

A big purchasing initiative

Siemens set to lower profit forecast

FT

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Siemens is set to lower its profit forecast on Wednesday as a deeper-than-expected recession spoils the engineering group's ambitious profit growth plans.

Peter Löscher, Siemens' chief executive, is expected to ditch the projection that the operating profit in the three sectors will reach €8bn–€8.5bn (\$10.6bn–\$11.3bn) in the current financial year, which ends in September.

In the first quarter, the company cheered markets with a better-than-expected 20 per cent increase in operating profit to more than €2bn.

However, profits in the pivotal industry sector, which makes everything from train carriages to light bulbs, fell in the quarter, forcing Siemens to follow other industrial companies in drastically reducing working hours.

By June, 19,000 workers will be expected to be part of a government-sponsored scheme to reduce working hours.

The financial crisis has reached Siemens, but Siemens itself is not in crisis, Joe Kaeser, Siemens' chief financial officer, said recently.

Order income will keep falling in the second quarter. But thanks to the company's large order backlog in the healthcare and energy sectors, Siemens' revenues and profits are likely to grow further.

A base effect will help Siemens, as it had large one-off restructuring costs in the year before. But analysts said Siemens was better positioned to cope with the recession because it started cutting costs even before the crisis hit.

Mr Löscher, who in 2007 became the first outsider in 161 years to

head Siemens, has not only sold further non-core subsidiaries, but has also launched a programme to save €1.2bn in overheads by 2010.

The next effort to cut costs will be unveiled this week when Barbara Kux, a Siemens' management board member who came in late last year, announces details of a purchasing initiative.

Ms Kux recently said that she would reduce the number of the company's 370,000 suppliers by 20 per cent.

She is not expected to unveil a top-line figure but analysts expect savings of about €1bn this year – a sum that will be much welcomed by Mr Löscher to achieve Siemens' new forecast.

www.ft.com, 26 April 2009.

Source: Reproduced with permission from *The Financial Times*.

Questions relating to this news story can be found on page 297 ➔

About this chapter

In the previous chapter we explained something about the nature and purpose of management accounting, why and how it developed as a separate branch of accounting, and what its main functions are today. One such function is *cost accounting*.

Cost accounting involves collecting detailed financial data about products and services, and the recording of that data. The data may then be extracted from the books of account, summarized and presented to the management of an entity. The managers will use the information presented to them for planning and control purposes.

The information may take various forms depending on what it is to be used for. At the very least, managers are usually interested in knowing the profit or loss made by individual products or services. For convenience, we will call this process *product costing*.

Following the Industrial Revolution, the new type of managers in the nineteenth century attempted to base their selling prices on what products had cost to make. Unfortunately, the financial accounting systems at that time could not provide the information required so a separate branch of accounting called *cost accounting* slowly began to develop. In the twentieth century cost accounting has been subsumed into a much broader branch of accounting now generally referred to as *management accounting*.

Even so, accountants still cost products using a technique that has hardly changed in over 100 years. This technique is known as *absorption costing*. In broad terms, absorption costing involves the following procedure:

- isolate those costs that can be easily identified with a particular product;
- apportion the non-identifiable costs.

Accountants describe the first stage as *allocating* the direct costs and the second stage as *absorbing* the indirect costs. In this chapter we cover the first stage and in the next chapter the second stage.

Learning objectives

By the end of this chapter, you should be able to:

- identify material, labour and other direct costs;
- describe three important methods of charging direct material costs to production;
- calculate prime costs.

! Why this chapter is important

This is the first of two chapters covering the subject of cost accounting. As a non-accountant you may be puzzled why you need to know *anything* about cost accounting. It might seem reasonable to assume that you can safely leave that subject to your accountants. We do not think so.

There are two broad reasons why we hold this view. In order to be a really successful manager we think that you need to know something about cost accounting for two reasons: (1) to achieve greater control over the resources for which you are responsible, and (2) to make better decisions. This chapter will help you do both of these things when dealing with materials. The treatment of what accountants call *direct material* costs requires a decision to be made about the price at which materials should be charged to production. If managers get the pricing decision wrong it can have some serious and often adverse consequences for the survival of the company. So it is far too important a decision for you to delegate it entirely to your accountants. They will usually supply you with all the cost and financial information that you need but you will be in a much better position to assess its reliability and usefulness if you are familiar with its source, the assumptions made in preparing it and the methods used to compile it.

