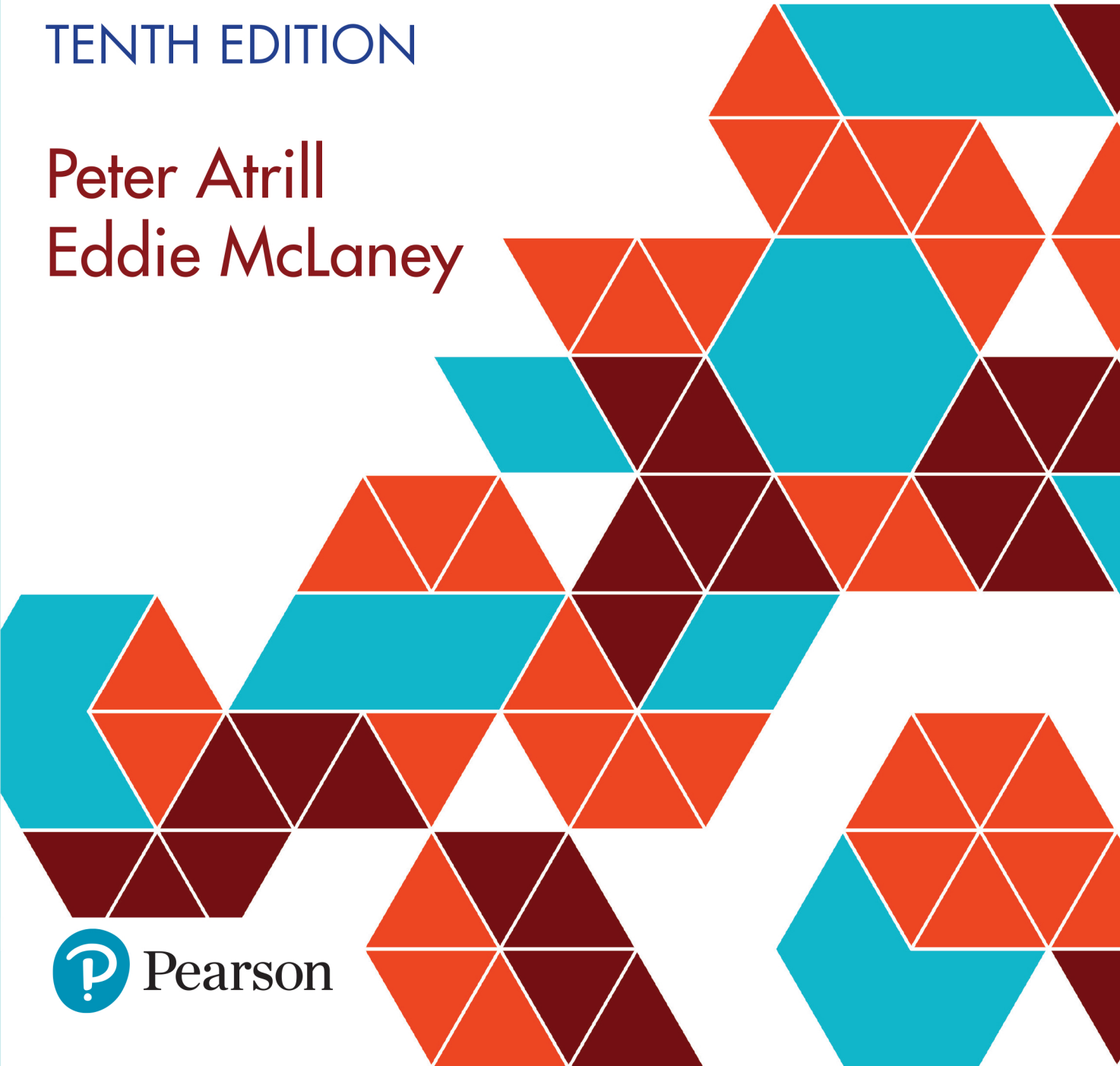
MANAGEMENT ACCOUNTING

FOR DECISION MAKERS

TENTH EDITION

Peter Atrill
Eddie McLaney



Pearson

MANAGEMENT ACCOUNTING

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Activity 5.5

How can ABC help managers' understanding of business operations and how can this lead to an improvement in performance?

