

Chapter 3

Materials and labour costs

Real world case 3.1

This case study describes the role of a purchasing manager in a business.

Purchasing manager, agent, and buyer career overview and job description

Companies hire purchasing managers, buyers, and purchasing agents to find the best merchandise at the lowest possible purchase cost. Purchasers typically buy goods and services for their company or organization to use, while buyers ordinarily buy items in order to resale them for profit. Purchasers and buyers find the best goods or services, choose suppliers, negotiate prices, and grant contracts that ensure that the right amount of the product or service is received when it is needed. Purchasing managers, buyers, and purchasing agents take several steps to reach these goals: they research sales records and inventory levels of current stock, find foreign and domestic suppliers, and stay current on any changes in either the supply of or demand for needed products and materials.

Source: <http://www.careeroverview.com/purchasing-manager-career.html>, accessed Sept. 2009.

Discussion points

- 1 What is the role of the purchasing manager?
- 2 What are the indirect costs of purchasing that should be added to the direct costs in order to estimate the full cost of materials and services?



Contents

3.1	Introduction	56
3.2	Accounting for materials costs	57
3.2.1	Materials handling and control documentation	58
3.2.2	Costs of waste and scrap	59
3.2.3	Cost classification and materials costs	60
3.3	Costs when input prices are changing	60
3.3.1	Method of calculation	61
3.3.2	Approximation when dates are not recorded	61
3.3.3	Choice of FIFO, LIFO or average cost	62
3.4	Accounting for labour costs	63
3.4.1	Types of pay scheme	63
3.4.2	Incentive pay schemes	63
3.4.3	Determining the labour cost in an item of output	64
3.4.4	Cost classification and labour costs	65
3.4.5	Recording labour costs	65
3.5	What the researchers have found	66
3.5.1	Outsourcing labour services	66
3.6	Summary	67

Learning outcomes

After reading this chapter you should be able to:

- Explain how materials costs form part of the total product cost.
- Explain the process of controlling and recording costs of materials.
- Explain the FIFO and LIFO approach to inventory valuation (stock valuation).
- Explain the process of controlling and recording costs of labour.
- Describe and discuss examples of research into management of materials and labour costs.

3.1 Introduction

Some businesses *manufacture* goods, while others perform a *service*. In the UK economy some 75 per cent of gross domestic product (output) is based on service sector companies. The remaining 25 per cent is mainly based on manufacturing. Some businesses manufacture goods, while others perform a service. The service sector is heavily reliant on labour resources. The public sector (health service, education, national and local government departments) is also heavily dependent on labour resources.

Whatever the nature of the business, all will at some stage use materials, employ labour and incur overhead costs. In this chapter you will learn about procedures for recording the costs of materials and costs of labour, and be aware of some of the problems which are encountered. Overhead costs are dealt with in Chapter 4.

A statement of the cost of a unit of output provides a useful starting point for this chapter in setting out a list of items to be explained in more detail (*see* Table 3.1). When the unit of output represents a product or service for a customer the calculation shown in Table 3.1 is called a **job cost**.

Table 3.1
Statement of cost of a unit of output

	£	£
Direct materials		xxx
Direct labour		xxx
Other direct costs		<u>xxx</u>
Prime cost		xxx
Indirect materials	xxx	
Indirect labour	xxx	
Other indirect costs	<u>xxx</u>	
Production overhead		<u>xxx</u>
Total product cost		<u>xxx</u>

Materials and labour are part of the product cost (where products may be goods or services). The direct materials and direct labour are part of the prime cost. The indirect materials and indirect labour are part of the production overhead costs.

Definition

Prime cost is the cost of direct materials, direct labour and other direct costs of production.

Direct and indirect costs are defined in section 2.5. Some materials and labour costs are classified as direct because they can be identified with specific products or services. Some materials and labour costs are classified as indirect because they are spread across a range of products or services. These indirect costs have to be shared in some way across the products as part of the overhead costs. This will be explained in Chapter 4.

Section 3.2 of this chapter describes methods for recording and controlling the costs of materials. The nature of the materials, and the type of output of the enterprise, will lead to classification as direct or indirect costs of materials. Section 3.3 explains the problems of measuring the cost of production when prices of purchased materials are changing. Section 3.4 describes methods for recording and controlling the costs of labour. The nature of the work done, and the type of output of the enterprise, will lead to classification as direct or indirect costs of labour.

