
(b)	Discuss the need for separate measures in respect of managerial and divisional performance	2
(c)	Discuss the circumstances in which a transfer pricing policy may be needed and discuss the necessary criteria for its design	2
(d)	Demonstrate and evaluate the use of alternative bases for transfer pricing	3
(e)	Explain and demonstrate issues that require consideration when setting transfer prices in multinational companies	2

Exam guide

The topics in this chapter provide plenty of material for an exam question. Indeed, you may find a full question testing your knowledge of transfer pricing, and you should be prepared for a discussion question about the role of transfer pricing in performance measurement, or the issues that transfer pricing raises for performance measurement.

As you are reading through the sections of the chapter on transfer pricing, try to remember the following, and consider how well it is being addressed:

The aims of transfer pricing are to try to **resolve the conflict between decision-making and performance evaluations,** and to achieve **goal congruence** between individual divisions and an organisation as a whole.

Also, remember that in the context of Paper P5 the primary focus isn't simply transfer pricing calculations in their own right, but their usefulness in allowing managers to measure and evaluate divisional performance in organisations.

Nonetheless, there is a useful article in the October 2009 edition of *Student Accountant* on transfer pricing. It is worth reading, and gives some examples to work through.

Exam focus point

One of the compulsory questions in the June 2011 exam asked candidates to evaluate the divisional performance of a company described in the question scenario, and then to discuss the proposed measures of divisional performance (which were residual income (RI) and economic value added (EVA)). The question then asked candidates (for 12 marks) to outline the criteria for designing a transfer pricing system, and then evaluate two transfer-pricing approaches (market price and cost plus) identified in the scenario.

A part-question for ten marks in the pilot paper had also asked for a discussion of the application and acceptability of different transfer pricing bases. Five different transfer pricing bases were given for candidates to review.

1 Divisional structure and performance measures

FAST FORWARD

We considered the **divisional form or structure** for an organisation in Chapter 3, when we looked at the information needs of businesses adopting this form. This chapter also discussed the pros and cons of adopting the divisional form, including ease of performance measurement

In this section we look at three performance measures relevant in a divisionalised structure. These are Return on Investment, Residual Income and Economic Value Added®.

Return on Investment (ROI) and **Residual Income (RI)** were discussed in Chapter 8 when we considered the scope of strategic performance measures in the private sector. In this chapter we will just pick out the salient features that apply to their use in divisionalised structures.

1.1 Divisional performance: return on investment (ROI)

Key term

Return on investment (ROI) is a form of ROCE and is calculated as:

$$\frac{\text{Profit before interest and tax} \times 100}{\text{Operations management capital employed}}$$

ROI is normally used to apply to investment centres or profit centres. These normally reflect the existing organisation structure of the business.

1.1.1 Evaluation of ROI

You may like to consider the following factors when evaluating the use of ROI as a divisional performance measure.

(a) **Comparisons**. It permits comparisons to be drawn between investment centres that differ in their absolute size.

(b) **Aggregation**. ROI is a very convenient method of measuring the performance for a division or company as an entire unit.

(c) **Using an identical target return.** This may not be suitable for many divisions or investment centres as it makes **no allowance** for the different **risk** of each investment centre.

(d) **Misleading impression of improved performance**. If an investment centre maintains the **same annual profit**, and keeps the **same assets** without a policy of regular non-current asset replacement, its **ROI** will **increase year by year as the assets get older**. This can give a false impression of improving 'real' performance over time.

(e) **Valuation and classification of assets**. Many of the criticisms of ROI arise from the valuation of assets used in the denominator. Refer back to Chapter 8 for a full explanation of the problems in measuring asset values. Chapter 8 also refers to the tricky decision of when to classify expenditure as assets.

(f) **Short-term perspective.** Since **managers will be judged** on the basis of the ROI that their centre earns each year, they are likely to be **motivated** into taking those decisions, which **increase** their centre's **short-term ROI**. So, in the short term, a desire to increase ROI might lead to projects being taken on without **due regard to their risk**.

(g) **Sub-optimal decisions.** Similarly, if ROI is used to evaluate divisional performance it may encourage managers to make sub-optimal decisions. For example, managers may choose, incorrectly, not to undertake a project with a return greater than the cost of capital simply because it has a lower projected ROI than the current ROI for the division as a whole.

(h) **Lack of goal congruence**. An investment might be desirable from the group's point of view, but would not be in the individual investment centre's 'best interest' to undertake. Furthermore, any decisions which **benefit** the company in the **long term** but which **reduce** the ROI in the immediate **short term** would **reflect badly** on the manager's reported performance.

1.2 Divisional performance: residual income (RI)

Key term

Residual income is a measure of the centre's profits after deducting a notional or imputed interest cost.

Its use highlights the finance charge associated with funding.

1.2.1 Evaluation of RI

You may like to consider the following factors when evaluating the use of RI. Think about how it compares to ROI as a possible divisional performance measure.

(a) **Usefulness in decision-making.** Residual income **increases in the following circumstances.**

(i) Investments earning above the cost of capital are undertaken
(ii) Investments earning below the cost of capital are eliminated

Thus it leads managers to make the correct investment decision to benefit the company as a whole.

(b) **Flexibility compared to ROI** since a different cost of capital can be applied to investments with different risk characteristics.

(c) **Does not allow comparisons between investment centres.** RI cannot be used to make comparisons between investment centres as it is an absolute measure of performance.

(d) **Difficulty in deciding on an appropriate and accurate measure of the capital employed**. As we discussed above, there can be some difficulty in knowing what values to place on assets.

(e) **Does not relate the size of a centre's income to the size of the investment**, other than indirectly through the interest charge.

1.3 Divisional performance: economic value added (EVA)

We looked at economic value added in detail in the previous chapter, and noted its underlying approach is similar to residual income (RI). However, we also noted that the objective of EVA was to focus on the ways in which corporate value (shareholder value) can be added or lost.

Therefore, by linking divisional performance to EVA, divisional managers should also be motivated to focus maximising the wealth of their division and in turn **increasing shareholder value**.

Divisional managers are unlikely to be able to change the weighted average cost of capital for a company as a whole, but using EVA should ensure that divisional managers only invest in projects where their return exceeds **the costs of the company's capital**.

2 Measuring performance

FAST FORWARD

One of the problems of measuring managerial performance is **segregating managerial performance from the economic performance of their department or division**.

2.1 Managerial performance

The distinction between the **manager's performance** and the **performance of the division** is very important. Horngren provides a good illustration.

'The most **skilful divisional manager is often put in charge of the sickest division in an attempt to change its fortunes**. Such an attempt may take years, not months. Furthermore the manager's efforts may merely result in bringing the division up to a minimum acceptable ROI. The division may continue to be a poor profit performer in comparison with other divisions. If top management relied solely on the absolute ROI to judge management, the skilful manager would be foolish to accept such a trouble-shooting assignment.'

The distinction between **managerial performance** and **divisional performance** means that a division might be unprofitable because of external market conditions (such as overcapacity or a declining market) yet the manager may still be performing well. Conversely, another division might report significant profits, but management may not be performing well; for example, if a favourable economic environment means it should have been able to generate even greater profits than it did.