Managers gain a deeper insight to the business by identifying the various support activities' costs and what causes them to change. Armed with this deeper insight, managers are better placed to control costs, improve efficiency and make future plans.

Despite its apparent advantages, critics point out that ABC can be a costly exercise. Setting up the costing system, as well as updating it, can consume a great deal of resources. Running an ABC system can also be complex and time-consuming, particularly where business operations involve a large number of activities and cost drivers. Management reports generated from a complex ABC costing system are also likely to be complex. If managers find these reports difficult to understand, the potential benefits of employing ABC may never be realised.

Where products or services have similar levels of output involving similar activities and processes, or where overheads form a relatively low proportion of the total costs, the more accurate measurements provided by ABC are unlikely to lead to strikingly different outcomes from those obtained under the traditional approach. Thus, opportunities for better pricing, planning and cost control may be few. In such situations, switching to an ABC system would be difficult to justify.

Measurement and tracing problems may arise with ABC. Not all costs can be easily traced to a particular activity. Nevertheless, all activity costs have to be assigned to one cost pool or another. To ensure that all these costs are taken into account, some may be assigned to cost pools on an arbitrary basis. Poor quality data on activity costs may also lead to arbitrary cost assignments. A final issue is that the relationship between activity costs and their cost drivers may be difficult to determine. Identifying a cause-and-effect relationship can be difficult where activity costs are fixed and do not change with changes in operating activities. As a result of these difficulties, cost information derived from an ABC system may prove to be based on almost as much arbitrariness as is the case with information derived from a traditional approach.

Finally, ABC is criticised for the same reason that traditional full costing is criticised – it does not provide relevant information for decision making.

Activity 5.6

Can you recall from Chapter 4 why traditional full costing is criticised for being irrelevant for decision making?

Traditional full costing tends to use past costs and to ignore opportunity costs. Past costs, however, are irrelevant in decision making. Opportunity costs, on the other hand, are relevant and can be significant. For these reasons, some view full costing as an expensive waste of time.

ABC suffers from these same weaknesses. We may also recall from Chapter 4, however, that supporters of full costing claim that it *is* relevant for decision making. It provides an indication of long-run average cost, which, in turn, gives managers some idea of the long-term cash flows to be incurred.

ABC in practice

Real World 5.1 briefly describes how ABC is used at the Royal Mail.

Real World 5.1

Delivering ABC

Royal Mail processes and delivers more than fourteen billion letters and one billion parcels each year. It was in the public sector until 2013, when it became a private sector business. The business operates an ABC system for both internal decision-making and for external reporting. Given its size and the range of activities carried out, it is not surprising that the ABC system is very complex. There is a costing manual, which runs to more than 100 pages, to outline the principles and methods employed.

The ABC system operated by Royal Mail involves the following main steps:

1. All costs recorded in the Royal Mail's accounting systems are grouped into cost types;
2. Business processes are divided into activities, which are various tasks or work required to complete a business process;
3. Activities are costed by allocating cost types to them using *resource drivers* which determine what proportion of each cost type must be allocated to each relevant activity; and
4. Activity costs are then allocated, using *activity drivers* to commercial products and services.

To help illustrate these steps, the main processes and activities carried out by Royal Mail include the following:

Business process	*Description*
International Operations	Mail processed for export and despatch for overseas delivery or import mail processed for despatch around the country to other Mail Centres.
Network	Distribution of mail between Mail Centres, International Operations and RDCs (Regional Distribution Centres) moving the mail closer to its final delivery destination.
Delivery – Indoor	Sorting of the mail to specific delivery routes and then sequenced to the final delivery point in preparation for the actual delivery to individual addresses.
Delivery – Outdoor	Taking the mail from the Delivery Office and delivering to the individual addresses.