Activity 3.1

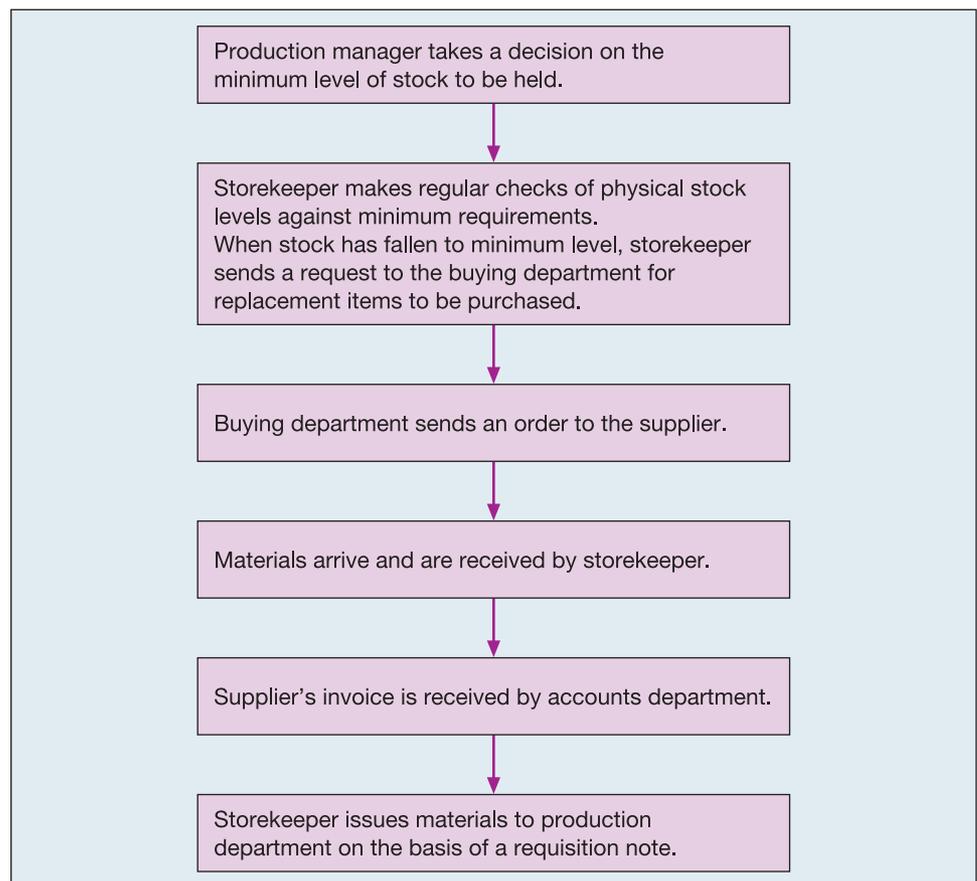
Look at some item in the room where you are sitting as you read this chapter (perhaps a table or a desk or a window). What words would you use to describe the cost of materials and labour used in producing that item (e.g. wood, plastic, work in assembly, running costs of workshop)? How would you start to measure the cost of materials and labour used in producing that item?

3.2 Accounting for materials costs

Figure 3.1 shows the sequence of **activities** which control the ordering, delivery and safe-keeping of materials, together with the subsequent payment to suppliers. Information that is useful for accounting purposes will be collected from the documentation that is created during these procedures.

Figure 3.1

Materials control procedures



It is not difficult to see that with so many procedures involved there needs to be careful control over materials moving into, and out of, store. Each stage in the process requires a document as evidence that the transaction or process has been completed correctly. Every business has a different system of documentation which suits its particular needs. The following description is typical of the documents encountered in materials handling and control. *Italics are used to indicate each document.*

3.2.1 Materials handling and control documentation

When the storekeeper notes that the inventory has fallen to the minimum level, triggering a reorder requirement, a *purchase requisition* will be sent to the buying department. The buying department will have a list of items which the production manager wishes to have available in store and the quantity to be reordered. Provided the item is on that list, the buying department will send a *purchase order* to the supplier. In some cases the production manager may have issued a purchase requisition directly because a new item of materials, not previously held in store, is required. It is the responsibility of the buying department to choose a supplier who provides reliable service and a high-quality product at a competitive price. A copy of the purchase order will be sent to the storekeeper as notification that the materials have been ordered.