It is difficult to devise performance measures that relate specifically to a manager to judge his or her performance as a manager. It is possible to calculate statistics to assess the manager as an employee like any other employee (days absent, professional qualifications obtained, personability and so on), but this is not the point. As soon as the issue of **ability as a manager** arises it is necessary to **consider him in relation to his area of responsibility**. If we want to know how good a manager is at marketing the only information there is to go on is the marketing performance of his division (which may or may not be traceable to his own efforts).

In summary then, **managers** should only be assessed on **results within their control**. (This is based on the idea of the **controllability principle**: managers should only be held accountable for the results that they can significantly influence.)

Divisional performance should be based on **total economic performance** (including central service and administration costs) to provide an assessment of the measure of the worth of the division to the organisation.

This is an important distinction. If divisional performance were measured only on the amounts directly controllable by the divisional manager, this would **overstate the economic performance** of the division. If the divisions were independent companies, they would have to incur the cost of those services currently provided by head office. Therefore, to measure the economic performance of a division, many items that the divisional manager cannot influence (such as interest charges, taxes, and the allocation of central administrative staff expenses) should be included in the profitability measure.

2.2 Profit statement

A possible profit statement for a division might look as follows:

	$'000
Sales revenue	X
Variable costs	(X)
Contribution	X
Controllable fixed costs	(X)
Controllable profit	X
Non-controllable fixed costs	(X)
Divisional profit	X

Contribution should be an acceptable measure of managerial performance unless it contains imposed transfers and transfer prices.

Controllable profit may be a more appropriate measure of managerial performance where managers can make decisions about equipment rental or labour costs. It is more acceptable when managers are free to secure services either in house or from third parties. Deprecation is likely to be included and this will only be controllable to the extent that managers control investment decisions.

Divisional profit is unlikely to be an acceptable managerial measure. It is suitable for assessing the economic performance of the divisions provided the allocation of fixed costs is reasonable.

3 When transfer pricing is required

FAST FORWARD

It is necessary for **control purposes** that some **record** of the market in inter-divisional goods or services should be kept. One way of doing this is through the accounting system. Inter-divisional work can be given a cost or a charge: a transfer price.

3.1 Introduction to transfer pricing

Where there are transfers of goods or services between divisions of a divisionalised organisation, the **transfers could be made 'free' or 'as a favour'** to the division receiving the benefit. For example, if a garage and car showroom has two divisions, one for car repairs and servicing, the other for car sales, the servicing division will be required to service cars before they are sold and delivered to customers. There is

no requirement for this service work to be charged for: the servicing division could do its work for the car sales division without making any record of the work done.

Unless the cost or value of such work is recorded, however, management cannot keep a proper check on the amount of resources (like labour time) being used on servicing cars for the sales division. It is necessary for **control purposes** that some **record** of the inter-divisional services should be kept, and one way of doing this is **through the accounting system**. Inter-divisional work can be given a cost or charge: a transfer price.

Key term

> A **transfer price** is the price at which goods or services are transferred from one department to another, or from one member of a group to another.

The simple example of the garage and the car showroom also illustrates the need for transfer pricing to help **evaluate the performance of the two divisions** more fairly. For example, if the service division does not receive any credit for the work it does for the sales division then its revenue and profitability are effectively understated. Conversely, the performance of the sales division is effectively over-stated.

Therefore, transfer prices are required to prevent the performance of the two divisions being distorted.

Preventing distortion in this way should also help maintain the **motivation** of the divisional managers. For example, if the selling division (in our example, the service division) doesn't get any credit for the work it does, this could demotivate the manager and staff of that division. Equally, however, if the charge to the purchasing division (in our example, the car sales division) was too high this could serve to demotivate the manager and staff of that division.

3.2 Criteria for designing a transfer pricing policy

FAST FORWARD

Transfer prices are a way of promoting **divisional autonomy**, ideally without prejudicing **divisional performance measurement** or discouraging overall **corporate profit maximisation (goal congruence)**.

3.2.1 Divisional autonomy

Transfer prices are particularly appropriate for **profit centres** because if one profit centre does work for another the size of the transfer price will affect the costs of one profit centre and the revenues of another.

However, a danger with profit centre accounting is that the business organisation will divide into a number of **self-interested segments**, each acting at times against the wishes and interests of other segments. A profit centre manager might take decisions in the best interests of his own part of the business, but against the best interests of other profit centres and possibly the organisation as a whole.

A task of head office is therefore to try to prevent dysfunctional decision making by individual profit centres. To do this, it must reserve some power and authority for itself and so profit centres **cannot** be allowed to make entirely **autonomous decisions**.

Just how much authority head office decides to keep for itself will vary according to individual circumstances. A **balance** ought to be kept between **divisional autonomy** to provide incentives and motivation, and retaining **centralised authority** to ensure that the organisation's profit centres are all working towards the same target, the benefit of the organisation as a whole (in other words, retaining **goal congruence** among the organisation's separate divisions).

3.2.2 Divisional performance measurement

Profit centre managers tend to put their **own profit performance** above everything else. Since profit centre performance is measured according to the profit they earn, no profit centre will want to do work for another and incur costs without being paid for it. Consequently, profit centre managers are likely to dispute the size of transfer prices with each other, or disagree about whether one profit centre should do work for another or not. Transfer prices **affect behaviour and decisions** by profit centre managers.

3.2.3 Corporate profit maximisation (goal congruence)

When there are disagreements about how much work should be transferred between divisions, and how many sales the division should make to the external market, there is presumably a **profit-maximising** level of output and sales for the organisation as a whole. However, unless each profit centre also maximises its own profit at this same level of output, there will be inter-divisional disagreements about output levels and the profit-maximising output will not be achieved.

3.3 The ideal solution

Ideally a transfer price should be set at a level that overcomes these problems.

(a) The transfer price should provide an 'artificial' selling price that enables the transferring division to **earn a return** for its efforts, and the receiving division to **incur a cost** for benefits received.

(b) The transfer price should be set at a level that enables profit centre performance to be **measured 'commercially'** (that is, it should be a **fair** commercial price).

(c) The transfer price, if possible, should encourage profit centre managers to agree on the amount of goods and services to be transferred, which will also be at a level that is consistent with the organisation's aims as a whole such as **maximising company profits**.

In practice it is very difficult to achieve all three aims.

Question — Problems with transfer pricing

(a) What do you understand by the term 'divisional autonomy'?

(b) What are the likely behavioural consequences of a head office continually imposing its own decisions on divisions?

Answer

(a) The term refers to the right of a division to govern itself, that is, the freedom to make decisions without consulting a higher authority first and without interference from a higher body.

(b) Decentralisation recognises that those closest to a job are the best equipped to say how it should be done and that people tend to perform to a higher standard if they are given responsibility. Centrally-imposed decisions are likely to make managers feel that they do not really have any authority and therefore that they cannot be held responsible for performance. They will therefore make less effort to perform well.

4 The 'general rule'

We shall see eventually that the **ideal transfer price** should **reflect the opportunity cost of sale to the supplying division and the opportunity cost to the buying division.** We look at this in detail in section 10. However, this 'general rule' needs to be measured against the three criteria we looked at in the previous section. When setting a transfer price, management must always seek to reconcile the three criteria of goal congruence, managerial effort, and divisional autonomy simultaneously. As we work through the different methods of transfer pricing we will consider how each method meets the three criteria.