Responsibility accounting

A cost accounting system will normally be based on what is called ‘responsibility accounting’. *Responsibility accounting* has a number of identifiable features. They are as follows:

- *Segments*. The entity is broken down into separate identifiable segments. Such segments are known as ‘responsibility centres’. There are three main types:
 - (i) *Cost centres*. A cost centre is a clearly defined area of responsibility under the overall control of a designated individual to which the costs directly associated with the specified area are charged. There are two main types of costs centres: *production* cost centres where products are manufactured or processed, e.g. a machining department or an assembly area; and *service* cost centres where a service is provided to other cost centres, e.g. the personnel department or the canteen. Cost centres can take a number of forms such as a department, a production line, a machine, a product or a sales area.
 - (ii) *Profit centres*. A profit centre is similar to a cost centre except that both costs and revenues associated with the centre are charged to it. It is then possible to calculate the profit or loss for each profit centre. The oil division of a large chemical company is an example of a profit centre.
 - (iii) *Investment centres*. An investment centre is similar to a profit centre except that it is also responsible for all the major investment decisions that relate to that centre. A division of a large multinational company is an example of an investment centre.
- *Boundaries*. The boundaries of each segment will be clearly established.
- *Control*. A manager will be put in charge of each separate segment.
- *Authorization*. Segmental managers will be given the independence to run their segments as autonomously as possible.

By identifying different segments within an entity it is then possible to isolate the various costs and revenues associated with each segment. This means that segmental managers can then be made solely responsible for planning, budgeting and controlling all their segment’s activities and for making any decisions that affect it. They will also, of course, be held responsible for whatever does or does not happen within it.

Activity 13.1

What are your first thoughts about responsibility accounting? Do you think that it is possible to divide a complex organization into neat little segments? Is it realistic to say to someone ‘you’re in complete charge of that segment’?

How much autonomy do you think a cost centre manager can really be given? Base your answer on the following scale.



Classification of costs

While in theory a responsibility accounting system enables costs and revenues to be easily identified on a segmental basis (from now on we will refer to all responsibility centres simply as ‘cost centres’), in practice it is not always easy to identify each cost with a particular cost centre because there are some costs that are so general and so basic that no one manager has control over them, e.g. factory rental and business rates. Such costs are levied on a property as a whole and they do not relate directly to any particular cost centre.

Activity 13.2

Specify which cost centre you think should be charged with the cost of a company's factory rent and business rates.

Costs that are easily and economically identifiable with a particular segment are known as *direct costs*. So if it is possible to identify all the costs of the entity with particular cost centres then there is no problem because by definition *all* costs must be direct costs. While this may be true at the cost centre level it is usually not true at the product or unit level. Some costs will certainly be easy to identify with particular units (classified as *direct unit costs*) but there will be other costs (classified as *indirect unit costs*) where it is much more difficult to relate them to units of production, e.g. canteen costs or the wages department expenses. In what way, therefore, is it possible to charge some of the indirect costs to individual units? In practice, it is not easy but we explain how it might be done in the next chapter.

Irrespective of whether costs are classified into the direct or indirect categories, we also need to have some idea of their nature, so they are usually broken down into their *elements*, i.e. whether they are material costs, labour costs or other types of costs. The *elements of cost* are shown in diagrammatic form in Figure 13.1. This breakdown is similar to the one we adopted for manufacturing accounts in Chapter 6.

There are two particular points to note about Figure 13.1. Firstly, in a competitive market, selling price can rarely be determined on a ‘cost-plus’ basis, i.e. total cost of sales plus a profit loading. If the entity's prices are higher than its competitors, then it is not likely to sell very many units. However, if its selling prices are lower than its competitors then it might sell many units but the profit on each unit may be low. Even so its competitors are likely to bring down their prices very quickly. So when the market largely determines selling prices, it is vital that the entity's total costs are strictly controlled and monitored so that the gap between its total sales revenue and its total cost of sales (i.e. its profit) is as wide as possible. Secondly, the classification shown will not necessarily be relevant for all entities. For example, an entity in the service sector (such as insurance broker) is not likely to have any direct or indirect production costs.

Figure 13.1 is based on what is called *total absorption costing*. This is a method whereby *all* costs of the entity are charged to (or absorbed into) particular products irrespective of their nature. If only production costs are absorbed into product costs, the system is referred to simply as absorption costing.

