Cost and Management Accounting

JILL COLLIS
ROGER HUSSEY

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Jill Collis and Roger Hussey

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Preface

The purpose of cost and management accounting is to provide financial information to managers that will help them to plan the progress of the organisation, control the activities and see the financial implications of any decisions they may take. If cost and management accounting does not make a useful contribution to the management of the organisation, it is of no value and should not be undertaken. Although providing detailed accounting information incurs costs in the collection and analysis of data, experience shows that, if properly applied, the techniques and methods of cost and management accounting make a significant contribution to effective management.

Cost and Management Accounting has been written for students who have no prior knowledge of accounting. Although those who are studying financial accounting at the same time may find some of the concepts and approaches familiar, such knowledge is not a prerequisite. The book can be used on professional courses in accounting and other courses in universities and other institutions of higher and further education where management accounting forms part of the syllabus.

In this book we have set out to introduce students to the methods and techniques of management accounting by writing in a clear, accessible style, avoiding technical jargon and by using simple examples. The early chapters lay the foundation for the later ones which introduce the various methods and techniques of cost and management accounting.

The second edition of the book is divided into 22 chapters in a logical teaching sequence, and is ideal for a one-year course. In addition, the text has been updated and we have added a number of interactive features. The aim of the Self-Check Questions is to highlight the key points and allow students to test their comprehension of what has just been read. The other Activities are intended to serve as the basis of discussion and explanation. At the end of each chapter there are a number of Practice Questions which have mainly been taken from the examination papers of the professional accounting bodies. Outline answers to these questions are given in Appendix C.

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1 Cost and Management Accounting in Context

1.1 Introduction

This chapter explains why the techniques and methods of *cost and management accounting* are important tools in many organisations. In practice, the phrase *management accounting* is often used to cover both cost and management accounting. Whether the activity is producing game shows for television, manufacturing computers, running a hospital ward or taking tourists on holiday, the organisation's managers require financial information to help them do their job efficiently and effectively. Cost and management accounting contribute to good management by providing financial information that assists managers in controlling activities, making plans and deciding between alternative courses of action. There are no legal requirements for businesses and other forms of organisation to have a cost and management accounting system, but experience shows that such a system plays a valuable part in the efficient running of any establishment.

In this chapter we introduce the different aspects of cost and management accounting and define some of the main terms used. We review the main methods and techniques that are examined more fully in subsequent chapters and explain the differences between financial and cost and management accounting.

1.2 Purpose of Cost and Management Accounting

Information is required to run any type of organisation successfully. A considerable proportion of this information will be financial. The *purpose* of cost and management accounting is to provide financial information to managers that will help them to plan the activities, control the activities for which they are responsible and see the financial implications of any decisions they may take. If cost and management accounting does not make a useful contribution to the management of the organisation, it is of no value and should not be undertaken. Providing detailed cost and management accounting information incurs costs in the collection and analysis of data, but experience shows that if properly applied, the techniques and methods of cost and management accounting make a significant contribution to effective management.

Activity

A colleague claims that cost and management accounting is of value only in a manufacturing company. Identify other sectors and organisations where it would be useful, and give some illustrations of how it would be of value.

Although we have not progressed very far in this book, you should be able to answer this question by drawing on your own experience. If you have ever tried to organise a social event to which people are expected to contribute, you will know that the first question you need to ask yourself is 'How much is it going to cost?' Organising a surfing trip to the coast, for example, will necessitate finding out the cost of transport, food and hire of equipment. If you contemplate running a small business, such as a news agency, you will need to know the costs of renting premises, the goods you purchase, advertising, telephone, and wages if you employ staff.