Knowledge brought forward from earlier studies

There are various bases which can be used for deciding a transfer price, which can be summarised as:

- Market based transfer prices
- Cost based transfer prices
- Negotiated transfer prices

You should already be familiar with the bases for calculating transfer prices from your studies for paper F5. However, you also need to be able to 'Demonstrate and evaluate the use of alternative bases for transfer pricing' in paper P5, so we will discuss them again here.

5 The use of market price

FAST FORWARD

Transfer prices may be based on **market price** (or an **adjusted market price**) where there is an external market for the item being transferred.

5.1 Market price as the transfer price

If an **external market** price exists for transferred goods, profit centre managers will be aware of the price they could charge or the price they would have to pay for their goods on the external market, and so will **compare** this price with the internal transfer price.

5.1.1 Example: transferring goods at market value

A company has two profit centres, A and B. Centre A sells half of its output on the open market and transfers the other half to B. Costs and external revenues in an accounting period are as follows.

	A	B	Total
	$	$	$
External sales	8,000	24,000	32,000
Costs of production	12,000	10,000	22,000
Company profit			10,000

Required

What are the consequences of setting a transfer price at market value?

Solution

If the transfer price is at market price, A would be happy to sell the output to B for $8,000, which is what A would get by selling it externally instead of transferring it.

	A		B		Total
	$	$	$	$	$
Market sales		8,000		24,000	32,000
Transfer sales		8,000		–	
		16,000		24,000	
Transfer costs	–		8,000		
Own costs	12,000		10,000		22,000
		12,000		18,000	
Profit		4,000		6,000	10,000

The consequences, therefore, are as follows.

(a) A earns the same profit on transfers as on external sales. B must pay a commercial price for transferred goods, and both divisions will have their profit measured fairly.

(b) A will be indifferent about selling externally or transferring goods to B because the profit is the same on both types of transaction. B can therefore ask for and obtain as many units as it wants from A.

A **market-based** transfer price therefore seems to be the **ideal** transfer price. However, a market-based transfer price can only be applied if a valid market price is available for the goods being transferred between the divisions.

5.2 Adjusted market price

However, internal transfers are often **cheaper** than external sales, with **savings** in selling and administration costs, bad debt risks and possibly transport/delivery costs. It would therefore seem reasonable for the buying division to expect a **discount** on the external market price.

The transfer price might be slightly less than market price, so that A and B could **share the cost savings** from internal transfers compared with external sales. It should be possible to reach agreement on this price and on output levels with a minimum of intervention from head office.

5.3 The merits of market value transfer prices

5.3.1 Divisional autonomy

In a decentralised company, divisional managers should have the **autonomy** to make output, selling and buying **decisions, which appear to be in the best interests of the division's performance.** (If every division optimises its performance, the company as a whole must inevitably achieve optimal results.) Thus a **transferor division should be given the freedom to sell output on the open market,** rather than to transfer it within the company.

'Arm's length' transfer prices, which give profit centre managers the freedom to negotiate prices with other profit centres as though they were independent companies, will tend to result in a market-based transfer price.

5.3.2 Corporate profit maximisation

In most cases where the transfer price is at market price, **internal transfers** should be **expected**, because the **buying division** is likely to **benefit** from a better quality of service, greater flexibility, and dependability of supply. **Both divisions** may **benefit** from cheaper costs of administration, selling and transport. A market price as the transfer price would therefore **result in decisions, which would be in the best interests of the company or group as a whole**.

5.3.3 Divisional performance measurement

Where a **market price exists**, but the **transfer price is a different amount** (say, at standard cost plus), divisional managers will **argue** about the volume of internal transfers.

For example, if division X is expected to sell output to division Y at a transfer price of $8 per unit when the open market price is $10, its manager will decide to sell all output on the open market. The manager of division Y would resent the loss of his cheap supply from X, and would be reluctant to buy on the open market. A wasteful situation would arise where X sells on the open market at $10, where Y buys at $10, so that administration, selling and distribution costs would have been saved if X had sold directly to Y at $10, the market price.

5.4 The disadvantages of market value transfer prices

Market value as a transfer price does have certain disadvantages.

(a) The market price may be a **temporary** one, induced by adverse **economic conditions**, or dumping, or the market price might depend on the volume of output supplied to the external market by the profit centre.

(b) A transfer price at market value might, under some circumstances, act as a disincentive to use up any **spare capacity** in the divisions. A price based on incremental cost, in contrast, might provide an incentive to use up the spare resources in order to provide a marginal contribution to profit.

(c) Many products **do not have an equivalent** market price so that the price of a similar, but not identical, product might have to be chosen. In such circumstances, the option to sell or buy on the open market does not really exist.

(d) The **external market** for the transferred item might be **imperfect**, so that if the transferring division wanted to sell more externally, it would have to **reduce** its price.

6 Cost-based approaches to transfer pricing

FAST FORWARD

Problems arise with the use of **cost-based** transfer prices because one party or the other is liable to perceive them as unfair.

Cost-based approaches to transfer pricing are often used in practice, because in practice the following conditions are common:

(a) There is **no external market** for the product that is being transferred.

(b) Alternatively, although there is an external market it is an **imperfect** one because the market price is affected by such factors as the amount that the company setting the transfer price supplies to it, or because there is only a limited external demand.

In either case there will not be a suitable market price upon which to base the transfer price. **When a transfer price is based on cost, standard cost should be used, not actual cost**. We will look at this in more detail in Section 8 but first of all we will run through the possible cost-based transfer prices.

6.1 Transfer prices based on full cost

Under this approach, the **full cost** (including fixed overheads absorbed) incurred by the supplying division in making the 'intermediate' product is charged to the receiving division. If a **full cost plus** approach is used a **profit margin** is also included in this transfer price.

Key term

An **intermediate product** is one that is used as a component of another product, for example car headlights or food additives.

6.2 Example: transfers at full cost (plus)

Consider the example introduced in Section 5.1.1, but with the additional complication of imperfect intermediate and final markets. A company has 2 profit centres, A and B. Centre A can only sell **half** of its maximum output externally because of limited demand. It transfers the other half of its output to B, which also faces limited demand. Costs and revenues in an accounting period are as follows.

	A	B	Total
	$	$	$
External sales	8,000	24,000	32,000
Costs of production in the division	12,000	10,000	22,000
Profit			10,000

There are no opening or closing inventories. It does not matter here whether marginal or absorption costing is used and we shall ignore the question of whether the current output levels are profit maximising and congruent with the goals of the company as a whole.

6.2.1 Transfer price at full cost only

If the transfer price is at full cost, A in our example would have 'sales' to B of $6,000 (costs of $12,000 × 50%). This would be a cost to B, as follows.

		A		*B*	*Company as a whole*
	$	$	$	$	$
Open market sales		8,000		24,000	32,000
Transfer sales		6,000		–	
Total sales, inc transfers		14,000		24,000	
Transfer costs			6,000		
Own costs	12,000		10,000		22,000
Total costs, inc transfers		12,000		16,000	
Profit		2,000		8,000	10,000

The transfer sales of A are self-cancelling with the transfer costs of B so that total profits are unaffected by the transfer items. The transfer price simply spreads the total profit of $10,000 between A and B.