There is also another important costing method known as *marginal costing*. This method involves classifying costs into their fixed and variable elements. Fixed costs are those that do not change irrespective of how many units are produced (i.e. regardless of output). Variable costs are those costs that do change and change directly proportionally to the number of units produced. We shall be dealing with marginal costing in Chapter 17.

We can now begin our detailed study of direct costs. We start with direct materials.

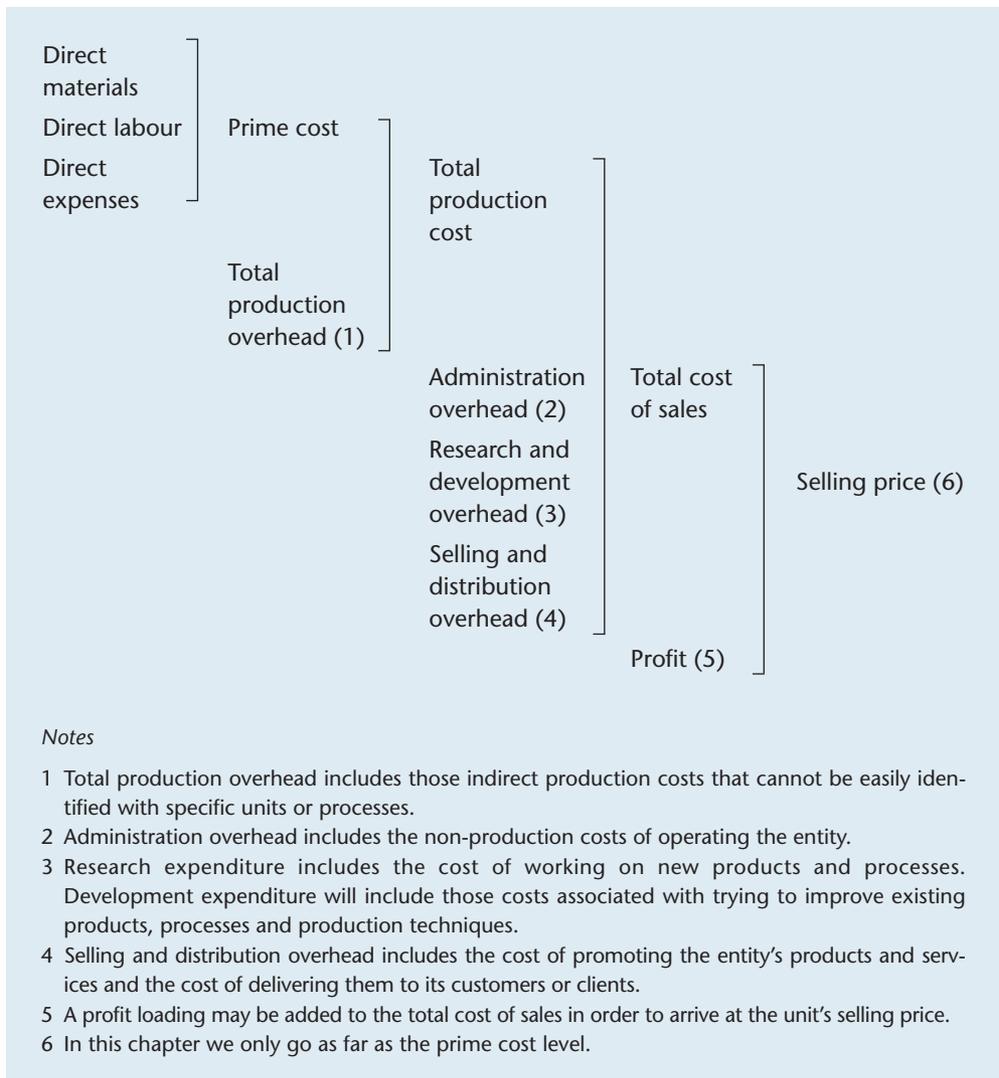


Figure 13.1 The elements of cost

Source: Based on Chartered Institute of Management Accountants (2005). CIMA Official Terminology. Oxford: CIMA Publishers.

Direct materials

News clip

Inventory error

Oil and gas services company taken immediate action to improve Hamworthy has discovered an overstatement in its inventory values totalling £4.6 million. The company said that it had processes and strengthen internal controls and management in order to prevent any recurrence.