Whether the activity is of a leisure activity, such as organising a fishing trip or a party, a community activity, such as providing services for the elderly, or part of industry, such as manufacturing cars or pizzas, those responsible for the activity will require financial information. Although these activities are very different in nature, there are a number of similarities in respect of the types and detail of the financial information required. The most important information relates to the individual costs. So, in our examples, the cost of hiring the boat for a fishing trip will be required, the cost of wages and travel in providing home visitors for the elderly, the cost of the materials for making cars or ingredients for making pizzas. With large service and manufacturing organisations there are costs associated with premises, machinery, equipment, advertising, employee benefits, etc. With all activities it is essential to know what the costs are to determine whether the activity can be afforded or whether alternatives should be sought; in profit organisations, the costs are required to help establish selling prices.

Because cost and management accounting has been shown to be essential to the efficient running of an organisation, it has become widely used in both the public and the private sectors of industry, in both service and manufacturing organisations. Traditionally, costing information was mostly used in the manufacturing industry and provided fairly basic data on the costs that had been incurred in the manufacturing processes. As the economy became more complex and competitive, and with the growth of the service sector and the need for more rigorous information for running public services, so the demand for more sophisticated financial information has grown. From being a record of past events, techniques have been developed that allow managers to examine the financial consequences of alternative courses of action and to predict the financial consequences of future changes.

Self-check question

What is the purpose of cost and management accounting?

1.3 Definition of terms

The twin topics of *cost accounting* and *management accounting* can be studied separately, but because the two subjects are closely integrated there is an advantage in taking a collective view. Cost accounting can be considered to be a part of management accounting. It is concerned with the collection and ordering of data to show the actual costs of operations, departments or products. Management accounting is broader in nature than cost accounting, and is part of the function of management.

With cost accounting in its simplest form, data may be collected only on past events. The costs actually incurred by the organisation in carrying on its activities will be identified and recorded. The costing system may provide such information as the cost of making one unit of production, the cost of running a particular department and the cost of scrap material. In more advanced costing systems, planned costs will be decided before any activity takes place. The subsequent costs incurred can be compared with the planned costs, the differences identified and the reasons for these differences examined. Such planned costs are known as *budgets* and *standard costs.*

Management accounting encompasses the methods and procedures of cost accounting, with the purpose of providing information to managers so that policies can be formulated, activities planned and controlled, decisions on alternative courses of action taken, assets safeguarded, and the activities of the enterprise reported to interested parties.

In theory and in practice, the division between cost accounting and management accounting is blurred. In general, cost accounting concentrates on the simpler techniques and the systems and procedures for collecting and analysing data. Management accounting adopts a more advanced approach, with a greater involvement in the process of the management of all the activities of the organisation. Because cost and management accounting systems and procedures within an organisation must be designed to meet the needs of the managers of that particular establishment, there are a range of systems in use. But at the foundation of all systems is the requirement for cost and management accounting to assist managers by providing relevant and timely information.

Self-check question

What are the main differences between cost accounting and management accounting?

1.4 Control, Planning and Decision-Making

The activities of managers can be divided into three main functions to which cost and management accounting makes a contribution. The first is concerned with the *control* of the organisation, both on a day-to-day basis and longer-term. The second function is concerned with *planning* for the future and setting policies to ensure the success of the enterprise. Third, managers are concerned with looking at alternative courses of action open to them and *deciding* which is the preferred course.

Most organisations have a number of control systems to ensure that progress is made towards achieving set objectives. In many businesses there is a quality control department to safeguard the fitness of the product or service. In manufacturing companies there is some form of production control to monitor and coordinate the production processes. Cost and management accounting provides the fundamental financial control system that is essential for the efficient working of the organisation. For control to be maintained, detailed information is required on such matters as the various costs of products and processes, the monitoring of labour efficiency and the identification of sources and purposes of all expenditures.

Some form of control can be maintained by comparing present results with what has happened in the past. Unfortunately, as the business environment is subject to rapid change, such a retrospective comparison may prove of little value. The organisation may be currently operating in an economic climate very different from that of even a few months ago. More rigorous control can be achieved by comparing actual results with planned results. Without plans and policies an organisation has no sense of direction or purpose. Cost and management accounting allows plans and policies to be formulated in financial terms and provides managers with information on targets and standards which the organisation intends to achieve.