We saw above that the ABC system operated by Royal Mail employs resource drivers and activity drivers in a two-stage process. Resources used by the business are assigned to activities using resource drivers. The main resources consumed, and their drivers, are as follows:

Resource	*Resource driver*
Operational staff	Staff hours
Vehicles	Vehicle hours
Machines	Machine hours
Property	Accommodation square metres

The costs of these various activities, as calculated through the use of resource drivers, are assigned to products using activity drivers. (As we may imagine, the volume of mail posted by customers is an important basis for activity drivers.)

Figure 5.3 summarises how the ABC system works.

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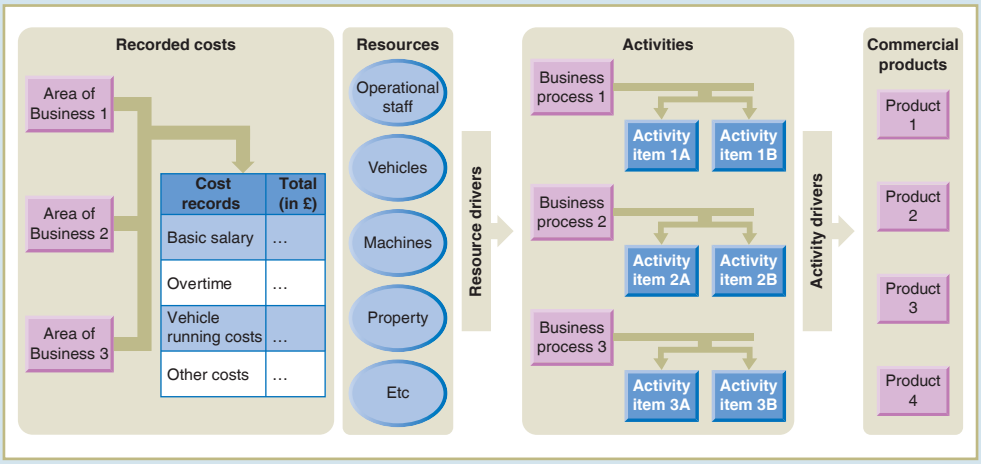


Figure 5.3 Illustration of Royal Mail's costing system

Source: Based on Royal Mail Group Ltd (2015) *ABC Costing Manual 2015–16*, November. Diagram adapted from Ofcom (2018) *Review of Regulatory Financial Reporting for Royal Mail*, 19 December, www.ofcom.org.uk, p. 23.

Real World 5.2 provides some indication of the extent to which ABC is used in practice.

Real World 5.2

ABC in practice

A survey of 176 UK businesses operating in various industries, all with annual sales revenue of more than £50 million, was conducted by Al-Omiri and Drury. This indicated that 29 per cent of larger UK businesses use ABC.

The adoption of ABC in the UK varies widely between industries, as shown in Figure 5.4.