Source: Adapted from www.accountancyage.com/articles/print/2225200, 3 September 2008.

Materials consist of raw materials and component parts. Raw materials are those basic ingredients that are incorporated into the production of a product, such as flour, sugar, and raisins used in making cakes. Component parts include miscellaneous ready-made goods or parts that are purchased (or manufactured specially) for insertion into a main product, e.g. a car radiator.

As we discussed earlier, a direct cost is one that can be easily and economically identified with a particular segment, such as a cost centre or a particular product. However, there is a problem when relating this definition to materials. It might be easy and economic to identify them *physically* with a particular segment but it does not necessarily follow that it is then easy to attach a cost to them. There are two main problems. Firstly, *size*. We might be able to identify a few screws used in assembling a chair, for example, but it would not be worthwhile costing them separately because their relative value is so small. Such costs would, therefore, be classified as *indirect* material costs. Secondly, *timing*. Materials may have been purchased at different times and at different prices, so it might not be possible to know whether 1000 kg of material held in stock had been purchased at £1, £2 or £3 per kilo. This problem applies particularly when materials that are purchased in separate batches are stored in the same containers, e.g. grains and liquids.

In such circumstances, it is necessary to determine an appropriate pricing method. Many such methods are available but as the price of materials charged to production also affects the value of closing stock, regard has to be had to the financial reporting requirements of the entity. In management accounting we are not bound by any statutory or mandatory professional requirements, and so we are perfectly free to adopt any stock valuation method we wish. Unfortunately, if the chosen method is not acceptable for financial reporting purposes, we would have to revalue the closing stock for the annual accounts. This may be a very expensive exercise. We would, therefore, normally adopt a pricing method that is suitable both for the annual accounts and for management accounting purposes. This means adopting the requirements contained in SSAP 9 (Stocks and long-term contracts). There are three preferred methods (assuming that the specific unit cost cannot be identified). We summarize each of them below. They are also shown in diagrammatic format in Figure 13.2.

- *First-in, first-out (FIFO)*. This method adopts the first price at which materials have been purchased.
- *Average cost*. An average cost may be calculated by dividing the total value of materials in stock by the total quantity. There are a number of acceptable averaging methods but we will be using the *continuous weighted average (CWA)* cost method.
- *Standard cost*. This method involves estimating what materials are likely to cost in the future. Instead of the actual price, the *estimated* or *planned* cost is then used to charge out the cost of materials to production. The standard cost method is usually adopted as part of a standard costing system. We shall not be considering it any further in this chapter because we will be dealing with standard costing in Chapter 16.

Activity 13.3

Assuming that you do not know the specific unit price of some materials, which method would you use to price them? Tick the appropriate box below and insert the main reason for your choice.

FIFO

Average cost

Standard cost

Main reason:

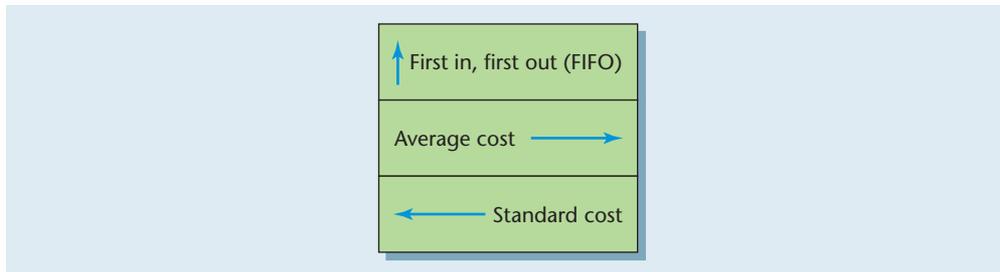


Figure 13.2 Direct material costing methods

First-in, first-out

News clip

Number errors

Wolverine Tube, the American copper producer, has found a number of errors in its inventory. The errors were discovered in previously issued financial statements. As a result the release of its second quarter figures had to be delayed.

Source: Adapted from www.accountancyage.com/articles/print/2224241, 22 August 2008.