Much management time is taken up with making decisions on the organisation's present and future activities. In establishing plans, managers have to decide which of the various courses of action they should take. Cost and management accounting supplies information on the financial implications of the various courses of action, thus helping managers to select the most appropriate one. It is at this more complex level of decision-making that the emphasis falls on the techniques and principles associated with management accounting, rather than the simpler methods of cost accounting.

Self-check question

How does cost and management accounting contribute to the other functions of management?

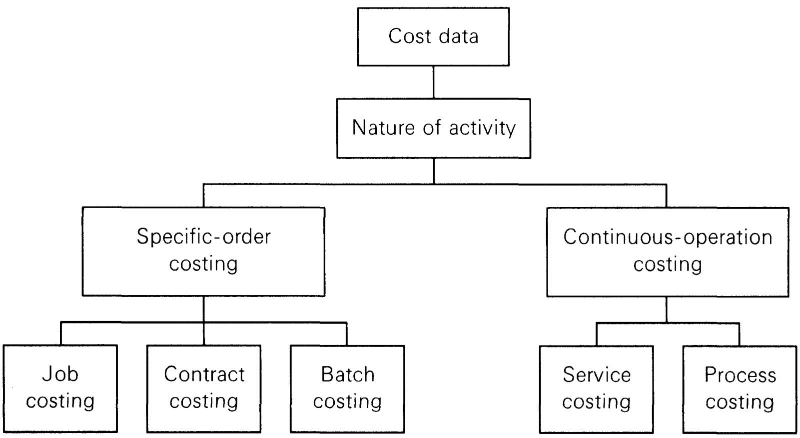
1.5 Costing Methods

Cost and management accounting establishes systems and procedures for collecting, analysing, summarising and presenting information to management. The methods adopted are determined by the nature of the organisation's activities. *Costing methods* can be classified into two main groups which are determined by the nature of the activities as shown in Figure 1.1.

Specific-order costing is used where the activity results in units, or products, which are normally different from each other. The work produced consists of separate contracts or batches which can be easily identified. For example a jobbing printer will carry out a unique job for each customer. On a larger scale, the construction of a bridge over a river will be the result of a specific order to do so. Specific-order costing can be broken down into three particular methods. Although they have much in common, each has its own specific requirements depending upon the nature of the industry:

- *Job costing* is used when customers specify their requirements and the job, normally small in size and of short duration. Although it may move through various operations, every job remains identifiable.
- *Contract costing* is used when customers specify their requirements and the job, normally large in size and of long duration, is carried out on one site. This method is used widely in the construction industry.
- *Batch costing* is used when a quantity of identical articles is processed as one batch. The batch is treated as one job and all the costs charged to it. The total costs for the batch are then divided by the number of good units in the batch to give an average cost per unit. Spoilt or scrap units are not included in the calculations.

Fig. 1.1 Costing methods



Continuous-operation costing is used where the units are normally identical, or are capable of being made so by conversion. It is used when the goods or services result from a sequence of continuous operations or processes to which costs are charged before being averaged over the units produced during the period. Many manufacturing processes are of this nature. Continuous-operation costing can be divided into two particular methods:

- *Service costing* is used when specific functions or services are costed – for example, canteens or personnel departments. The method may be used to ascertain the cost of a service provided internally, or a service provided for external customers.
- *Process costing* is used where goods or services result from a series of continuous processes or operations. At each stage of the process costs are charged before being averaged over the units produced during the period.

Self-check question

What are the different costing methods used in organisations?

1.6 Principles and Techniques

The *costing principles* and *techniques* applied are determined by the purposes for which it is required and the form in which it is required by management. Figure 1.2 illustrates the six main techniques:

- *Absorption costing* is where both fixed costs and variable costs are charged to the cost units to give a total cost per unit. By using various techniques, described in Chapter 16, cost units are charged with what is regarded as a fair share of the organisation's overheads. The difference between the selling price and the total cost of a unit is the profit per unit.
- *Activity-based costing* is a relatively new technique which is popular in organisations which have advanced manufacturing technology. It attempts to identify the most realistic way for charging overheads to those activities which cause the costs to be incurred.
- *Budgetary control* establishes plans in monetary terms which relate managers' responsibilities to policies. A comparison of budgeted with actual results leads either to managerial action to achieve the original policy, or to a revision of the policy.

