10

Presenting Management Information

Presenting Management Information

10

Learning Outcomes

After completing this chapter you should be able to:

- explain the difference between subjective and objective classifications of expenditure and the importance of tracing costs both to products/services and to responsibility centres;
- construct coding systems that facilitate both subjective and objective classification of costs;
- prepare financial statements that inform management;
- explain why gross revenue, value added, contribution, gross margin, marketing expense, general and administration expense, etc. might be highlighted in management reporting;
- compare and contrast management reports in a range of organisations including commercial enterprises, charities and public sector undertakings.

10.1 Introduction

In this chapter, you will be learning about the effective presentation of management accounting reports to managers so that they have the information they need to be able to manage their area of responsibility in the most effective way.

You will be learning how these reports might be structured and about a range of different performance measures that might be highlighted in management reports in a variety of different types of organisation.

10.2 Subjective and objective classification

In chapter 1 of this text, you learned that the classification of costs involved arranging the costs into logical groups by nature, purpose or responsibility.

You saw that classification by nature involves grouping costs according to whether they are material cost, labour cost or expenses. This classification is referred to as *subjective classification*.

Classification by purpose involves grouping costs according to the reason they are incurred, for example, whether they are a direct or indirect cost of a particular cost object. This classification is referred to as *objective classification*.

10.2.1 Responsibility centres

Classification by responsibility involves grouping costs according to which individual manager or management team is responsible for the control of the cost. A responsibility accounting system divides an organisation into several parts, or responsibility centres, with an individual manager responsible for the operation and performance of each responsibility centre.

10.2.2 Reporting management accounting information

The different systems of classification allow expenditure to be reported in different ways, according to the reason why the information is being provided.

For example, managers might be interested in assessing the profitability of a particular product or service, in which case, costs might be classified by purpose (objective classification) so that they can be traced to individual products or services.

Alternatively, managers might be interested in assessing the expenditure incurred by a particular responsibility centre within the organisation. In this situation, it would be more useful to trace expenditure to individual responsibility centres rather than to particular products or services.

10.3 Coding of costs

The CIMA *Terminology* defines a code as a 'brief, accurate reference designed to assist classification of items by facilitating entry, collation and analysis'.

The coding system is based on the selected cost classifications. It provides a way of expressing the classification of each cost or item of expenditure in a shortened symbolised form.

10.3.1 Composite codes

The CIMA *Terminology* describes the use of composite symbols in codes. For example, let us consider the hypothetical composite symbol 298.311.

The first three digits might indicate the nature of the expenditure.

Remember this is the subjective classification of the expenditure.

2 – labour
9 – semi-skilled
8 – grade 8

Anyone who is familiar with the coding system would be able to identify that the expenditure was incurred on grade 8 semi-skilled labour.

The last three digits might indicate the cost object to be charged, for example, a particular cost unit or cost centre.

Remember this is the objective classification of the expenditure.

3 – indirect cost
1 – north east factory
1 – machining department

The code can indicate that the expenditure is to be charged as indirect labour to the machining department in the north east factory.

The code number 298.311 is much clearer than this lengthy description of where the cost is to be charged.

10.3.2 The advantages of a coding system

Some of the advantages of a well-designed coding system are as follows.

- A code is usually briefer than a description. The example in the previous section demonstrates this advantage very clearly. This saves time in a manual system and reduces the data storage capacity required in a computerised system.
- A coding system enables costs to be accumulated for each code number so that they can be logically grouped for reporting to managers.
- A code reduces ambiguity. Two people might each use a quite different description for the same item of expenditure but a code will be more precise.
- A code is more suitable than a description in computerised systems so that data processing is facilitated.

Exercise 10.1

The XY Manufacturing Company uses a four digit code to classify its expenditure items.

- The first digit indicates the responsibility centre to be charged.
  1 = responsibility centre 1, 2 = responsibility centre 2 and so on.
- The second digit indicates the machine group within the responsibility centre that has incurred the cost.
  1 = machine group 1, 2 = machine group 2 and so on.
- The last two digits indicate the nature of the expenditure.
  For example, 01 = direct materials, 02 = indirect materials, 03 = direct labour, 11 = depreciation, 12 = power cost and so on.