When the materials arrive from the supplier, the driver of the delivery vehicle will bring a *delivery note* which the storekeeper will sign, after checking against the quantities received and noting any discrepancies. The storekeeper will then prepare a *materials received note*, sending one copy to the buying department and another to the accounts department. Soon after the materials arrive, the accounts department will receive the *supplier's invoice*, showing the quantities of the materials supplied and the price charged for them. The accounts department will check the quantities against the materials received note and will check the invoice price against an agreed price list provided by the buying department. If all is correct, the accounts department will pay the supplier.

Finally, the materials will be needed by the various production departments. To release the materials from store, the production departments will produce a *stores requisition* which the storekeeper will check and will then pass on to the accounts department for use in keeping the management accounting records.

Table 3.2 provides a summary of the various documents, their origin, destination and use for recording purposes. The two essential pieces of information for determining the cost of materials used in production are the price per unit and the quantity

Table 3.2
Documentation in materials control procedures

<i>Document</i>	<i>Origin</i>	<i>Destination</i>	<i>Use</i>
Purchase requisition	Storekeeper or production manager	Buying department	Authority for purchase of materials from supplier
Purchase order	Buying department	1 Supplier 2 Storekeeper	Authority to supply materials Indication that materials will arrive
Delivery note	Delivery driver	Storekeeper	Check on quantity received, in good state
Materials received note	Storekeeper	1 Buying department 2 Accounts department	Confirmation that buying process is complete. Evidence of quantities for checking against invoice
Supplier's invoice	Supplier	Accounts department	Shows quantities received and unit price
Stores requisition	Production departments	1 Storekeeper 2 Accounts department	Authority to release materials from store. Record of quantities used in production

of materials issued. These are highlighted in bold in Table 3.2. As you will see, the price and quantity are taken from different documents, the supplier's price being taken from the invoice while the quantity of materials used is taken from the stores requisition.

The documents listed in Table 3.2 are referred to as **primary records** because they provide the first evidence that a transaction or event has taken place. From these primary records the accounting records are created. Clearly, the accuracy of the accounting information is heavily dependent on careful and accurate processing of the primary records.

3.2.2 Costs of waste and scrap

The term **waste** is applied to any materials that have no value, whatever the reason. If some waste material can be sold for disposal, usually at a very low price in relation to its original cost, then it is called **scrap**.

In the ideal situation, all materials received into stores are issued to production. Real life is not always like that, because stores may disappear before they have a chance to be used in the production process. The disappearance may be caused by deterioration or damage in store, the materials may become obsolete or unsuitable for use in production or they may be stolen. Sometimes materials may appear to have gone missing when in reality it is the accounting records which are incorrect because a stores requisition note has been lost or an item has been allocated to the wrong **job cost record**, or perhaps there is a calculation error on a stores list. It is always worthwhile to check the accuracy of the accounting records before assuming that materials have disappeared.

For the management accountant, the loss of materials creates another cost problem. The cost must be charged somewhere in the system but it cannot appear as a direct cost because the materials never reached the production department. The cost of waste therefore has to be noted as a separate indirect materials cost, to be spread over the cost of all products. If any cash can be recovered by selling for scrap any unwanted obsolete or damaged materials, then the proceeds of sale of scrap may be recorded as reducing the overall cost of wastage. Examples of waste and scrap are shown in Exhibit 3.1.

Exhibit 3.1

Waste and scrap

(a) Waste

An advertising agency has 10,000 leaflets to distribute. Envelopes cost 3 pence each. The postal franking machine is faulty and damages 100 envelopes which have to be replaced. The total cost of envelopes used is 10,100 at 3p = £303. The cost of the wastage is 100 envelopes at 3p = £3. The total cost of envelopes is 3.03 pence per leaflet distributed. The cost of waste has been treated as an indirect cost that is spread over the cost of all the service provided.

(b) Scrap

A toy manufacturer makes model cars by pressing metal. In one batch, sufficient metal is obtained to manufacture 60 cars. The metal costs £600, or £10 per car. A fault in the manufacturing process damages 10 cars. These have to be sold for scrap, bringing a total of £30. The cost of each car that is available for sale is as follows:

	£
Cost of material	600
Less cost of scrap	<u>(30)</u>
Net cost	<u>570</u>
Number of good cars is 50	50 cars
Cost per car £570/50	£11.40

3.2.3 Cost classification and materials costs

The cost classification system is required to show whether costs are direct or indirect costs and whether they are fixed or variable costs.