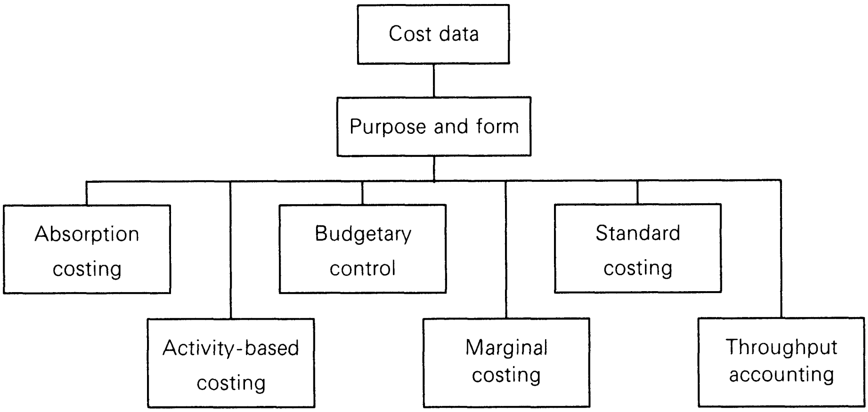


Fig. 1.2 Costing principles and techniques

- *Marginal costing* is where the variable costs only are charged to cost units. The difference between the selling price and variable costs of a unit is known as the *contribution*. The fixed costs for a particular period are charged in full against the total contribution for that period to arrive at a figure of profit for the business.
- *Standard costing* establishes predetermined standards for costs and revenues. By comparing the actual results with the standards, variances can be calculated and used by management to monitor progress and maintain control.
- *Throughput accounting* focuses on the fact that a number of organisation are constrained in the level of activity they can achieve by the presence of bottlenecks in the operations process. Managers strive to increase profitability by increasing throughput and reducing the cost of holding inventories and operational expenditure. Throughput accounting uses a similar approach to marginal costing.

Self-check question

What is meant by absorption costing, marginal costing and budgetary control?

1.7 The role of financial accounting

Financial accounting is concerned with classifying and recording in monetary terms the transactions conducted by an organisation. The main purpose of this is so that an account can be given to those who have authority for the organisation, whether that is the government, the committee of a tennis club, the partners in a firm of solicitors or the shareholders of a limited company.

The form that the financial account of the transactions takes depends on the nature of the organisation and to whom it is reporting. Possibly the most familiar is the report and accounts of limited companies when they are reporting to shareholders. The accounts of major firms such as Marks & Spencer, J Sainsbury, ICI and Cadbury–Schweppes are good examples. The financial reports and accounts of companies are intended to give a true and fair view of the financial progress of the company over a period of time in the form of a profit statement and the financial position as at one particular date in the form of a balance sheet.

Financial accounting is thus mainly concerned with reporting to external parties, although the information may also be used inside the organisation for management purposes. Normally, however, it is not suitable for internal purposes as there will be insufficient detail, the financial accounts will be drawn up for the organisation as a whole, often on an annual basis, and the manner in which the financial accounts are drawn up is usually specified by legislation or other regulations. For example, the accounts of limited companies are controlled by the amended *Companies Act 1985* and accounting standards issued by the *Accounting Standards Board* (ASB).

Most organisations produce both financial accounts and management accounts. Although the financial accountant and management accountant may classify and use information in different ways and for different purposes, the same base of raw data is used. In organisations where there is some form of cost accounting system in addition to the financial accounting system there is a strong relationship between the two. Both systems may be integrated into a single accounting system or there may be an interlocking system where cost accounts are maintained separately and reconciled periodically with the financial accounts (see Chapter 5).