(a) State the code number that would be used for the following two expenditure items.

  (i) Direct labour cost incurred in machine group 4 within responsibility centre 2
  (ii) Power cost incurred on machine group 1 within responsibility centre 1

(b) State the expenditure that is represented by the code number 2202.

Solution

(a) (i) 2403
  (ii) 1112
(b) Indirect material cost incurred in machine group 2 within responsibility centre 2

10.3.3 The requirements for an efficient coding system

(a) The code should be unique and certain, that is, each item should have only one possible code number which can easily be identified from the structure of the code.
(b) The coding system should be comprehensive and elastic, that is, it should be possible to identify a code for every item and the coding system should be capable of expanding to accommodate new items.
(c) The code should be as brief as possible, having regard to the amount of detail which is needed in the analysis of the items being coded.
(d) To minimise errors, the code should incorporate check digits so that a computerised system can detect coding errors.
(e) The maintenance of the coding system should be centrally controlled. It should not be possible for individuals to independently add new codes to the existing coding system.
(f) Wherever possible, all codes should be of the same length. This makes errors easier to spot and it assists computerised data processing.

10.4 Preparing financial statements that inform management

The usefulness of a financial statement is greatly enhanced if it highlights subtotals, totals and performance measures that are relevant to the recipient. This enables the manager who receives the information to focus on the most relevant information from a point of view of management action.

A performance measure will be particularly relevant if it is controllable by the manager for whom the report is prepared, that is if the manager is able to take action to influence the measure, and if an improvement in the performance measure would improve the performance of the responsibility centre or the organisation overall.

Let us look now at a number of performance measures that you might see highlighted in management reports.

10.4.1 Value added

Value added is a performance measure which is sometimes used as an alternative to profit. Traditionally, value added is calculated as follows.

$$\text{Value added} = \text{sales revenue} - \text{cost of materials and bought-in services}$$

Since value added excludes all bought-in costs paid to people from outside the organisation, it effectively focuses on the additional revenue created by the organisation's own internal efforts. For this reason it is sometimes used as the basis for labour incentive schemes.

You might sometimes see value added calculated by 'working backwards' from the profit figure:

$$\text{Value added} = \text{profit} + \text{interest} + \text{all conversion costs}$$

You should remember from the last chapter that conversion costs are the costs of converting raw material into the finished product. Conversion costs include direct labour and production overhead costs.

This calculation method is intended to give the same result for the value added. However, it will only do so if bought-in overhead costs are treated as non-conversion costs.

If you have to calculate value added in an assessment question then you should use the traditional method of calculation, i.e. sales revenue – cost of materials and bought-in services.

10.4.2 Contribution

You should remember from earlier in this text that contribution is calculated as follows.

Contribution = sales revenue − variable costs

Contribution is often highlighted in management reports when it is important for managers to be able to see whether individual cost objects are generating sufficient revenue to cover the variable costs they incur.

Highlighting contribution can also help managers to see the potential effect on profit of an increase or decrease in activity. For example, if it is assumed that variable costs are linear and that the selling price per unit is constant, then the contribution earned will change in direct proportion to the change in activity.

Example: a product contribution analysis

This example will demonstrate why it might be important to highlight the contribution earned by each product.

	Product A £000	Product B £000	Product C £000	Total £000
Gross revenue	931	244	954	2,129
Variable costs:				
Direct material and labour	547	87	432	1,066
Variable production overhead	54	58	179	291
Variable marketing expense	9	3	7	19
Total variable cost	610	148	618	1,376
Contribution	321	96	336	753
Fixed production overhead	43	35	34	112
Fixed marketing expense	38	10	40	88
Fixed general and administration expense	60	56	60	176
Profit/(loss)	180	(5)	202	377
Contribution to sales (PV) ratio	34.5%	39.3%	35.2%	

This product contribution analysis reveals the following:

- Product B appears to be incurring a loss. Its contribution is not sufficient to cover the fixed production, marketing, general and administration expenses attributed to it.
- However the product is earning a contribution. If the fixed costs attributed to product B are costs that would be incurred anyway, even if product B was discontinued, then it may be worth continuing the sale and production of product B since it does earn a

contribution of £96,000 towards these fixed costs. If product B was discontinued then this £96,000 contribution would be forgone.