How are direct and indirect materials costs distinguished?

The earlier description of materials costing procedures has shown how multiplying unit price by the quantity of materials used will give a measure of cost, although there may need to be a choice of unit price to be applied (*see* section 3.3). Materials issued to production are usually made available on the basis of a stores requisition, so there should be no problem in identifying direct materials costs for the job in question.

Wherever possible, it is preferable to record materials costs as direct costs, identified with the job. On the other hand, the cost of spending time on keeping records must be weighed against more productive uses of that time.

Some materials costs may be spread over a range of products and activities, each of which must take a share. These are the indirect costs. The case of wastage occurring before the materials are issued to production has already been discussed. Other examples would include transportation costs and all the costs of receiving, issuing and handling stores (such as the storekeeper's wages).

How are fixed and variable materials costs distinguished?

Most materials costs will be variable costs, irrespective of whether they are direct or indirect so far as the job is concerned. If output is not being achieved, then materials will not be used and will be held in store for use in a future period.

To be a fixed cost, the materials would have to be required for use in a period irrespective of whether or not production takes place. That is an unlikely situation in most business operations.

Activity 3.2

You have been employed as a storekeeper at a superstore selling vehicle accessories. Write down the main procedures you would carry out to ensure that:

- *the materials in store are held securely;*
- *the accounting records of inventory are accurate; and*
- *the materials are issued only to authorised persons.*

3.3 Costs when input prices are changing

One problem faced by the accounts department is that suppliers change their prices from time to time. Materials held in store may have arrived at different times and at different unit prices. How does the accounts department decide on the unit price to be charged to each job when all the materials look the same once they are taken into store? In some cases it may be possible to label the materials as they arrive so that they can be identified with the appropriate unit price. That is a very time-consuming process and would only be used for high-value, low-volume items of materials. In other cases a convenient method is needed which gives an answer which is useful and approximately close to the true price of the units used. Yet another approach is to ignore the effect of changing prices by using a standard cost established for the entire accounting period. (Standard costs are explained in Chapter 15.)

3.3.1 Method of calculation

The usual procedure in the UK is to assume, for pricing purposes, that the first materials to arrive in store are the first ones to leave. This is usually abbreviated to 'FIFO' (first-in-first-out). Some businesses prefer to use the average cost of all items in inventory as the basis for pricing issues. Another possibility is to assume that the last materials to arrive in store are the first ones to leave. This is not used frequently in the UK because it is not accepted by the tax authorities. However, for management purposes, the best method for the purpose should be applied, irrespective of legal requirements. Management accounting escapes the constraints of statute law, accounting standards and tax law which restrict practice in financial accounting.

Exhibit 3.2 compares three options – First-In-First-Out (FIFO), Last-In-First-Out (LIFO) and Average Cost. In each case, Exhibit 3.2 takes a very simple approach, not complicated by having inventory at the start of the period. In real life the calculations can be much more tricky.

3.3.2 Approximation when dates are not recorded

In business there may not be time to keep the detailed records shown in the calculations in Exhibit 3.2. In such cases the sales volume is known in total but the dates of sale are not recorded. The calculation then uses the best approximation available, which usually means working through the costs from the oldest date, for FIFO, or the

Exhibit 3.2 Pricing the issue of goods to production

There are three parts to this illustration. Panel (a) contains a table setting out the data to be used in the calculation. Panel (b) defines the three bases of calculation. Panel (c) uses the data from panel (a) to illustrate each of the three bases.