The obvious drawback to the transfer price at cost is that **A makes no profit** on its work, and the manager of division A would much prefer to sell output on the open market to earn a profit, rather than transfer to B, regardless of whether or not transfers to B would be in the best interests of the company as a whole. Division A needs a profit on its transfers in order to be motivated to supply B; therefore transfer pricing at cost is inconsistent with the use of a profit centre accounting system.

6.2.2 Transfer price at full cost plus

If the transfers are at cost plus a margin of, say, 25%, A's sales to B would be $7,500 ($12,000 × 50% × 1.25).

		A		B	Total
	$	$	$	$	$
Open market sales		8,000		24,000	32,000
Transfer sales		7,500		–	
		15,500		24,000	
Transfer costs			7,500		
Own costs	12,000		10,000		22,000
		12,000		17,500	
Profit		3,500		6,500	10,000

Compared to a transfer price at cost, **A gains some profit** at the expense of B. However, A makes a bigger profit on external sales in this case because the profit mark-up of 25% is less than the profit mark-up on open market sales. The choice of 25% as a profit mark-up was arbitrary and unrelated to external market conditions.

6.2.3 Divisional autonomy, divisional performance measurement and corporate profit maximisation

In the above case the transfer price **fails on all three criteria** for judgement.

(a) Arguably, it does not give A fair revenue or charge B a reasonable cost, and so their profit **performance** is distorted. It would certainly be unfair, for example, to compare A's profit with B's profit.

(b) Given this unfairness it is likely that the **autonomy** of each of the divisional managers is under threat. If they cannot agree on what is a fair split of the external profit a decision will have to be imposed from above.

(c) It would seem to give A an incentive to sell more goods externally and transfer less to B. This may or may not be in the best interests of the **company as a whole**.

Question — **Transfer pricing**

Suppose, in the example, that the cost per unit of A's output is $9 in variable costs and $6 in fixed costs. B's own costs are $25 including a fixed element of $10. What is the minimum price that B should charge for its products to break even?

Answer

A produces $12,000/($9 + $6) = 800 units and transfers half of them to B for $6,000. The cost for each unit that B buys is therefore $6,000/400 = $15. From B's perspective this is a **variable** cost. B's costs are as follows:

	Cost per unit
	$
Variable cost: transfers from A	15
Own variable costs	15
	30

From B's perspective it must charge more than $30 per unit to earn a contribution. However, from the overall perspective, $6 of the 'variable' cost of transfers is **fixed**. The variable cost is really $9 + $15 = $24, and any price above this will earn a contribution for the organisation as a whole.

6.3 Transfer price at marginal cost

A marginal cost approach entails charging the marginal cost that has been incurred by the supplying division to the receiving division. As above, we shall suppose that A's cost per unit is $15, of which $6 is fixed and $9 variable.

	A		B		Company as a whole	
	$	$	$	$	$	$
Market sales		8,000		24,000		32,000
Transfer sales ($6,000 × 9/15)		3,600		–		
		11,600		24,000		
Transfer costs	–		3,600			
Own variable costs	7,200		6,000		13,200	
Own fixed costs	4,800		4,000		8,800	
Total costs and transfers		12,000		13,600		22,000
(Loss)/Profit		(400)		10,400		10,000

6.3.1 Divisional autonomy, divisional performance measurement and corporate profit maximisation

(a) This result is deeply unsatisfactory for the manager of division A who could make an additional $4,400 ($(8,000 – 3,600)) profit if no goods were transferred to division B.

(b) Given that the manager of division A would prefer to transfer externally, head office are likely to have to insist that internal transfers are made.

(c) For the company overall, external transfers only would cause a large fall in profit, because division B could make no sales at all.

The problem is that with a transfer price at marginal cost the **supplying division does not cover its fixed costs.**

7 Fixed costs and transfer pricing

FAST FORWARD

Fixed costs in the supplying division can be accounted for in a number of ways to ensure that it at least breaks even.

There are a number of ways in which this problem could be overcome.

7.1 Sharing contribution

Each division can be given a **share** of the overall contribution earned by the organisation, but it is probably necessary to decide what the shares should be centrally, undermining **divisional autonomy**. Alternatively

central management could impose a range within which the transfer price should fall, and allow divisional managers to **negotiate** what they felt was a fair price between themselves.

7.2 Two-part charging system

Transfer prices are set at variable cost and once a year there is a transfer of a fixed fee to the supplying division, representing an allowance for its fixed costs. Care is needed with this approach. It risks sending the message to the supplying division that it need not control its fixed costs because the company will **subsidise any inefficiencies**. On the other hand, if fixed costs are incurred because spare capacity is kept available for the needs of other divisions it is reasonable to expect those other divisions to pay a fee if they 'booked' that capacity in advance but later failed to utilise it. The main problem with this approach once more is that it is likely to conflict with **divisional autonomy**.

7.3 Dual pricing

Be careful not to confuse this term with 'two-part' transfer pricing. Dual pricing means that two separate transfer prices are used.

(a) For the transfer of goods from the supplying division to the receiving division the transfer price is set at variable cost. This ensures that the receiving division makes optimal **decisions** and it leads to corporate profit maximisation.

(b) For the purposes of **reporting results** the transfer price is based on the *total* costs of the transferring division, thus avoiding the possibility of reporting a loss.

This method is not widely used in practice.

7.4 Addressing organisational structure

One final possibility that may be worth mentioning. Given that the problems are caused by the divisional structure, might it not be better to address the **structure**, for example by **merging the two divisions**, or ceasing to treat the transferring division as a profit centre. This may not be practical. Some would argue that the benefits of decentralisation in terms of motivation outweigh any costs that might arise due to slight inefficiencies.

8 Standard cost versus actual cost

FAST FORWARD

Standard costs should be used for transfer prices to avoid encouraging inefficiency in the supplying division.

When a transfer price is based on cost, **standard cost** should be used, not actual cost. A transfer of actual cost would give no incentive to **control costs**, because they could all be passed on. Actual cost-*plus* transfer prices might even encourage the manager of A to overspend, because this would increase the divisional profit, even though the company as a whole (and division B) suffers.

Suppose, for example, that A's costs should have been $12,000, but actually were $16,000. Transfers (50% of output) would cost $8,000 actual, and the cost plus transfer price is at a margin of 25% ($8,000 × 125% = $10,000).

	A		B		Total
	$	$	$	$	$
Market sales		8,000		24,000	32,000
Transfer sales		10,000		–	
		18,000		24,000	
Transfer costs	–		10,000		
Own costs	16,000		10,000		26,000
		16,000		20,000	
Profit		2,000		4,000	6,000

A's overspending by $4,000 has reduced the total profits from $10,000 to $6,000.

In this example, B must bear much of the cost of A's overspending, which is clearly unsatisfactory for responsibility accounting. If, however, the transfer price were at standard cost plus instead of actual cost plus, the transfer sales would have been $7,500, regardless of A's overspending.