- Although product B is earning a contribution, it does not at present generate sufficient contribution to cover its fair share of support costs such as marketing, general and administration overhead. The profitability of product B does require management attention.
- Product B earns the highest contribution to sales ratio. This means that if gross sales revenue of product B can be increased without affecting the fixed costs, the resulting increase in contribution will be higher than with the same sales increase on products A and C. Thus the key to product B's profitability might be to increase the volume sold.

10.4.3 Gross margin

Gross margin is the difference between the sales revenue and the direct production or purchasing costs incurred. Indirect costs or overheads are then deducted from the gross margin to determine the net profit.

The gross margin percentage is also useful. It is the gross margin calculated as a percentage of the sales revenue and it helps to highlight the relationship between sales revenues and production/purchasing costs.

Look at the following example.

Example: a gross margin analysis

The following extract is taken from the monthly managerial report of the DD Organisation.

	Month 1	Month 2	Month 3	Month 4
	£000	£000	£000	£000
Gross sales revenue	896	911	919	935
Direct cost of goods sold	699	713	722	737
Gross margin	197	198	197	198
Gross margin percentage	22.0%	21.7%	21.4%	21.2%

This gross margin analysis focuses managers' attention on the relationship between the sales value and the direct cost of sales, before indirect costs or overheads are taken into account. This analysis reveals the following:

- Although the gross sales revenue is steadily increasing, the gross margin is relatively constant each month.
- The gross margin percentage is steadily decreasing each month. If the gross margin percentage could have been maintained at 22% the total gross margin earned would have been higher.
- Perhaps selling prices are being increased but the reduction in the gross margin percentage might be the result of a failure to increase selling prices sufficiently in line with increasing direct costs.
- Alternatively the sales volume might be increasing but direct costs are not being contained as the sales increase.

10.5 Managerial reports in a service organisation

There is a very wide variety of service organisations, ranging from private sector organisations such as hotels and courier services, to public sector organisations such as hospitals and schools.

One aspect of services that can present difficulties for the information provider is establishing a suitable cost unit.

10.5.1 Establishing a suitable cost unit

Many service organisations produce an intangible 'output', that is, their output has no physical substance and it cannot be physically seen and touched. In order to maintain effective cost control it is essential to establish a measurable cost unit for which we can ascertain and monitor the costs.

In Chapter 1 we saw how composite cost units are often used to monitor and control the costs in service operations. Any cost unit can be used as long as it can be objectively measured and its cost can be determined and compared from one period to another and if possible from one organisation to another.

Exercise 10.2

Suggest a composite cost unit that could be used in each of these service organisations: (i) hotel; (ii) hospital; (iii) haulage contractor.

Solution

(i) Hotel: bed-night or room-night.
(ii) Hospital: in-patient day.
(iii) Haulage contractor: tonne-kilometre.

10.5.2 Establishing the cost per unit

Once a suitable cost unit has been selected, the cost for each unit can be determined using an averaging method:

$$\text{Average cost per unit of service} = \frac{\text{Total costs incurred in period}}{\text{Number of units of service supplied in the period}}$$

10.5.3 The instantaneous and perishable nature of services

Many services are provided instantaneously rather than for inventory; for example, a restaurant meal is cooked as it is ordered by the customer. This brings with it particular management problems of planning and control but it does mean that the incidence of work in progress is very low, that is, it is rarely necessary to value part-finished units of service at the end of an accounting period.

Many services also 'perish' immediately; for example, if a cinema seat is vacant when a film is showing it cannot be stored in inventory for a later sale. The opportunity to gain revenue from that seat at that particular showing of the film has been lost forever. Therefore, capacity utilisation becomes a very important issue for managers in many service organisations.

Example: managerial reporting in a consultancy business

As you read through this example, notice that we are applying all of the principles of cost analysis that you have already learned about in this *Learning System*. The only difference is that the principles are being applied to determine the cost of intangible services, rather than of tangible products.