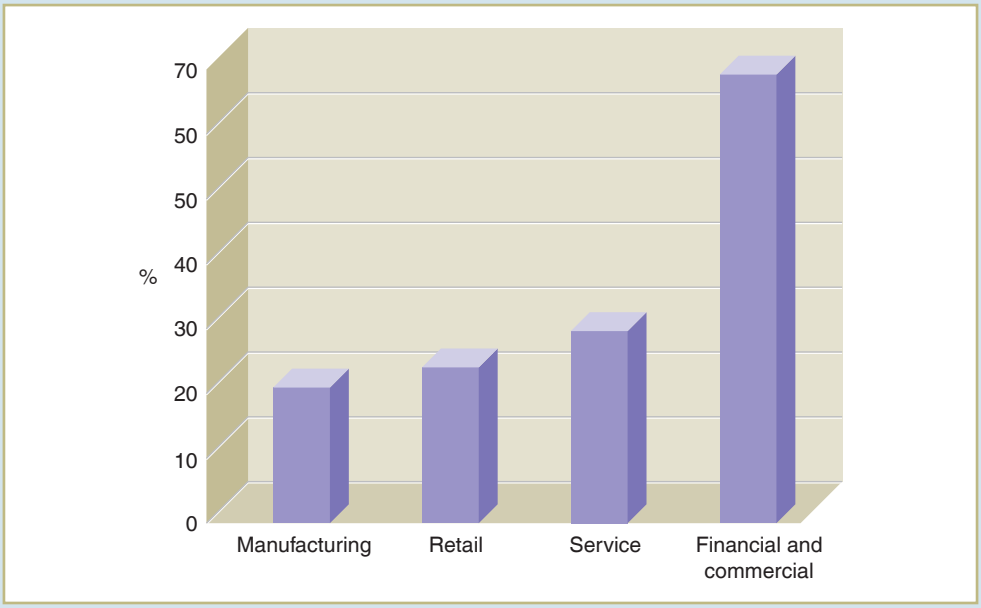


Figure 5.4 The percentage of businesses in different sectors that use ABC

Al-Omiri and Drury took their analysis a step further by looking at the factors that apparently tend to lead a particular business to adopt ABC. They found that businesses that used ABC tended to be:

- large;
- sophisticated, in terms of using advanced management accounting techniques generally;
- in an intensely competitive market for their products; and
- operating in a service industry, particularly in the financial services.

The 2009 CIMA survey emphatically supported the finding that larger businesses tend to use ABC more than smaller ones. It showed that only 22 per cent of businesses with fewer than 50 employees use ABC, whereas 46 per cent of businesses with more than 10,000 employees use the technique.

However, a more recent survey of 171 large (top 1,000) Irish businesses found that only 19 per cent adopted ABC.

Sources: Al-Omiri, M. and Drury, C. (2007) A survey of factors influencing the choice of product costing systems in UK organisations, *Management Accounting Research*, vol. 18, pp. 399–424; CIMA (2009) *Management Accounting Tools for Today and Tomorrow*, p. 12; Quinn, M., Elafi, O. and Mulgrew, M. (2017) Reasons for not changing to activity-based costing: a survey of Irish firms, *PSU Research Review*, vol. 1, no. 1, pp. 63–70.

The relatively low rate of adoption of ABC, even among large businesses, raises the question as to why businesses have not adopted ABC. **Real World 5.3** looks at evidence concerning this issue.

Real World 5.3

It isn't as easy as ABC

The 2017 survey of 171 large Irish businesses, mentioned in Real World 5.2, asked those businesses that had not adopted ABC why they had not done so. Their answers were as follows:

	Per cent
Broadly regard their present approach to product costing as adequate	52
Would find it too time consuming to adopt ABC	15
Lack enough understanding of ABC	9
Regard the cost of adopting ABC too high	8
Other reasons	16
	100

It seems that traditional approaches to product costing have become ingrained in the practices of many businesses. As a result, there is little enthusiasm for change.

Source: Quinn, M., Elafi, O. and Mulgrew, M. (2017) Reasons for not changing to activity-based costing: a survey of Irish firms, *PSU Research Review*, vol, 1, no. 1, pp. 63–70, https://doi.org/10.1108/PRR-12-2016-0017.

MANAGING COSTS OVER THE PRODUCT LIFE CYCLE

In the remainder of this chapter, we shall take a look at further methods that can be used to manage costs in a highly competitive environment. We begin by examining methods that focus on managing costs over the life cycle of a product.

Total life-cycle costing

Total life-cycle costing draws management's attention to the fact that it is not only during the production phase that costs are incurred. Costs begin to accumulate at an earlier point and continue to accumulate after production. Total life-cycle costing is concerned with tracking and reporting all costs relating to a product from the beginning to the end of its life – which could be for a period of 20 years or more. If the revenues generated over the life cycle of the product are also tracked, its profitability can be assessed. This represents a radical departure from traditional management accounting approaches, which are normally concerned with assessing performance over periods of one year or less.