	A		*B*		*Total*
	$	$	$	$	$
Market sales		8,000		24,000	32,000
Transfer sales		7,500		–	
		15,500		24,000	
Transfer costs	–		7,500		
Own costs	16,000		10,000		
		16,000		17,500	26,000
Profit/(loss)		(500)		6,500	6,000

The entire cost of the overspending by A of $4,000 is now borne by division A itself as a comparison with the first table of figures in this section will show.

Question

Standard cost v actual cost

Why has A's profit fallen by $2,500, not $4,000?

Answer

A was already bearing 50% of its overspending. The fall in profit is $2,000 × 125% = $2,500, which represents the other 50% of its over spending and the loss of the profit margin on transfers to B.

The advantage of using standard costing is that it avoids any inefficiencies from the selling division (in this case, division A) being transferred to the purchasing division (here, division B). As a result, this will encourage the selling division (division A) to be as efficient as possible, because any inefficiencies in its performance will impact directly on its own results.

Conversely, however, the standard costing method does not reflect the efforts of the selling division, so it will not be favoured by that division. For example, if raw material costs have increased since the standard cost was set, the selling division's cost will have increased, but it will not be able to transfer any of this increase on to the purchasing division. Do you think this will seem fair to the manager of the selling division (ie Division A)?

9 Cost-based approaches with no external market

FAST FORWARD

With **no external market**, the transfer price should be set in the range where variable cost in the supplying division is less than or equal to net marginal revenue in the receiving division.

9.1 Unlimited capacity and no external market

So far we have considered the use of cost-based approaches where the following factors applied.

(a) There was a **limit on the maximum output** of the supplying division.
(b) There was a **limit** to the amount that could be sold in the **intermediate market**.

We found that a **marginal cost** based approach led to the **best decisions** for the organisation overall, but that this was **beset with problems** in maintaining divisional autonomy and measuring divisional performance fairly.

We shall now consider whether this finding changes in different conditions. We shall remove the limit on output and demand for the final product, but assume that there is *no* intermediate market at all.

9.2 Example: unlimited capacity and no intermediate market

Motivate Ltd has two profit centres, P and Q. P transfers *all* its output to Q. The variable cost of output from P is $5 per unit, and fixed costs are $1,200 per month. Additional processing costs in Q are $4 per unit for variable costs, plus fixed costs of $800. Budgeted production is 400 units per month, and the output of Q sells for $15 per unit. The transfer price is to be based on standard full cost plus. From what *range* of prices should the transfer price be selected, in order to motivate the managers of both profit centres to both increase output and reduce costs?

Solution

Any transfer price based on **standard** cost plus will motivate managers to cut costs, because favourable variances between standard costs and actual costs will be credited to the division's profits. Managers of each division will also be willing to increase output above the budget of 400 units provided that it is profitable to do so; that is:

(a) In P, provided that the transfer price exceeds the variable cost of $5 per unit

(b) In Q, provided that the transfer price is less than the difference between the fixed selling price ($15) and the variable costs in Q itself ($4). This amount of $11 ($15 – $4) is sometimes called **net marginal revenue**

The range of prices is therefore between $5.01 and $10.99.

Let's do a check. Suppose the transfer price is $9. With absorption based on the **budgeted** output of 400 units what would divisional profits be if output and sales are 400 units or 500 units?

Overheads per unit are $1,200/400 = $3, so the full cost of sales is $(5 + 3) = $8 in division P. In division Q, full cost is $(4 + 2) = $6, plus transfer costs of $9.

At 400 units:

	P	Q	Total
	$	$	$
Sales	–	6,000	6,000
Transfer sales	3,600	–	
Transfer costs	–	(3,600)	
Own full cost of sales	(3,200)	(2,400)	(5,600)
	400	0	400
Under/over absorbed overhead	0	0	0
Profit/(loss)	400	0	400

At 500 units:

	P	*Q*	*Total*
	$	$	$
Sales	–	7,500	7,500
Transfer sales	4,500	–	–
Transfer costs	–	(4,500)	–
Own full cost of sales	(4,000)	(3,000)	(7,000)
	500	0	500
Over absorbed overhead (100 × $3; 100 × $2)	300	200	500
Profit/(loss)	800	200	1,000

Increasing output improves the profit performance of both divisions and the company as a whole, and so decisions on output by the two divisions are likely to be **goal congruent**.

9.3 Summary

To summarise the **transfer price should be set in the range** where:

Variable cost in supplying division	≤	**Selling price minus variable costs (net marginal revenue) in the receiving division**

In fact, if there is no external market, and if the transferred item is the major product of the transferring division, there is a strong argument for suggesting that profit centre accounting is a waste of time.

Profit centres cannot be judged on their commercial performance because there is no way of gauging what a fair revenue for their work should be. It would be more appropriate, perhaps, to treat the transferring 'division' as a cost centre, and to judge performance on the basis of cost variances.

10 Opportunity costs and transfer prices

FAST FORWARD

If a profit-maximising output level has been established, the transfer price should be set such that there is not a more profitable opportunity for individual divisions. In other words transfer prices should include **opportunity costs** of transfer.

10.1 The ideal transfer price

Ideally, a transfer price should be set that enables the individual **divisions** to maximise their profits at a level of output that maximises profit for the **company as a whole**. The transfer price which achieves this is unlikely to be a market-based transfer price (if there is one) and is also unlikely to be a simple cost plus based price.

10.2 An opportunity cost approach

If optimum decisions are to be taken transfer prices should reflect **opportunity costs.**

(a) If profit centre managers are given sufficient autonomy to make their own output and selling decisions, and at the same time their performance is judged by the company according to the profits they earn, they will be keenly aware of all the commercial opportunities.

(b) If transfers are made for the good of the company as a whole, the commercial benefits to the company ought to be **shared** between the participating divisions.

Transfer prices can therefore be reached by:

(a) Recognising the levels of output, external sales and internal transfers that are best for the **company as a whole**, and

(b) Arriving at a transfer price that ensures that all divisions maximise their profits at this same level of output. The transfer price should therefore be such that there is **not a more profitable opportunity** for individual divisions. This in turn means that the opportunity costs of transfer should be covered by the transfer price.

11 Transfer pricing when intermediate products are in short supply

FAST FORWARD

When an **intermediate resource is in short supply** and **acts as a limiting factor** on production in the supplying division, the cost of transferring an item is the variable cost of production plus the contribution obtainable from using the scarce resource in its next most profitable way.

11.1 Example: scarce resources

Suppose, for example, that division A is a profit centre that produces three items, X, Y and Z. Each item has an external market.

	X	*Y*	*Z*
External market price, per unit	$48	$46	$40
Variable cost of production in division A	$33	$24	$28
Labour hours required per unit in division A	3	4	2

Product Y can be transferred to division B, but the maximum quantity that might be required for transfer is 300 units of Y.

The maximum **external** sales are 800 units of X, 500 units of Y and 300 units of Z.

Instead of receiving transfers of product Y from division A, division B could buy similar units of product Y on the open market at a slightly cheaper price of $45 per unit.

What should the transfer price be for each unit if the total labour hours available in division A are 3,800 hours or 5,600 hours?