Mr G and Mrs H have recently formed a consultancy business and they wish to establish the following rates to charge clients:

- an hourly rate for productive client work;
- an hourly rate for time spent travelling to/from the clients' premises;
- a rate per mile for expenses incurred in travelling to/from the clients' premises.

Pricing policy

Mr G and Mrs H have decided that their pricing policy will be based on the cost per hour plus a 5 per cent profit mark-up. Travelling time will be charged to clients at one-third of the normal hourly rate. Travelling expenses will be charged to clients at cost.

Activity estimates

Mr G and Mrs H each expect to work for 8 hours per day, 5 days per week, 45 weeks per year. They refer to this as 'available time'.

- Twenty-five per cent of the available time will be spent dealing with administrative matters relating to the general running of the business.
- In the first year, 22.5 per cent of the available time will be idle, that is, no work will be done in this time.
- The remainder of the available time is expected to be chargeable to clients.
- Travelling time will amount to 25 per cent of the chargeable time, during which a total of 18,000 miles will be travelled.

Cost estimates

- Mr G and Mrs H each wish to receive a salary of £25,000 in the first year of trading.
- Other costs to be incurred in the first year of trading:

	£
Electricity	1,200
Fuel for vehicles	1,800
Depreciation of vehicles	6,000
Insurance – professional liability and office	600
Vehicle insurance and road tax	1,080
Office rent and rates	8,400
Telephone expenses	3,000
General office expenses	8,900
Servicing and repair of vehicles	1,200

Requirement

Prepare a summary report for Mr G and Mrs H which states the client charge rates that they wish to establish.

Solution

If you look back to Section 10.5.2 you will be reminded that we need to know two things in order to establish the cost per unit of service:

(1) the total costs incurred in the period;
(2) the number of units of service supplied in the period.

We need to classify the costs provided to determine the total cost associated with travelling, and that associated with providing consultancy services.

	Consultancy £	*Travelling* £
Salaries	50,000	
Electricity	1,200	
Fuel		1,800
Depreciation		6,000
Insurance	600	
Vehicle insurance, etc.		1,080
Office rent and rates	8,400	
Telephone expenses	3,000	
General office expenses	8,900	
Servicing vehicles, etc.		1,200
	72,100	10,080

Now we need to determine the number of units of service by which each of these cost totals is to be divided. The calculation of the rate per mile for travelling expenses is relatively straightforward:

$$\text{Rate per mile} = \frac{\text{Total travelling expenses}}{\text{Miles travelled}} = \frac{£10{,}080}{18{,}000} = £0.56 \text{ per mile}$$

The calculation of the hourly rate for productive work and travelling time is a little more complicated. The first step is to determine the number of units of service supplied, that is, the chargeable hours. We need to look at the activity estimates provided in order to analyse the available time.

		Hours
Total available hours for the first year = 2 people × 8 hours × 5 days × 45 weeks		3,600
Less: administration time	25.0%	
idle time	22.5%	
	47.5% × 3,600	(1,710)
Time chargeable to clients		1,890
Productive time spent with clients (75%)		1,417.5
Travelling time (25%)		472.5

Travelling time will be charged at one-third of the normal hourly rate, therefore we need to calculate a 'weighted' figure for chargeable time.

$$\text{Weighted chargeable time} = 1{,}417.5 + \frac{472.5}{3} = 1{,}575 \text{ hours}$$

Now we can combine the consultancy services costs and the weighted chargeable time to determine an hourly rate for each type of work.

$$\text{Cost per chargeable hour} = \frac{£72{,}100}{1{,}575} = £45.78$$

Hourly rate for productive client work = £45.78 + 5% profit mark-up = £48.07 per hour, say £48 per hour

$$\text{Hourly rate for travelling time} = \frac{£48.07}{3} = £16.02 \text{ per hour, say } £16 \text{ per hour}$$

Summary report: client charge rates
To: Mr G and Mrs H
From: AN Other
Date: xx.xx.xx
Subject: Client charge rates

REPORT

In response to your request, in accordance with the cost and activity data provided, I detail below the required charge rates to clients.