We will now use a calculative example to explain how the FIFO and the continuous weighted average pricing methods work. It is sensible to issue the oldest stock to production first, followed by the next oldest and so on, and this should be done wherever possible. This method of storekeeping means that old stock is not kept in store for very long, thus avoiding the possibility of deterioration or obsolescence. However, as some materials may be stored in such a way that they become a mixture of old and new stock it is then not possible to identify each separate purchase. Nevertheless, in pricing the issue of stock to production there seems to be some logic in following the first-in, first-out procedure and charge production with the oldest price first, followed by the next oldest price and so on. The procedure is as follows:

- 1 Start with the price paid for the oldest material in stock and charge any issues to production at that price.
- 2 Once all of the goods originally purchased at that price have been issued, use the next-oldest price until all of that stock has been issued.
- 3 The third-oldest price will be used next, then the fourth oldest, and so on.

The use of the FIFO pricing method is illustrated in Example 13.1.

Although Example 13.1 is a simple one, it can be seen that if the amount of material issued to production includes a number of batches purchased at different prices, the FIFO method involves using a considerable number of different prices.

The advantages and disadvantages of the FIFO method may be summarized as follows.

Advantages

- The method is logical.
- It appears to match the physical issue of materials to production.
- The closing stock value is closer to the current economic value.

**Example
13.1****The FIFO pricing method of charging direct materials to production**

The following information relates to the receipts and issue of a certain material into stock during January 2012:

Date	Receipts into stores			Issue to production
	Quantity units	Price £	Value £	Quantity units
1.1.12	100	10	1 000	
10.1.12	150	11	1 650	
15.1.12				125
20.1.12	50	12	600	
31.1.12				150

Required:

Using the FIFO method of pricing the issue of goods to production, calculate:

- the issue prices at which goods will be charged to production;
- the closing stock value at 31 January 2012.

**Answer to
Example 13.1**

(a) The issue price of goods to production:

Date of issue	Tutorial note	Units	Calculation	£
15.1.12	(1)	100	units × £10 =	1 000
	(2)	25	units × £11 =	275
		<u>125</u>		<u>1 275</u>
31.1.12	(3)	125	units × £11 =	1 375
	(4)	25	units × £12 =	300
		<u>150</u>		<u>1 675</u>

(b) Closing stock:

25 units × £12 =	<u>300</u>
Check:	
Total receipts (£1000 + £1650 + £600)	3 250
Total issues (£1275 + £1675)	<u>2 950</u>
Closing stock	<u>300</u>

Tutorial notes

- The goods received on 1 January 2012 are now assumed to have all been issued.
- This leaves 125 units in stock out of the goods received on 10 January 2012.
- All the goods purchased on 10 January 2012 are assumed to have been issued.
- There are now 25 units left in stock out of the goods purchased on 20 January 2012.

- The stores ledger account is arithmetically self-balancing and there are no adjustments that have to be written off to the profit and loss account.
- It meets the requirements of SSAP 9.
- It is acceptable for UK tax purposes.

Disadvantages

- It is arithmetically cumbersome.
- The cost of production relates to out-of-date prices.

Continuous weighted average

News clip

Inventory write-down

The construction company Barratt has written off £495m of its inventories. This is some 27% of the total value. Other house builders are expected to follow suit. Barratt's Chief Executive believes such a practice helps morale because it lowers the effective input cost of land and that gives divisions the opportunity to make a profit in a 'grim market'. He argues that it is better to focus management on a profit margin rather than 'a margin of loss'.

Source: Adapted from www.ft.com/cms, 9 March 2009.

In order to avoid the detailed arithmetical calculations involved in using the FIFO method, it is possible to substitute an *average* pricing method. There are a number of different types but we are going to use the continuous weighted average (CWA) method. This method may require frequent changes to be made to the issue prices depending on the number of orders purchased. Although it appears very complicated, it is the easiest one to use *provided* that the receipts and issues of goods are recorded in a stores ledger account. An example of a manual stores ledger account is shown in Figure 13.3 opposite.

You will note from Figure 13.3 that the stores ledger account shows both the quantity and the value of the stock in store at any one time. The CWA price is obtained by dividing the total value of the stock by the total quantity. A new price will be struck each time new purchases are taken into stock.

The method is illustrated in Example 13.2 opposite. We use the same data as in Example 13.1 but we have taken the opportunity to present a little more information, so that we can explain more clearly how a CWA price is calculated.

The main advantages and disadvantages of the CWA method are as follows.