(a) Data

<i>Date</i>	<i>Received</i>	<i>Unit price</i>	<i>Price paid</i>	<i>Issued to production</i>
	Units	£	£	Units
1 June	100	20	2,000	–
20 June	50	22	1,100	–
24 June	–	–	–	60
28 June	–	–	–	70
Total	150		3,100	130

(b) Bases of calculation

First-In-First-Out (FIFO)

Assume that the goods which arrived first are issued first

Last-In-First-Out (LIFO)

Assume that the goods which arrived last are issued first

Average cost

Assume that all goods are issued at the average price of the inventory held

Exhibit 3.2 continued

(c) Calculations					
<i>Basis</i>	<i>Date</i>	<i>Quantity and unit price</i>	<i>Issued to production</i>	<i>Held in inventory</i>	<i>Total</i>
FIFO			£	£	£
	24 June	60 units at £20	1,200		
	28 June	40 units at £20 30 units at £22	1,460		
	30 June	20 units at £22		440	
Total			2,660	440	<u>3,100</u>
LIFO			£	£	£
	24 June	50 units at £22 10 units at £20	1,300		
	28 June	70 units at £20	1,400		
	30 June	20 units at £20		400	
Total			2,700	400	<u>3,100</u>
Average			£	£	£
	24 June	60 units at £20.67*	1,240		
	28 June	70 units at £20.67*	1,447		
	30 June	20 units at £20.67*		413	
Total			2,687	413	<u>3,100</u>

*Weighted average $[(100 \times 20) + (50 \times 22)]/150 = £20.67$.

most recent date, for LIFO, without attempting to match the various batches bought and sold during the year.

3.3.3 Choice of FIFO, LIFO or average cost

Look at panel (c) of Exhibit 3.2 and compare it with panel (a) of that exhibit. You will see from panel (a) that the total amount spent on materials during the month was £3,100. You will see from panel (c) that the total of the cost of goods issued to production, plus the cost of unsold goods, is always £3,100 irrespective of which approach is taken. All that differs is the allocation between goods used in production and goods remaining unsold. Cost can never be gained or lost in total because of a particular allocation process, provided the process is used consistently from time to time. The FIFO approach suffers the disadvantage of matching outdated costs against current revenue. The LIFO approach improves on FIFO by matching the most recent costs against

revenue, but at the expense of an inventory value which becomes increasingly out of date. The average cost lies between the two and becomes more intricate to recalculate as more items come into inventory. In practice, the choice for internal reporting in management accounting is a matter of finding the best method for the purpose.

There is an effect on profit of the year which may influence management choice. When prices are rising and inventory volumes are steady or increasing, FIFO gives a lower cost of sales and so a higher profit than LIFO. If there were no regulations, companies that wished to show higher profits (perhaps to impress the stock market) might prefer FIFO. Companies that wished to show lower profits (perhaps to reduce tax bills) might prefer LIFO. In the UK, HM Revenue and Customs (tax authorities) do not permit LIFO. Accounting standards point towards FIFO.

3.4 Accounting for labour costs

The cost of any resource used in a business is the product of the amount of resource used and the price per unit of the resource. For the resource of labour, the amount of resource is usually measured in terms of hours worked and the price is usually expressed as a rate paid per hour.

3.4.1 Types of pay scheme

The first problem which the management accountant meets in dealing with labour costs is that different employees are on different pay schemes and there are additional costs imposed on the employer through having employees.

- Some employees receive a *monthly salary*, paid at the end of the month worked. They are expected to work whatever number of hours is necessary to complete the tasks assigned to them. This type of remuneration is most commonly found in the case of administrative staff where the emphasis is on undertaking tasks which are necessary to the overall duties and responsibilities of the post.
- Other employees receive a basic *salary per week*, or *per month*, which is augmented by extra payments depending on output levels or targets achieved. This type of pay scheme has a 'loyalty' element in the basic salary, together with a reward for effort in the output-related extra payments.
- Some employees may be paid an *hourly rate* based on actual hours worked, receiving no payment where no hours are worked. Finally, there may be some employees paid on a piecework basis, receiving a fixed amount for every item produced, regardless of time taken.
- *Benefits in kind*. There may be labour costs of the business which are not paid to the employee in the form of wages or salary. These would include the provision of a car, free medical insurance, clothing allowances, rent allowances, relocation and disruption payments, inducements to join the company and lump sum payments on leaving the company.
- There are also the *employer's labour costs*, such as contributions to national insurance, which are part of the total labour cost as far as the business is concerned.

3.4.2 Incentive pay schemes

There is a view that linking pay to performance will encourage staff to work harder. In a manufacturing-based industry, rewards can be given in pay to reflect the volume of output from each employee. This is called *performance-related pay* ('PRP'). In a service-based industry, and in the public sector, it is more difficult to relate pay to performance.

Real world case 3.2

The following extract is from an article discussing the problems faced by General Motors in 2008 and compares the full cost of labour with the wages paid.