Hourly rate for productive client work	£48
Hourly rate for travelling time	£16
Rate per mile for travelling expenses	£0.56

Exercise 10.3

The following data is available for the Central Hospital for the latest period.

Use this data to calculate the following cost control measures for the monthly management report, to the nearest penny.

(a) Operating theatre cost per hour
(b) Admission costs per patient
(c) Patient care cost per night

Activity data	
Number of patients	1,040
Number of patient nights	4,750
Number of operating theatres	5
Number of days theatres in use during month	26
Number of hours theatres used per day	15

Cost data	£
Operating theatre costs in total	510,000
Updating patient records on admission	33,900
Bed scheduling costs	20,833
Nursing	1,077,000
Patient catering costs	244,200
Medical supplies	120,000
Patient laundry costs	100,000
Other patient care costs	60,900

Solution

(a) Number of theatre hours = 5 theatres × 26 days × 15 hours = 1,950
Operating theatre cost per hour = £510,000/1,950 = £261.54

(b)

Admission costs	£
Updating patient records	33,900
Bed scheduling	20,833
Total admission costs	54,733

Admission costs per patient = £54,733/1,040 = £52.63

(c)

Patient care costs	£
Nursing	1,077,000
Patient catering costs	244,200
Medical supplies	120,000
Patient laundry costs	100,000
Other patient care costs	60,900
Total patient care costs	1,602,100

Patient care cost per patient night = £1,602,100/4,750 = £337.28

10.5.4 Managerial reporting in a charity: example

The TW Care Charity has just completed an overseas aid programme to assist homeless orphans. Cost and revenue data concerning the programme are as follows.

	£
Income from donations	157,750
Grants received from government and others	62,000
Fundraising costs	23,900
Direct staff costs, including travel and insurance	68,800
Medical supplies and temporary accommodation	78,120
Food, blankets and clothes	17,100
Transport costs	24,300
Other direct costs	9,800
Apportioned administrative support costs	13,200

Requirement

Prepare a statement to enable managers to monitor the total net cost of the aid programme, highlighting any subtotals that you think may be useful to the managers.

Solution

TW Care Charity
Report on overseas aid programme

	£	£
Income from donations		157,750
Grants received from government and others		62,000
Gross revenue		219,750
Less fundraising costs		23,900
Net revenue		195,850
Direct staff costs, including travel and insurance	68,800	
Medical supplies and temporary accommodation	78,120	
Food, blankets, clothes	17,100	
Transport costs	24,300	
Other direct costs	9,800	
Total direct cost		198,120
Net direct cost of programme		(2,270)
Apportioned administrative support costs		13,200
Total net cost of programme		15,470

Points to note about the statement are as follows.

- The fundraising costs are netted off against the gross revenue. Managers can use the resulting net revenue to monitor the effectiveness of the fundraising activities undertaken.
- Direct costs of the programme are highlighted separately. Managers are able to see whether the net revenue from the fundraising efforts was sufficient to cover the directly identifiable costs of undertaking the programme. In this case, the direct costs exceeded the net fundraising revenue by £2,270.
- Administrative support costs are apportioned so that managers can see the final net impact of this programme on the charity's resources.

10.6 Summary

Having read this chapter the main points you should understand are as follows.

1. Costs can be classified according to their nature, purpose or responsibility.
2. Classification by nature is known as subjective classification.
3. Classification by purpose is known as objective classification.
4. A coding system provides a means of expressing the classification of expenditure in a shortened symbolised form, and a means of accumulating data for analysis purposes.
5. Value added focuses on the value created by an organisation's own efforts. It can be calculated as: sales revenue less cost of materials and bought-in services, or as profit plus interest plus all conversion costs.
6. The output of service organisations is often intangible and 'instantly perishable'. With many services it is impossible to produce the service to hold in inventory for sale at a later date. Capacity utilisation is therefore important.
7. Composite cost units are often used to monitor and control costs in a service organisation.