Activity

From the following list, identify which activities are mainly concerned with financial accounting and which are concerned with cost and management accounting:

a Drawing up a balance sheet at the year-end.
b Calculating the cost of scrap on one of the production lines in a factory.
c Keeping the cash book for the local rugby club.
d Deciding which of two possible products is the most profitable.
e Ensuring that PAYE records are properly maintained.
f Calculating the energy costs used at the local hospital.
g Deciding the selling price for tickets for a rock concert.
h Ensuring that payments made by a company are shown in the bank statement.

Financial accounting is **a**, **c**, **e** and **h**; the rest are management accounting. Although some of the transactions may have been unfamiliar to you, you should have been able to distinguish between them based on their underlying purpose. In this book, financial accounting and the regulations surrounding it are not discussed further. The focus is cost and management accounting used for control, planning and decision-making. In Chapter 2 we take a closer look at some of the terms used.

Practice questions

1 A friend, who is an engineer, owns a small factory and has relied on the annual financial accounts to run the business. You have suggested that he employs a management accountant, but your friend is uncertain how this will be of benefit. Write a letter to your friend describing the management activities to which the person appointed could make a contribution.
2 Describe the main costing methods an organisation can use.
3 Compare the activities of a management accountant with those of a financial accountant.
4 Explain how cost and management accounting can assist management.

2 Cost Classification

2.1 Introduction

In order to run a business successfully, managers need to know the *cost* of making the products, supplying the services and conducting other activities. This information is required in some detail so that the cost of materials, wages and other items can be identified separately. The cost of an item can be very hard to determine and it is made more difficult by our differing perspectives, which vary according to whether we are buying or selling. There are also problems concerned with the meaning attached to the term *cost*, which can be used as a verb, a noun or an adjective.

In this chapter we look at the detailed elements of a company: the individual products and services and the various departments. We begin by clarifying what we mean by the term *cost*, before going on to describe *cost units* and *cost centres*. We then examine the various ways in which cost can be classified and the reasons for using them in organisations, before going on to describe the *elements of cost*.

2.2 What is Cost?

The *cost* of an item can be very hard to determine. A large part of this book is concerned with how we decide what is meant by cost. The main difficulty is that our views of cost are influenced by our differing perspectives. For example, if you buy a personal computer from a local retailer you might consider the cost to be what you paid for it. The retailer, however, may have a different opinion. Not only will the cost be what he paid the manufacturer for the computer, but he may wish to include a share of the costs of running his shop: the rent, lighting and salaries, etc. He must be certain that his selling price is sufficiently high to cover these costs, to ensure that he makes a profit.

You may have bought a pack of 10 disks for your computer for £10. A friend wishes to buy one from you one Sunday for some urgent work she is doing. The original cost to you was £1 per disk, but you know that if you replace that single disk the following Monday, it will cost you £1.25. What will you decide is the cost, if you agree to sell to your friend?

Because the term *cost* can be used in these ways with various interpretations, we normally try to make the meaning clearer. The word used as a verb means to calculate the cost of a specified thing or activity; used as a noun, it means the amount of actual or notional expenditure incurred on, or attributable to, a specified thing or activity. However the word is used it must be in context and defined by specific terms or a classification.

2.3 Cost Units and Cost Centres

Most organisations exist to provide an identifiable service or product. This output can be measured by devising some form of *cost unit*. This can be formally defined as a quantitative unit of product or service in relation to which costs are ascertained. What the precise unit of quantity is depends on the type of industry and cost units vary accordingly. In a brick works the cost unit may be 1,000 bricks and costs are identified which refer to that unit. In a service industry the cost unit may be of a somewhat more abstract nature. A hospital, for example, may use patient-bed-occupied as a cost unit and record all the costs relevant to that unit. A distribution company may regard a cost unit as a tonne-mile, so that the costs associated with moving one tonne of goods over one mile can be recorded.