Management and the union are under pressure to bring labour costs into line with those at non-union plants, mostly in the southern states, operated by Toyota, Honda and other foreign carmakers.

UAW members have a long reputation as the aristocrats of US labour. Their generous pay and benefits are credited with bringing blue-collar workers into the middle class.

GM estimates its labour costs at \$69 per worker per hour, compared with \$53 at Toyota. But these bald numbers, the ones most cited by Detroit's critics, do not tell the full story. While a gap remains, it is closing. Ron Gettelfinger, the UAW's president, used a baseball analogy to make his case that the union had made more than its fair share of sacrifices to keep the carmakers afloat. 'We're on third base and the other stakeholders are not even in the ballpark,' he said.

GM and Toyota workers earn similar wages of about \$29 an hour. The big difference is in fringe benefits, such as healthcare insurance and pensions. The overall labour-cost figures also include retiree benefits. Thousands of GM, Ford and Chrysler workers were on pensions with generous healthcare benefits – foreign carmakers have a fraction of the number of retirees.

Source: Bernard Simon, *Financial Times*, 15 December 2008. 'High wages put Detroit union under pressure'.



Discussion points

- 1 Why is the hourly cost of labour for a business higher than the amount stated as wages paid to employees?
- 2 How could a self-employed person establish a personal labour cost that would be comparable to the cost of an employed person?

Very often the quality of service is more important than the quantity of service. PRP is used when it is relatively easy to measure output from an individual employee. *Merit pay* is a form of reward that is based on a judgement of the quality of the employee's work. Merit pay is used when it is more difficult to measure the output of an individual employee. There is no reason why performance-related pay and merit pay should not be used in the public sector, but research has indicated they are less prevalent.¹

3.4.3 Determining the labour cost in an item of output

The differences outlined in sections 3.4.1 and 3.4.2 all add to the problems of the management accountant in converting the variety of schemes to a uniform basis for costing purposes. Usually, calculating a rate per hour is sufficient to provide such a uniform basis, provided the number of hours worked is known. The cost of labour used on any job may then be determined by multiplying the hourly cost by the number of hours worked.

3.4.4 Cost classification and labour costs

The classification system is concerned with whether costs are direct or indirect and whether they are fixed or variable.

How are direct and indirect labour costs distinguished?

Multiplying unit cost by the number of hours worked is fine provided there is a time record and that time can be allocated exclusively to one product at a time. In some businesses it might be feasible to keep track of specialist labour time spent on each product. This part of the labour cost is regarded as the direct labour cost.

Some labour costs may never be allocated directly to a specific job because they are spread over a range of jobs and activities, each of which must take a share (e.g. a supervisor's salary, a cleaner's wages or non-productive time when skilled employees are not able to work because equipment needs attention). This part of the labour cost is called **indirect labour cost**. Indirect labour costs also include holiday pay, bonus payments and overtime pay. That gives the management accountant a further problem – deciding on a fair basis for apportionment of indirect labour costs. Apportionment of indirect costs will be dealt with in Chapter 4 on production overhead costs.

How are fixed and variable labour costs distinguished?

One quite difficult question with labour costs is to decide whether they are fixed or variable costs. If the employee is on a contract which provides a fixed basic salary, then the total salary is a fixed cost for the organisation. The employee will then spend time on producing output and that amount of time will vary depending on the level of output. Thus the direct labour cost attributable to that employee will be a variable cost, depending on level of output. The remaining time, when the employee is not producing output, will be classed as an indirect cost of non-productive labour.

3.4.5 Recording labour costs

The system for recording labour costs must be capable of dealing with the payroll aspects (keeping track of how much is paid to each employee) and with the cost allocation aspect of tracing those payroll costs, together with other labour costs, to the products of the business. That in turn requires a careful recording of the total time worked by the employees each week, analysed into the time spent on each product and the amount of non-productive time.

Direct labour costs will be calculated using hours worked and the hourly rate for each employee. The hours worked will be collected from employee time sheets which show the time spent on each product unit. Hourly rates for each employee will be available from personnel records, based on the cost of employing that particular person.

In practice, it is likely that costing records will be kept on computer, with employees entering data on-line.

Activity 3.3

You are employed in the personnel department of a large organisation. Explain how the records kept by the personnel department would be useful to the accounting department in preparing the monthly payroll.