Advantages

- The CWA is easy to calculate, especially if a stores ledger account is used.
- Prices relating to previous periods are taken into account.
- The price of goods purchased is related to the quantities purchased.
- The method results in a price that is not distorted either by low or high prices, or by small or large quantity purchases.
- A new price is calculated as recent purchases are taken into stock, and so the price is updated regularly.

Disadvantages

- A CWA price tends to lag behind current economic prices.
- The CWA price may not relate to any actual price paid.
- It is sometimes necessary to write-off any arithmetical adjustments in the stock ledger account to the profit and loss account.

We now move on to have a look at the other main type of direct cost: labour.

Stores ledger account											
Material: Maximum:						Code: Minimum:					
Date	Receipts				Issues				Stock		
	GRN no.	Quantity	Unit price	Amount	Stores req. no.	Quantity	Unit price	Amount	Quantity	Unit price	Amount
			£	£			£	£		£	£

Notes:
 GRN = Goods received note
 Stores req. no. = Stores requisition number

Figure 13.3 Example of a stores ledger account

Example 13.2

The CWA pricing method of charging direct materials to production

You are presented with the following information relating to the receipt and issue of a certain material into stock during January 2012:

Date	Receipts into stores			Issues to production			Stock balance	
	Quantity units	Price £	Value £	Quantity units	Price £	Value £	Quantity units	Value £
1.1.12	100	10	1 000				100	1 000
10.1.12	150	11	1 650				250	2 650
15.1.12				125	10.60	1 325	125	1 325
20.1.12	50	12	600				175	1 925
31.1.12				150	11.00	1 650	25	275

Note:
The company uses the continuous weighted average method of pricing the issue of goods to production.

Required:
Check that the prices of goods issued to production during January 2012 have been calculated correctly.

Answer to Example 13.2

The issue prices of goods to production during January 2012 using the continuous weighted average method have been calculated as follows:

$$15.1.12 \frac{\text{Total stock value at 10.1.12}}{\text{Total quantity in stock at 10.1.12}} = \frac{2\,650}{250} = \underline{\underline{\pounds 10.60}}$$

$$25.1.12 \frac{\text{Total stock value at 20.1.12}}{\text{Total quantity in stock at 20.1.12}} = \frac{1\,925}{175} = \underline{\underline{\pounds 11.00}}$$

Activity 13.4

Taking into account the various advantages and disadvantages, which direct material pricing method do you regard as being the best? Use a scale of 1 to 4 (1 being your top choice).

Unit cost	[]
First-in, first-out (FIFO)	[]
Continuous weighted average	[]
Standard cost	[]

Direct labour

Labour costs include the cost of employees' salaries, wages, bonuses, and the employer's national insurance and pension fund contributions. Wherever it is practical to do so, we will charge labour costs to specific units. If it is impractical then they will have to be treated as indirect costs.

The identification and pricing of direct labour is much easier than with direct materials. Basically, the procedure is as follows.

- 1 Employees working on specific units are required to keep a record of how many hours they spend on each unit.
- 2 The total hours worked on each unit is multiplied by the appropriate hourly rate.
- 3 A percentage amount is added to the total to allow for the employer's other labour costs, e.g. national insurance, pension fund contributions and holiday pay.
- 4 The total amount is then charged directly to that unit.

The procedure is illustrated in Example 13.3.

Example 13.3**The charging of direct labour cost to production**

Alex and Will are the two employees working on Unit X. Alex is paid £10 an hour and Will £5. Both men are required to keep record of how much time they spend on each job they do. Alex spent 10 hours and Will 20 when working on Unit X. The employer has estimated that it costs him an extra 20 per cent on top of what he pays them to meet his contributions towards national insurance, pension contributions and holiday pay.

Required:

Calculate the direct labour cost of producing Unit X.

Answer to Example 13.3

Calculation of the direct labour cost:

	<i>Hours</i>		<i>Rate per hour</i>		<i>Total</i>
			<i>£</i>		<i>£</i>
Alex	10	×	10	=	100
Will	20	×	5	=	100
					200
Employer's costs (20%)					40
Total direct labour cost					<u>240</u>

It should be made clear that in practice it is by no means easy to obtain an accurate estimate of the direct labour cost of one unit. Indeed, if it is very difficult to do so, it will probably not be worthwhile. Even in those cases where there is no doubt that employees were working on a particular unit (as in Example 13.3) we depend on them keeping an accurate record. If you have ever had to do this in your own job you will know that this is difficult, especially if you are frequently being switched from one job to another, or you spend lots of time chatting in the corridor!