As well as attributing costs to cost units, they can also be attributed to a *cost centre*. Any specific part of an organisation to which costs can be attributed may be designated a cost centre. It can be geographical (such as a department) or an item of equipment (such as a fork-lift truck). Even a person, such as a consultant or a salesperson, can be a cost centre.

Self-check question

What is meant by a cost unit and a cost centre?

2.4 Types of Cost

Costs can be described in a variety of way depending on the purposes for which the information is intended. These different *types* help us to understand better what is meant by the word *cost*.

Direct and indirect costs

A *direct cost* can be identified with a specific product or saleable service. Direct costs comprise direct materials used in the product, direct wages paid to the production workers for working on the product, direct expenses incurred on the product such as subcontract work, royalties or special tools. An *indirect cost* is one which cannot be identified with any one particular product, but has to be shared over a number of products because it is common to or jointly incurred by them. Examples are rates, supervisors' salaries, consumable materials.

Some costs may be theoretically direct, in so far as it is possible to identify them with a product, but management find it more convenient to treat the costs as indirect. For example, some material costs may be insignificant and the value gained in identifying them with particular products may be outweighed by the inconvenience in attempting to do so. Whether a cost is direct or indirect will depend on the analysis made at the time – in other words, what is being costed. For example, if a department is being costed, the supervisor's salary of that department is regarded as a direct cost. If one of the cost units passing through that department is being costed, the salary is regarded as an indirect cost. It is the focus of the analysis which determines the classification.

Self-check question

What is the difference between direct and indirect costs?

Fixed and variable costs

Fixed costs are those costs which, in total, tend to remain the same irrespective of changes in the level of activity (which may be production levels). *Variable costs* are those costs which, in total, tend to change in direct proportion to changes in the level of activity. It can be seen from this explanation that direct costs will always be variable costs.

Activity

Are the following statements true or false?

a Variable costs are constant per unit of output.
b Variable costs vary per unit of output as production volume changes.
c Variable costs are constant in total when production volume changes.
d Variable costs vary, in total, from period to period when production is constant.

The only true answer is **a**; all the others are false. As defined above, variable costs change in total in direct proportion with changes in the level of activity. Therefore they must be constant per unit of output. For example, if the cost of materials is £2 per unit of output, the total cost of materials for 20 units of output is £40. There are some complications to this simple example and we will look more closely at fixed and variable costs in Chapter 13.

Classification by Nature

It is essential for management to know the *nature* of the costs incurred. The basic classifications are *materials*, *labour* and *expenses*. These broad categories can be further subdivided. For example, materials may be broken down into raw materials, maintenance materials, etc. depending on the type of organisation and the information needs of managers.

Classification by function

Costs frequently relate to specific *functions*, such as the production function and the selling function. It is normally advantageous to classify them as follows:

- *Production costs* are costs incurred from receipt of the raw materials to completion of the finished product.
- *Selling costs* are costs incurred in creating demand for products and securing orders.
- *Distribution costs* are costs incurred from receipt of the finished goods from the production department to delivery to the customer.
- *Administration costs* are costs incurred in managing the organisation, but not specific to any of the other functions.

Product and period costs

Product costs are those costs which are identified with goods purchased or produced for resale. *Period costs* are those not identified with a particular product but with a period of time. In retailing or wholesaling organisations the costs of goods purchased are regarded as product costs and all other costs – e.g. administration, selling and distribution – are regarded as period costs. In a manufacturing organisation all the costs associated with manufacture are regarded as product costs and all non-manufacturing costs are regarded as period costs.

Sunk costs

Sunk costs are those costs that have been incurred in acquiring resources and where the total will not be affected by choosing between alternative courses of action. For decision-making purposes such costs are irrelevant as they cannot be changed by any further decision. For example, if you have some old equipment recorded in your accounts at a value of £1,000 that cost will have to be charged irrespective of what action you decide to take.

Relevant costs

Relevant costs are future costs that will be changed by the decisions made. For example, if a restaurant is deciding whether to serve only French wines or only Spanish wines the costs of maintaining the cellar are the same whichever alternative is chosen and are therefore irrelevant to the decision.