Revision Questions 10

Question 1 Multiple choice

1.1 State which of the following are characteristics of managerial reports prepared in a service organisation:

(i) a low incidence of work in progress at the end of a period
(ii) the use of composite cost units
(iii) the use of equivalent units

(A) (i) only
(B) (i) and (ii) only
(C) (ii) only
(D) (i), (ii) and (iii)

1.2 Which of the following is a correct calculation of value added:

(A) Sales revenue − variable production costs
(B) Sales revenue − direct labour costs
(C) Sales revenue − all bought-in costs
(D) Sales revenue − all variable costs.

1.3 An item of expenditure has the composite code number 109.433. The digits 109 indicate the nature of the expenditure, that is, whether it is material, labour or expense. This is:

(A) classification by cost behaviour
(B) classification by responsibility
(C) objective classification
(D) subjective classification

1.4 Records for a passenger limousine company reveal the following data for last period.

No. of passengers	*Miles travelled*
80	4
40	5
90	6
100	7
140	8
180	9
150	10

The drivers' wages cost incurred was £1,100.
The drivers' wages cost per passenger mile was (to the nearest penny):

(A) £0.03
(B) £0.18
(C) £1.41
(D) £22.45

Question 2 Short objective-test questions

2.1 Match the organisations with the most appropriate cost unit by writing (a), (b), (c), (d) or (e) in the box provided.

Organisations

- Hotel ☐
- Transport service ☐
- College ☐
- Restaurant ☐
- Accountancy service ☐

Cost units

(a) Enrolled student
(b) Meal served
(c) Chargeable hour
(d) Room night
(e) Tonne-kilometre

2.2 Happy Stays hotel has 345 rooms. During the latest week, the following data was collected concerning unoccupied rooms.

Day	*Number of unoccupied rooms*
Monday	77
Tuesday	43
Wednesday	26
Thursday	31
Friday	17
Saturday	12
Sunday	88

(a) The number of occupied room nights during the week was ☐.
(b) The overall percentage room occupancy rate during the week was ☐ % (to the nearest whole number).

Question 3 Managerial reporting for a service organisation

Happy Returns Ltd operates a haulage business with three vehicles. The following estimated operating costs and performance data are available:

Petrol	£0.50 per km on average
Repairs	£0.30 per km
Depreciation	£1.00 per km, plus £50 per week per vehicle
Drivers' wages	£300.00 per week per vehicle
Supervision costs	£550.00 per week
Loading costs	£6.00 per tonne

During week 26 it is expected that all three vehicles will be used, 280 tonnes will be loaded and a total of 3,950 km travelled (including return journeys when empty) as shown in the following table:

Journey	*Tonnes carried (one way)*	*Kilometres (one way)*
1	34	180
2	28	265
3	40	390
4	32	115
5	26	220
6	40	480
7	29	90
8	26	100
9	25	135
	280	1,975

Requirements

(a) The total variable operating cost incurred in week 26 was £ [ ].

(b) The total fixed operating cost incurred in week 26 was £ [ ].

(c) The total cost for week 26, including administration cost, amounted to £13,265. To the nearest penny, the average total cost per tonne-kilometre for week 26 was £ [ ].

Question 4 Managerial reporting for a service organisation

The Ludford Hotel and Conference Centre is used for conference bookings and private guest bookings. Conference bookings use some bedrooms each week, the balance being available for private guests.

Data has been collected relating to private guest bookings (i.e., non-conference bookings) which are summarised below for a 10-week period.

Week	*Double rooms available for private guest bookings*	*Number of guests*	*Average stay (nights)*
1	55	198	2.1
2	60	170	2.6
3	72	462	1.4
4	80	381	3.2
5	44	83	5.6
6	62	164	3.4
7	80	348	2.6
8	54	205	1.7
9	80	442	1.8
10	24	84	3.2

Some of the costs for private guest bookings vary with the number of guests, regardless of the length of their stay, while others vary with the number of rooms available in any week.

Variable cost per guest	£17.50
Variable cost per week per room available	£56.00

The general fixed cost for private guest bookings per week is £8,100.

Requirements

(a) To the nearest penny, the total costs for private guests' bookings for the 10-week period is £ ☐.