No matter what the difficulty, it is important that management should emphasize to employees just how important it is for them to keep an accurate record of their time. Labour costs may form a high proportion of total cost (e.g. in service industries) and so tight control is important. This is especially the case if tender prices are based on total unit cost. A high cost could mean that the company fails to get a contract, whereas too low a cost would reduce the amount of profit that the entity makes.

Other direct costs

Apart from material and labour costs, there may be other types of cost that can be relatively easily identified with specific units. These are, however, somewhat rare because unlike materials and labour it is usually difficult to trace a direct physical link to specific units unless, for example, some specialist plant is hired to work on one particular job. It would then be possible to charge the hire cost specifically to that job.

Irrespective of the difficulties of identifying other expenses with production, it is important to make every effort do so. Otherwise, the indirect charge just becomes bigger and bigger, and that then causes even greater distortions when it comes to pricing for new jobs.



Questions you should ask

We suggest that you put the following questions to your management accountants.

- What is included in material costs?
- What criteria do you use for determining whether the costs are direct or indirect?
- What method do you use for charging them out to production?
- How do you determine whether labour costs are direct or indirect?
- What system is used to ensure that time spent on specific jobs is recorded accurately?
- Are there any other costs that could be classified as direct?
- What are they?
- What criteria can we use for charging them to specific units?

Conclusion

Responsibility accounting is a management control system that involves dividing an entity into segments and placing each segment under the control of a designated manager. Three main types of segments may be identified: cost centres (responsible for costs only), profit centres (responsible for costs and revenues) and investment centres (responsible for costs, revenues and investment decisions). Control is achieved by giving each manager complete responsibility for the costs incurred by his or her centre (and for any revenues received). Such costs (and revenues) can then be said to be *direct* to that centre. However, direct costs are normally defined as those that can be easily attributed to specific cost units. Those costs that cannot be easily attributed to specific cost units are known as *indirect* costs.

A direct cost is a cost that can be easily and economically identified with a specific cost centre. Some direct costs can then be identified with specific units or products. Those that cannot be so identified are known as *indirect* costs.

Costs are usually classified into elements of cost. By building the costs up in layers it is possible to determine a selling price, although market conditions have also to be taken into account when fixing selling prices.

Direct material costs include raw materials and component parts. If the cost of materials used in a particular product is known then there is no problem in charging them out to products. The unit cost will be used. Otherwise, a pricing method has to be selected. The recommended ones are first-in, first-out, an averaging method or the standard cost. Direct labour costs are those costs that can be easily attributed to specific units. They are charged out on the basis of hours worked and the hourly rate paid plus an allowance for employer's employment costs, such as national insurance, pension contributions and holiday pay. There may be other direct costs that can also be attributed to specific units but these are relatively rare.

Key points

- 1 Product costing has three main purposes: stock valuation, the planning and controlling of costs, and the determination of selling prices.
- 2 The procedure involves isolating those costs that are easy and economic to identify with specific units. Such costs are described as *direct costs*. Those costs that are not easy or economic to identify with specific costs are known as *indirect costs*. The total of indirect costs is known as *overhead* (or *overheads*).
- 3 Some material costs can be physically identified with specific units and their cost ascertained easily. In cases where it is difficult to isolate the cost of material used in production, e.g. where batches of materials are purchased at different prices and where they are stored collectively, an estimated price has to be determined. There are three acceptable methods for pricing materials (apart from being able to use the unit cost itself): first-in, first-out, average cost, and standard cost. The average cost method recommended in this book is known as the *continuous weighted average* (CWA) cost method.

- 4 Wherever possible, labour costs should be charged directly to specific units. Employees will need to keep time sheets that record the hours they have spent working on specific jobs. The amount charged to a particular unit will then be the time spent working on that unit multiplied by the respective hourly wage rate.
- 5 Some other services may also be identifiable with specific units, e.g. the hire of a machine for a particular contract. The cost of such services should be charged directly to production if it can be easily and economically determined.

Check your learning

The answers to these questions can be found within the text.