Solution

Hours required to meet maximum demand:

External sales:	Hours
X (3 × 800)	2,400
Y (4 × 500)	2,000
Z (2 × 300)	600
	5,000
Transfers of Y (4 × 300)	1,200
	6,200

Contribution from external sales:

	X	Y	Z
Contribution per unit	$15	$22	$12
Labour hours per unit	3 hrs	4 hrs	2 hrs
Contribution per labour hour	$5.00	$5.50	$6.00
Priority for selling	3rd	2nd	1st
Total hours needed	2,400	2,000	600

(a) If only **3,800 hours** of labour are available, division A would choose, **ignoring transfers** to B, to sell:

	Hours
300 Z (maximum)	600
500 Y (maximum)	2,000
	2,600
400 X (balance)	1,200
	3,800

To transfer 300 units of Y to division B would involve forgoing the sale of 400 units of X because 1,200 hours would be needed to make the transferred units.

Opportunity cost of transferring units of Y, and the appropriate transfer price:

	$ per unit
Variable cost of making Y	24
Opportunity cost (contribution of $5 per hour available from selling X externally): benefit forgone (4 hours × $5)	20
Transfer price for Y	44

The transfer price for Y should, in this case, be less than the external market price.

(b) If **5,600 hours** are available, there is enough time to meet the full demand for external sales (5,000) and still have 600 hours of spare capacity, before consideration of transfers. However, 1,200 hours are needed to produce the full amount of Y for transfer (300 units), and so 600 hours need to be devoted to producing Y for transfer instead of producing X for external sale.

This means that the **opportunity cost** of transfer is:

(i) the variable cost of 150 units of Y produced in the 600 'spare' hours ($24/unit);

(ii) the variable cost of production of the remaining 150 units of Y ($24 per unit), plus the **contribution forgone** from the external sales of X that could have been produced in the 600 hours now devoted to producing Y for transfer ($5 per labour hour). An average transfer

price per unit could be negotiated for the transfer of the full 300 units (see below), which works out at $34 per unit.

	$
150 units × $24	3,600
150 units × $24	3,600
600 hours × $5 per hour	3,000
Total for 300 units	10,200

In both cases, the opportunity cost of receiving transfers for division B is the price it would have to pay to purchase Y externally – $45 per unit. Thus:

Maximum labour hours in A	*Opportunity cost to A of transfer*	*Opportunity cost to B of transfer*
	$	$
3,800	44	45
5,600	34 (average)	45

In each case any price between the two opportunity costs would be sufficient to persuade B to order 300 units of Y from division A and for division A to agree to transfer them.

11.2 Central information

The only way to be sure that a profit-maximising transfer policy will be implemented is to **dictate the policy from the centre**. This means that the following information must be available centrally.

(a) A precise **breakdown of costs in each division** at all levels of output

(b) **Market information** for each market, indicating the level of demand at a range of prices

(c) Perhaps most vitally, knowledge of the **likely reaction of divisional managers** to a centrally imposed policy that undermines their autonomy and divisional profits

Question — **Transfer prices and opportunity costs**

Try to explain **in your own words** why transfer prices should reflect opportunity costs.

If you cannot do so, start reading this section again. You probably would not be able to do a Paper P5 transfer pricing question unless you can give this explanation.

12 Transfer pricing and a range of limiting factors

FAST FORWARD

If a supplying division is subject to a **range of limiting factors**, the optimum production plan can be derived using a **linear programming model.**

12.1 Example: transfer pricing with a range of limiting factors

LP Ltd has two divisions, division 1 and division 2. Division 1 produces liquid A, all of which is transferred to division 2, and liquid B which can either be sold externally or transferred to division 2. Division 2 uses these liquids to produce its powdered products, X and Y.

Production of liquid A is restricted due to a shortage of skilled labour so that only 4,000 litres can be produced. Liquid B can also only be produced in limited numbers due to a scarcity of ingredients. Only 6,000 litres of liquid B can be made. Details of costs and revenues are as follows.

	A	*B*	*X*	*Y*
	$	$	$	$
Variable cost (division 1)	4	6	–	–
Variable cost (division 2)	–	–	7	5
Selling price	–	9	30	35

One sachet of powder X requires 1 litre of liquid A and 2 litres of liquid B.

One sachet of powder Y requires 2 litres of liquid A and 2 litres of liquid B.

Required

Formulate a linear programming model to determine the optimum production levels and transfer prices.

Solution

Step 1 Work out the contribution obtained from each product

This needs to take account of the usage of A and B by X and Y.

	B	X	Y
Variable costs	6	7	5
Liquid A (l litre/2 litres)	–	4	8
Liquid B (2 litres/2 litres)	–	12	12
	6	23	25
Selling price	9	30	35
Contribution	3	7	10

Step 2 Formulate objective function

The objective is to maximise the corporate contribution by producing the optimum quantities of products B, X and Y. Algebraically this is expressed as follows.

Maximise $3B + 7X + 10Y$

Step 3 Define constraints

The constraints are as follows.

$$1X + 2Y \leq 4{,}000 \quad \text{(labour shortage)}$$
$$B + 2X + 2Y \leq 6{,}000 \quad \text{(ingredients shortage)}$$
$$B, X, Y \geq 0$$

Note: You are only required to be able to formulate the model, not solve it.

In practice, as you probably remember, where there are **more than two variables** in the objective function and more than a few constraints a **computer software package** is needed.

The **output** from the model will show **how many sachets of X and Y should be produced and how many litres, if any, of B should be sold externally.** The output also provides a means of calculating the ideal transfer price, because it indicates the shadow price of scarce resources.

13 Shadow price and transfer prices

FAST FORWARD

Shadow prices replace opportunity costs when determining transfer prices if there are constraints on production.

Key term

The **shadow price** is the maximum amount that a division would be prepared to pay to obtain one extra unit of a scarce resource.

Alternatively, a shadow price could be seen as the opportunity cost of that scarce resource; or the amount of benefit foregone by not having the extra unit of the scarce resource available.

We know already that an **optimal transfer price** can be calculated by **adding together the variable cost of the intermediate product and the opportunity cost of making the transfer.** In our example, let us suppose that the shadow price of liquid A is $3 and of liquid B, $2.

	A	*B*
	$	$
Variable cost	4	6
Shadow price	3	2
Transfer price	7	8

This solution might be tested by the divisional manager of the supplying division by applying his own linear programming model attempting to maximise the contribution from external sales of B (which we shall call B1) and from transfers of A and B.

Maximise 3A + 2B + 3B1

Subject to	A	≤	4,000
	B + B1	≤	6,000
	A, B, B1	≥	0

This would give the same optimum production levels as the original linear programme, because it is derived from the same information.

For division 2, however, these transfer prices would result in each product yielding a contribution of nil. In effect this means that the **optimal solution must be centrally imposed,** otherwise the manager of division 2 will have no incentive to produce X and Y at all.

Question

Transfer prices and shadow prices

In what circumstances are transfer prices calculated using shadow prices?

Answer

As earlier, this is to test how closely you followed the preceding paragraphs. Shadow prices replace opportunity cost in the transfer price formula when there are constraints on production.