Total life-cycle costing starts from the premise that the life cycle of a product or service has three phases. These are:

1. *The pre-production phase*. This is the period that precedes production of the product or service. During this phase, research and development – both of the product or service and of the market – is conducted. The product or service is designed and so is the means of production. The phase culminates with setting up the necessary production facilities and with advertising and promotion.
2. *The production phase*. During this phase the product is made and sold or the service is provided to customers. This is the phase where traditional absorption costing or ABC usually makes its biggest contribution.
3. *The post-production phase*. During this phase, costs may be incurred to correct faults that arose with products or services sold (after-sales service). Since these costs may start to be incurred before the last product or service is sold, this phase will typically overlap with the production phase. During this phase, costs may also be incurred as a result of closing production at the end of the product's or service's life. Where the risk of environmental damage must be eliminated, these costs can be extremely high.

Activity 5.7

Can you think of two examples where environmental damage, or the risk of it, may have to be dealt with when the production process ends?

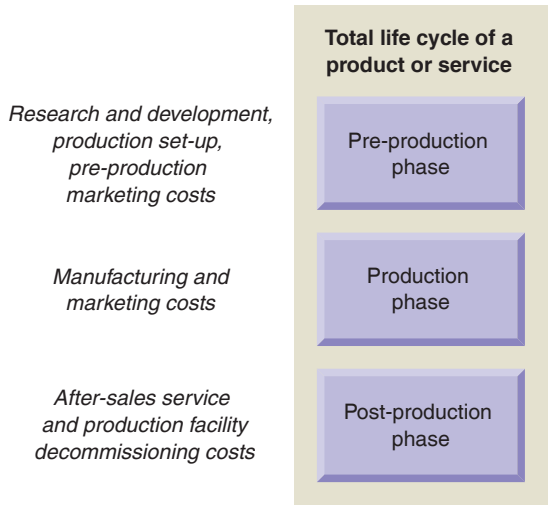
Examples include the costs of decommissioning:

- an oil rig;
- a nuclear power station;
- a quarry; and
- a coal mine.

You may have thought of others.

The total life cycle of a product or service is shown in Figure 5.5.

For some businesses, particularly those engaged in an advanced manufacturing environment, a very high proportion (perhaps as much as 80 per cent) of the total costs incurred over the life of a particular product are either incurred, or committed, at the pre-production phase. Take the example of a car manufacturer. When designing, developing and setting up production of a new model, a significant proportion of the total life-cycle costs are incurred. In addition, a commitment to incur costs during the production phase is made. This is because the design will incorporate features that lead to particular manufacturing costs. Once the design of the



From the producer's viewpoint, the life of a product can be seen as having three distinct phases. During the first, the product is developed and everything is prepared so that production and marketing can start. Next comes production and sales. Lastly, dealing with post-production activities is undertaken.

Figure 5.5 The total life cycle of a product or service

car has been finalised and the manufacturing plant set up, it may be too late to 'design out' a costly feature without incurring another large cost. Decisions made at the pre-production phase can also lead to a commitment to incur costs at the post-production phase. These decisions are, therefore, the most critical as they have the potential for huge cost savings at later points in time.

Activity 5.8

Can you provide an example of a decision made at the pre-production phase of a new car model that will result in costs being incurred after the manufacture of the product?

After-sales service costs may be incurred as a result of some design fault. Once the manufacturing facilities have been established, it may not be economic to revise the design but merely to deal with the problem through after-sales service procedures.

Where the manufacturing plant or production facilities are no longer needed when production ceases there may be decommissioning costs.

To gain competitive advantage, manufacturers may also try to reduce the total life-cycle costs of owning its products. Take, for example, an airplane manufacturer. The total cost of ownership for a passenger airline over its life can be extremely high. Costs include, maintenance, fuel and lost revenues when the airplane is out of service. Steps to reduce these costs for customers need to be taken at the pre-production phase. This can be done through the development of new materials, technology, processes and so on.

Real World 5.4 shows how the total life-cycle costs of ownership influences airline businesses' decisions on how many types of airplanes to operate, whether to buy them new and for how long to keep them.