(b) To the nearest whole number, the number of private guest-nights achieved in the 10-week period is ☐.

(c) The number of private guest-nights available for the 10-week period is ☐.

Solutions to Revision Questions 10

Solution 1

Do not rush the narrative multiple choice questions. Take the time to read each question carefully because some of the distractors seem very similar when they are read in a hurry.

1.1 Answer: (B)

Many services are consumed as soon as they are made available to the customer. They cannot be held in inventory for sale at a later date. Therefore there is a low incidence of work in progress at the end of a period.

Composite cost units are often used because they are more useful for control purposes, for example in a haulage company a cost per tonne mile might be more useful for planning and control purposes than a simple cost per tonne.

Equivalent units are more likely to be used in process costing.

1.2 Answer: (C)

Direct labour is not a bought-in cost therefore options A, B and D are incorrect.

1.3 Answer: (D)

Classification by the nature of the expenditure is known as subjective classification.

1.4 Answer: (B)

No. of passengers	*Miles travelled*	*Passenger miles*
80	4	320
40	5	200
90	6	540
100	7	700
140	8	1,120
180	9	1,620
150	10	1,500
Total passenger miles		6,000

Drivers' wages cost per passenger mile = £1,100/6,000 = £0.18

Solution 2

2.1

- Hotel (d)
- Transport service (e)
- College (a)
- Restaurant (b)
- Accountancy service (c)

2.2 (a) The number of occupied room nights during the week was 2,121.
(b) The overall percentage room occupancy rate during the week was 88 per cent.

Workings:
Number of room nights available = 345 × 7 nights = 2,415 room nights
Total number of unoccupied room nights = 294
Number of occupied room nights = 2,415 − 294 = 2,121

Percentage occupancy = 2,121/2,415 = 88%

Solution 3

- This question provides an example of the use of a composite cost unit. The cost per tonne-kilometre is the cost of transporting 1 tonne for 1 km.

(a) £8,790
(b) £1,600
(c) £0.20

Workings:
Tonne-kilometres

Journey	*Tonnes carried*	*km*	*Tonne-km*
1	34	180	6,120
2	28	265	7,420
3	40	390	15,600
4	32	115	3,680
5	26	220	5,720
6	40	480	19,200
7	29	90	2,610
8	26	100	2,600
9	25	135	3,375
	280	1,975	66,325

			£
Variable operating costs			
Loading: 280 × £6 =			1,680
		£ *per km*	
Running costs:	Petrol	0.50	
	Repairs	0.30	
	Depreciation	1.00	
		1.80 × 3,950	7,110
			8,790
Fixed operating costs		£	
Depreciation (3 × £50)		150	
Supervision		550	
Drivers' wages (3 × £300)		900	
			1,600
Total operating cost			10,390

$$\text{Average total cost per tonne-kilometre} = \frac{£13{,}265}{66{,}325} = £0.20$$

Solution 4

- You will be using a composite cost unit in this question as well: a guest night. The cost per guest night is the cost incurred by the hotel for one guest to stay for one night. In this example, the number of guest nights is calculated as:

  No. of guest nights = no. of guests × average no. of nights stayed

- You will need to prepare some preliminary workings in part (a). The totals to be calculated for the 10-week period are:
  (i) the number of rooms available (you need this in order to calculate the costs incurred);
  (ii) the number of guests (this is also needed for the cost calculation);

(a) £159,613.50
(b) 6,064
(c) 8,554

Workings:

Week	*Rooms*	*Guests*	*Average stay*	*Guest nights*
1	55	198	2.1	415.8
2	60	170	2.6	442.0
3	72	462	1.4	646.8
4	80	381	3.2	1,219.2
5	44	83	5.6	464.8
6	62	164	3.4	557.6
7	80	348	2.6	904.8
8	54	205	1.7	348.5
9	80	442	1.8	795.6
10	24	84	3.2	268.8
	611	2,537		6,063.9

Total costs for private guests' bookings = (611 × £56) + (2,537 × £17.50) + (10 × £8,100) = £159,613.50

Guest nights available = 611 rooms × 7 nights × 2 guests = 8,554.