14 Negotiated transfer prices

FAST FORWARD

In practice, **negotiated** transfer prices, **market-based** transfer prices and **full cost-based** transfer prices are the methods normally used.

A transfer price based on opportunity cost is often **difficult to identify**, for lack of suitable information about costs and revenues in individual divisions. In this case it is likely that transfer prices will be set by means of **negotiation**. The agreed price may be finalised from a mixture of accounting arithmetic, politics and compromise.

The process of negotiation will be improved if **adequate information** about each division's costs and revenues is made available to the other division involved in the negotiation. By having a free flow of cost and revenue information, it will be easier for divisional managers to identify opportunities for improving profits, to the benefit of both divisions involved in the transfer.

A negotiating system that might enable **goal congruent plans** to be agreed between profit centres is:

(a) Profit centres **submit plans** for output and sales to head office, as a preliminary step in preparing the annual budget.

(b) Head office **reviews these plans**, together with any other information it may obtain. Amendments to divisional plans might be discussed with the divisional managers.

(c) Once divisional plans are acceptable to head office and **consistent** with each other, head office might let the divisional managers arrange budgeted transfers and transfer prices.

(d) Where divisional plans are **inconsistent** with each other, head office might try to establish a plan that would maximise the profits of the company as a whole. Divisional managers would then be asked to negotiate budgeted transfers and transfer prices on this basis.

(e) If divisional managers fail to agree a transfer price between themselves, a head office **'arbitration' manager** or team would be referred to for an opinion or a decision.

(f) Divisions **finalise their budgets** within the framework of agreed transfer prices and resource constraints.

(g) Head office **monitors the profit performance** of each division.

15 Multinational transfer pricing

FAST FORWARD

Multinational transfer pricing needs to take account of a range of factors.

- Exchange rate fluctuations
- Taxation in different countries
- Import tariffs
- Anti-dumping legislation
- Competitive pressures
- Repatriation of funds
- Exchange controls

Globalisation, the rise of the **multinational corporation** and the fact that more than **60% of world trade takes place within multinational organisations** mean that international transfer pricing is very important.

15.1 Factors to consider when setting multinational transfer prices

The level at which a transfer price should be set is even less clear cut for organisations operating in a number of countries, when even more factors need to be taken into consideration. Moreover, the manipulation of profits through the use of transfer pricing is a common area of confrontation between multinational organisations and host country governments.

Factors to consider	Explanation
Exchange rate fluctuation	The value of a transfer of goods between profit centres in different countries could depend on fluctuations in the currency exchange rate.
Taxation in different countries	If taxation on profits is 20% of profits in Country A and 50% on profits in Country B, a company will presumably try to 'manipulate' profits (by means of raising or lowering transfer prices or by invoicing the subsidiary in the high-tax country for 'services' provided by the subsidiary in the low-tax country) so that profits are maximised for a subsidiary in Country A, by reducing profits for a subsidiary in Country B. Some multinationals set up marketing subsidiaries in countries with low tax rates and transfer products to them at a relatively low transfer price. When the products are sold to the final customer, a low rate of tax will be paid on the difference between the two prices.
Import tariffs	Suppose that Country A imposes an import tariff of 20% on the value of goods imported. A multi-national company has a subsidiary in Country A which imports goods from a subsidiary in Country B. In such a situation, the company would minimise costs by keeping the transfer price to a minimum value.

Factors to consider	Explanation
Exchange controls	If a country imposes restrictions on the transfer of profits from domestic subsidiaries to foreign multinationals, the restrictions on the transfer can be overcome if head office provides some goods or services to the subsidiary and charges exorbitantly high prices, disguising the 'profits' as sales revenue, and transferring them from one country to the other. The ethics of such an approach should, of course, be questioned.
Anti-dumping legislation	Governments may take action to protect home industries by preventing companies from transferring goods cheaply into their countries. They may do this, for example, by insisting on the use of a fair market value for the transfer price.
Competitive pressures	Transfer pricing can be used to enable profit centres to match or undercut local competitors. (For example, if a transferee division (receiving goods from another division within a company) is facing intense competition in its local market, its 'costs' could be reduced by adjusting the transfer price, thereby allowing it to be more competitive in its local market.)
Repatriation of funds	By inflating transfer prices for goods sold to subsidiaries in countries where inflation is high, the subsidiaries' profits are reduced and funds repatriated, thereby saving their value.

15.2 Transfer prices and tax

Tax authorities obviously recognise the **incentive to set transfer prices to minimise taxes and import tariffs**. Many **tax authorities** have the **power** to **modify transfer prices in computing tariffs or taxes on profit**, although a **genuine arms-length market price should be accepted**.

(a) UK government legislation restricts how far companies can declare their profits in a low taxation country. Some scope for profit apportionment between divisions clearly exists, however. HM Revenue and Customs has the power to adjust the taxable income of the UK party to a cross-border transaction to the figure that would have resulted if the **prices actually used had been between two unrelated parties** (**'arm's length' price**).

(b) In the USA, multinational organisations must follow an Internal Revenue Code specifying that transfers must be priced at 'arm's length' market values, or at the values that would be used if the divisions were independent companies. Even with this rule, companies have some leeway in deciding an appropriate 'arm's length' price.

To meet the multiple objectives of transfer pricing, companies may choose to maintain **two sets of accounting records, one for tax reporting and one for internal management reporting**. The tax authorities may interpret the use of two sets of records as **suggestive of profit manipulation**, however.

Double taxation agreements between countries mean that companies pay tax on specific transactions in one country only. If a company sets an unrealistically low transfer price, however, the company will pay tax in both countries (double taxation) if it is spotted by the tax authorities.

Most countries now accept the Organisation for Economic Co-operation and Development (OECD) 2010 guidelines *Transfer Pricing for Multinational Enterprises and Tax Administrations.* These aim to standardise national approaches to transfer pricing and provide guidance on the application of the 'arm's length' price.

15.2.1 Example: arm's length transfer price

Suppose division A produces product B in a country where the income tax rate is 30% and transfers it to division C, which operates in a country with a 40% rate of income tax. An import duty equal to 25% of the price of product B is also assessed. The full cost per unit is $290, the variable cost $160.

Required

The tax authorities allow either variable or full cost transfer prices. Determine which should be chosen.

Solution

Effect of transferring at $290 instead of $160

	$
Income of A is $130 higher and so A pays $130 × 30% more income tax	(39.0)
Income of C is $130 lower and so C pays $130 × 40% less income tax	52.0
Import duty is paid by C on an additional $130, and so C pays $130 × 25% more duty	(32.5)
Net effect (cost) of transferring at $290 instead of $160	(19.5)

15.3 The pros and cons of different transfer pricing bases

(a) A transfer price at **market value** is usually encouraged by the tax and customs authorities of both host and home countries as they will receive a fair share of the profits made but there are problems with its use.

  (i) Prices for the same product may vary considerably from one country to another.

  (ii) Changes in exchange rates, local taxes and so on can result in large variations in selling price.

  (iii) A division will want to set its prices in relation to the supply and demand conditions present in the country in question to ensure that it can compete in that country.

(b) A transfer price at **full cost** is usually acceptable to tax and customs authorities since it provides some indication that the transfer price approximates to the real cost of supplying the item and because it indicates that they will therefore receive a fair share of tax and tariff revenues.