- 1 What is meant by 'responsibility accounting'?
- 2 What is (a) a cost centre, (b) a profit centre, (c) an investment centre?
- 3 What is (a) a direct cost, (b) an indirect cost?
- 4 What is meant by the 'elements of cost'?
- 5 What is meant by 'prime cost'?
- 6 What are direct materials?
- 7 What four methods may be used for charging direct materials out to production?
- 8 What is meant by 'direct labour'?
- 9 How is it collected and charged out to production?
- 10 Give an example of a direct cost other than materials or labour.

News story quiz

Remember the news story at the beginning of the chapter? Go back to that story and reread it before answering the following questions.

This article illustrates the complexity of dealing with purchases in a very large company. It would appear that Siemens has 370,000 suppliers. Imagine the number of staff and the paperwork involved in dealing with that number. Then, when the orders arrive they have to be checked, stored and issued to production. It is at that point that a decision has to be taken about what price they should be charged out to production.

Questions

- 1 What will be the impact of a fall in orders on Siemens's direct material pricing policy?
- 2 What impact will a fall in orders have on the company's inventory costs?
- 3 How will the new purchasing initiative enable costs to be cut by as much as €1 billion in one year?

Tutorial questions

The answers to questions marked with an asterisk can be found in Appendix 4.

13.1 Examine the argument that an arbitrary pricing system used to charge direct materials to production leads to erroneous product costing.

13.2* The following stocks were taken into stores as follows:

1.1.12 1000 units @ £20 per unit.

15.1.12 500 units @ £25 per unit.

There were no opening stocks.

On 31.1.12 1250 units were issued to production.

Required:

Calculate the amount that would be charged to production on 31 January 2012 for the issue of material on that date using each of the following methods of material pricing:

- (a) FIFO (first-in, first-out)
- (b) continuous weighted average.

13.3* The following information relates to material ST 2:

		<i>Units</i>	<i>Unit price</i>	<i>Value</i>
			£	£
1.2.10	Opening stock	500	1.00	500
10.2.10	Receipts	200	1.10	220
12.2.10	Receipts	100	1.12	112
17.2.10	Issues	400	–	–
25.2.10	Receipts	300	1.15	345
27.2.10	Issues	250	–	–

Required:

Calculate the value of closing stock at 28 February 2010 assuming that the continuous weighted average method of pricing materials to production has been adopted.

13.4 You are presented with the following information for Trusty Limited:

<i>2011</i>	<i>Purchases</i>	<i>Unit cost</i>	<i>Issues to production</i>
	<i>(units)</i>	£	<i>(units)</i>
1 January	2000	10	
31 January			1 600
1 February	2400	11	
28 February			2 600
1 March	1 600	12	
31 March			1 000

Note: There was no opening stock.

Required:

Calculate the value of closing stock at 31 March 2011 using each of the following methods of pricing the issue of materials to production:

- (a) FIFO (first-in, first-out)
- (b) continuous weighted average.

13.5 The following information relates to Steed Limited for the year to 31 May 2012:

	£
Sales	500 000
Purchases	440 000
Opening stock	40 000

Closing stock value using the following pricing methods:

FIFO (first-in, first-out)	90 000
Continuous weighted average	79 950

Required:

Calculate Steed Limited's gross profit for the year to 31 May 2012 using each of the above closing stock values.

13.6 Iron Limited is a small manufacturing company. During the year to 31 December 2012 it has taken into stock and issued to production the following items of raw material, known as XY1:

Date 2012	Receipts into stock			Issues to production Quantity (litres)
	Quantity (litres)	Price per unit £	Total value £	
January	200	2.00	400	
February				100
April	500	3.00	1 500	
May				300
June	800	4.00	3 200	
July				400
October	900	5.00	4 500	
December				1 400

Notes:

- There were no opening stocks of raw material XY1.
- The other costs involved in converting raw material XY1 into the finished product (marketed as Carcleen) amounted to £7 000.
- Sales of Carcleen for the year to 31 December 2012 amounted to £20,000.

Required:

- Illustrate the following methods of pricing the issue of materials to production:
 - first-in, first-out (FIFO)
 - continuous weighted average.
- Calculate the gross profit for the year using each of the above methods of pricing the issue of materials to production.

Further practice questions, study material and links to relevant sites on the World Wide Web can be found on the website that accompanies this book. The site can be found at www.pearsoned.co.uk/dyson