Real world case 3.3

The following extract is taken from an editor's introduction to consultation on the future direction of a regional newspaper.

So what could a new *Birmingham Post* look like, one to weather the recession and emerge equipped to thrive in the new media world? The facts: our biggest expenses are staff and manufacturing costs. Any change that doesn't reduce either or both of these areas simply won't plug the profit gap, so our approach is to look at reducing the overall number of pages printed per week. With each page lost, you reduce the absolute cost of the ink and paper – and also the work that goes into producing the content, and hence the labour cost. We've therefore looked at reducing the size of the paper on an average day, or reducing the number of days on which we publish.

BIRMINGHAM POST

We're now left with two options, each of which result in broadly the same improvement of the profit position, but are at opposite ends of the spectrum.

In the first option, the daily pagination of the *Post* would be reduced to just 40 or 48 pages per day, including Wednesdays, Thursdays and Fridays, when we currently exceed 60 pages. Because of the need for savings, many of those pages will need to rely more on contributed content and national stories from agencies than is currently the case, and the local flavour will be diluted.

The second option is to move to a weekly model – probably publishing on Thursdays – with a much bigger edition of around 96 pages at its core, plus commercial supplements and sections such as *Post Property* and *Living* magazine.

Source: Marc Reeves 'The Post has to change'; *Birmingham Post* 26 August, 2009, p. 4.

Discussion points

- 1 What other costs will be reduced alongside the reduction in labour costs?
- 2 How will the company achieve the same profit improvement from two different proposals?

3.5 What the researchers have found

3.5.1 Outsourcing labour services

Langfield-Smith and Smith (2003) describe and analyse the outsourcing of information technology and telecommunications (IT & T) by an electricity supply business. The reason for outsourcing was to obtain the best quality of IT & T service through competitive tendering. This was thought likely to provide improvements over in-house provision. Initially the price charged for IT & T was based on direct costs, overhead and a profit margin. But after 18 months of operation the payment system was changed to one based on risks and rewards. Direct costs would be covered by the electricity supply company, to which bonuses would be added based on cost, quality and time. So the remuneration package looked very much like the kind of incentive scheme seen for employees inside a business. What this probably indicates is that labour requires incentive-based rewards, whether as employees or as independent contractors. The researchers interpreted the eventual success of the IT & T outsourcing as evidence of the importance of building a relationship of trust between the management of the electricity supply company and the management of the IT & T

company. They concluded that trust could be developed in parallel with more stringent accounting controls, despite evidence to the contrary from other sources. It appears from this research that the management needed the formal mechanism of outsourcing to exercise control over a labour cost that could not be obtained by having the IT & T function provided by employees.

3.6 Summary

Key themes in this chapter are:

- **Total product cost** is defined as consisting of direct materials, direct labour and **production overhead cost**.
- **Prime cost of production** is the cost of direct materials, direct labour and other direct costs of production.
- The purchasing, storage and use of materials are controlled by documentation and processes that are designed to safeguard the assets and ensure the accuracy of recording systems.
- FIFO (first-in-first-out) and LIFO (last-in-first-out) are methods of pricing the issue of goods from inventory, and the valuation of inventory, in times when prices are changing.
- Accounting for materials is explained, highlighting the importance of documentation, the distinction between direct and indirect costs of materials and between fixed and variable costs of materials.
- The costs of **waste** and **scrap** are indirect costs that form part of the total production cost. Any cash received for scrap should be deducted from the cost of buying the materials.
- Labour costs are recorded and controlled in a way that ensures employees are paid correctly for work done and labour costs of activities are recorded accurately.
- Accounting for labour costs is explained, highlighting the distinction between direct and indirect labour costs and between fixed and variable costs of labour.

References and further reading

- Burgess, S. and Metcalfe, P. (1999) 'The use of incentive schemes in the public and private sectors: evidence from British establishments', CMPO Working Paper Series No. 00/15.
- Langfield-Smith, K. and Smith, D. (2003) 'Management control systems and trust in outsourcing relationships', *Management Accounting Research*, 14: 281–307.

QUESTIONS

The Questions section of each chapter has three types of question. '**Test your understanding**' questions to help you review your reading are in the 'A' series of questions. You will find the answer to these by reading and thinking about the material in the textbook. '**Application**' questions to test your ability to apply technical skills are in the 'B' series of questions. Questions requiring you to show skills in '**Problem solving and evaluation**' are in the 'C' series of questions. A symbol [S] means that there is a solution available at the end of the book.