(c) Transfer prices at **variable cost** are unlikely to be acceptable to the tax authorities of the country in which the supplying division is based as all the profits are allocated to the receiving division and the supplying division makes a loss equal to the fixed costs incurred.

(d) In a multinational organisation, **negotiated** transfer prices may result in overall sub-optimisation because no account is taken of factors such as differences in tax and tariff rates between countries.

Question — Multinational transfer pricing

RBN is a Polish parent company with an overseas subsidiary. The directors of RBN wish to transfer profits from Poland to the overseas company. They are considering changing the level of the transfer prices charged on goods shipped from the overseas subsidiary to Polish subsidiaries and the size of the royalty payments paid by Polish subsidiaries to the overseas subsidiary.

Required

In order to transfer profit from Poland to the overseas subsidiary, explain very briefly what the directors of RBN should do.

Answer

They should increase both the transfer prices and royalty payments

To increase the overseas subsidiary's profit, the transfer price needs to be higher (since it is the overseas subsidiary doing the selling) and the royalty payments by the Polish subsidiaries to the overseas subsidiary company should also be higher. Both would add to the overseas subsidiary's revenue without affecting its costs.

Question

More multinational transfer pricing

LL Multinational plc transferred 4,000 units of product S from its manufacturing division in the USA to the selling division in the UK in the year to 31 December.

Each unit of S cost $350 to manufacture, the variable cost proportion being 75%, and was sold for $600. The UK division incurred marketing and distribution costs of $8 per unit. The UK tax rate was 30% and the exchange rate £ = $1.5.

The market price for each unit of product S in the USA was $600. The USA's division's profit after tax for its sales to the UK division for the year just ended was $750,000.

Required

(a) If the transfers were at variable cost, calculate the UK division's profit after tax.
(b) Calculate the tax rate in the USA if product S was transferred at the USA market price.

Answer

(a)

	$
External sales ($600 × 4,000)	2,400,000
Variable cost (transfer price of ($350 × 75%/$1.5) × 4,000)	700,000
Marketing and distribution costs ($8 × 4,000)	32,000
Profit before tax	1,668,000
Tax at 30%	500,400
Profit after tax	1,167,600

(b)

	$
Transfer sales ($600 × 4,000)	2,400,000
Costs ($350 × 4,000)	1,400,000
Profit before tax	1,000,000
Tax	?
Profit after tax	750,000

Therefore tax = $(1,000,000 – 750,000) = $250,000

Therefore tax rate = ($250,000/1,000,000) = 25%

Chapter Roundup

- We considered the **divisional form or structure** for an organisation in Chapter 3, when we looked at the information needs of businesses adopting this form. This chapter also discussed the pros and cons of adopting the divisional form, including ease of performance measurement.
- One of the problems of measuring managerial performance is **segregating managerial performance from the economic performance of their department or division**.
- It is necessary for **control purposes** that some **record** of the market in inter-divisional goods or services should be kept. One way of doing this is through the accounting system. Inter-divisional work can be given a cost or a charge: a transfer price.
- Transfer prices are a way of promoting **divisional autonomy**, ideally without prejudicing **divisional performance measurement** or discouraging overall **corporate profit maximisation (goal congruence)**.
- Transfer prices may be based on **market price** (or an **adjusted market price**) where there is an external market for the item being transferred.
- Problems arise with **cost-based** transfer prices because one party or the other is liable to perceive them as unfair.
- **Fixed costs** in the supplying division can be accounted for in a number of ways to ensure that it at least breaks even.
- **Standard costs** should be used for transfer prices to avoid encouraging inefficiency in the supplying division.
- With **no external market**, the transfer price should be set in the range where variable cost in the supplying division are less than or equal to net marginal revenue in the receiving division.
- If a profit-maximising output level has been established, the transfer price should be set such that there is not a more profitable opportunity for individual divisions. In other words transfer prices should include **opportunity costs** of transfer.
- When an **intermediate resource is in short supply** and **acts as a limiting factor** on production in the supplying division, the cost of transferring an item is the variable cost of production plus the contribution obtainable from using the scarce resource in its next most profitable way.
- If a supplying division is subject to a range of limiting factors, the optimum production plan can be derived using a **linear programming model.**
- **Shadow prices** replace opportunity costs when determining transfer prices if there are constraints on production.
- In practice, **negotiated** transfer prices, **market-based** transfer prices and **full cost-based** transfer prices are the methods normally used.
- **Multinational transfer pricing** needs to take account of a range of factors.
  - Exchange rate fluctuations
  - Taxation in different countries
  - Import tariffs
  - Exchange controls
  - Anti-dumping legislation
  - Competitive pressures
  - Repatriation of funds

Quick Quiz

1 To prevent dysfunctional transfer price decision making, profit centres must be allowed to make autonomous decisions. *True or false?*

2 Which of the following is/are true:

(i) Controllable profit is an acceptable measure of divisional performance
(ii) Divisional profit is an acceptable measure of managerial performance.

A (i) only
B (ii) only
C (i) and (ii)
D Neither of them

3 Which of the following is not a disadvantage of using market value as a transfer price?

A The market price might be a temporary one.
B Use of market price might act as a disincentive to use up spare capacity.
C Many products do not have an equivalent market price.
D The external market might be perfect.

4 *Fill in the blanks.*

Ideally, a transfer price should be set that enables the individual divisions to maximise their profits at a level of output that maximises …… .

The transfer price which achieves this is unlikely to be a …….. transfer price or a ……. transfer price.

If optimum decisions are to be taken, transfer prices should reflect …… .

5 *Choose the appropriate word(s) from those highlighted.*

When an intermediate resource is in short supply and acts as a limiting factor on production in the **transferring/receiving** division, the cost of transferring an item is the **variable/ fixed/opportunity** cost of production **plus/less** the **contribution obtainable/opportunity cost** from using the scarce resource in its next most profitable way.

6 Which of the following is/are true:

(i) Transfer prices based on standard costs provide an incentive for the receiving division to control costs

(ii) One of the disadvantages of using negotiated transfer prices to evaluate divisional performance is that the price depends on the negotiating skills of the divisional managers

A Neither of them
B (i) only
C (ii) only
D Both of them

Answers to Quick Quiz

1 False. They cannot be allowed to make entirely autonomous decisions.

2 D Neither of them.

Controllable profit may be an acceptable measure of managerial performance, while divisional profit may be an acceptable measure of divisional performance. Divisional performance should be based on the total economic performance of a division, whereas managers should only be assessed on results within their control.

3 D

4 profit for the company as a whole; market-based; cost-based; opportunity cost

5 transferring
variable
plus
contribution obtainable

6 C

Option (i) is false; transfer prices based on standard costs provide an incentive for the *transferring* division to control costs (not the *receiving* division.)

Option (ii) is true. A negotiated transfer price is the result of a bargaining procedure between the selling unit and the purchasing unit, so there is a danger that the price may be decided by the negotiating skills and bargaining power of one the divisions, rather than being an 'optimal' price.

Now try the question below from the Question Bank

Number	Level	Marks	Time
Q13	Examination	20	36 mins