A Test your understanding

- A3.1** What are the main items in a statement of the cost of production of an item of output (section 3.1)?
- A3.2** How may a system of materials control procedures ensure accurate accounting information for job-costing purposes (section 3.2.1)?
- A3.3** Which source documents should be used to create the accounting record for direct materials costs (section 3.2.1)?
- A3.4** What are the problems of accounting for wastage and scrap (section 3.2.2)?
- A3.5** How are direct and indirect materials costs distinguished (section 3.2.3)?
- A3.6** How are fixed and variable materials costs distinguished (section 3.2.3)?
- A3.7** What is meant by the term 'FIFO', when used in deciding on the cost price of goods issued to production (section 3.3)?
- A3.8** What is meant by the term 'LIFO', when used in deciding on the cost price of goods issued to production (section 3.3)?
- A3.9** What types of pay scheme may be found (section 3.4.1)?
- A3.10** How are direct and indirect labour costs distinguished (section 3.4.4)?
- A3.11** How are fixed and variable labour costs distinguished (section 3.4.4)?
- A3.12** What conditions may help to make outsourcing of labour successful (section 3.5.1)?

B Application

B3.1 [S]

The following information was recorded during the month of May by the central warehouse of Stores Co. The warehouse issues goods to retail outlets owned by Stores Co. to allow the retail outlets to meet expected demand from customers. The record represents kitchen units, all of the same type.

<i>Date</i>	<i>Received into store</i>	<i>Unit price</i>	<i>Price paid to supplier</i>	<i>Issued to retail outlets</i>
	Units	£	£	Units
1 May	120	30	3,600	–
19 May	60	34	2,040	–
22 May	–	–	–	80
30 May	–	–	–	70
Total	180		5,640	150

Calculate (i) the cost of goods issued to retail stores during May and (ii) the cost value of goods held in the warehouse at the end of May, under each of:

- FIFO
- LIFO
- average cost.

Application

B3.2 [S]

Explain which document you would expect to find in the records of Chocolate Ltd as evidence of each of the following transactions or events which took place during the month of June:

- Evidence that the buying department of Chocolate Ltd had authority to order new supplies of cocoa beans from a supplier.
- Evidence that the supplier had the authority to send cocoa beans to Chocolate Ltd.
- Evidence that the cocoa beans arrived at the stores of Chocolate Ltd in good condition and in the quantities expected.
- Evidence that the amount payable to the supplier is correct in quantities and prices.
- Evidence that the storekeeper of Chocolate Ltd had the authority to release cocoa beans to the production unit, for conversion to chocolate.

B3.3 [S]

The Electric Wiring Company employs staff to repair electrical equipment in customers' homes under maintenance contracts. Each job of work is the cost unit for which costs are recorded and monitored. Explain which of the following will be direct labour costs and which will be indirect labour costs for each cost unit:

- The hourly rate payable to an employee technician for hours worked on repairing electrical equipment for customers under maintenance contracts.
- The hourly rate payable to a cleaner who works in cleaning the head office premises.
- The annual salary paid to a supervisor who allocates work to technicians carrying out repair work for customers, and who also checks the quality of the completed work.
- The monthly allowance paid to technician employees for being available 'on call' for emergency repairs.

C Problem solving and evaluation

C3.1

You are the newly appointed secretary of a primary school employing 20 teachers and having 300 pupils. The head teacher has asked you to design a system for ordering books and stationery and controlling the issue of books and stationery to teachers. Make a list of the key features that you will recommend for the new system.

C3.2

You have been asked to plan the labour force for a job of work that will require the equivalent of five skilled workers for a period of 30 days. Within that period there is an expectation of 25 days of productive work and five days equivalent of non-productive work relating to rest periods and statutory holiday leave. You have only been able to find three workers of sufficient skill who will work full-time. There are two part-timers who together will cover the equivalent of one further full-time worker. You will need to hire agency staff on an hourly basis to make up the shortfall.

Explain the problems you will face in estimating the labour cost of the job.

Case studies

Real world cases

Write short answers to Case studies **3.1**, **3.2** and **3.3**.

Note

- Burgess and Metcalfe (1999).