

Activity-Based Costing

Bookkeepers dealing with management accounting are faced with a whole new language which surrounds costing and managerial finance methods and techniques. Terms such as cost and value management; cost reduction, value analysis, quality assurance processes and activity based costing all add to the bookkeepers' financial vocabulary.

Traditional pricing method has been based upon absorption costing principles and the treatment of overhead usually followed a set procedure. Cost centres are identified and overhead recovery rates are established usually based on direct labour hours or machine hours and then overhead is absorbed to products or services rendered.

Such techniques may be used successfully where there is a limited product range and predetermined rates are well planned on achievable production volumes.

Case Study

Hockeystrike is an SME which manufactures high quality hockey sticks, in Whitby North Yorks. For a number of years the bookkeepers has dealt with the recovery of overhead in a traditional manner following the procedure outlined earlier.

The business has three major producing cost centres; Machining, Finishing and Packing.

The process of allocation and apportionment for period end June 2009 had been completed and the predetermined figures were:

Cost Centre	Machining	Finishing	Packing
Overhead	£80,000	£35,000	£18,000
Machine hours	12,000	6,500	
Direct Labour hours			3,300
Overhead recovery rates per machine hour or labour hour	£6.67	£5.38	£5.45

A new product "supreme" is estimated to take the following standard hours to produce per unit:

Machining	3.50	
Finishing	1.60	
Packing	0.30	
	<u>5.40</u>	standard hours

The bookkeeper and the production manager agree the following predetermined standard costs per unit:

Direct Material	£17.50
Direct Labour:	
(all direct workers are paid £8 per hour)	

Thus, the production cost of one unit based on traditional method would be:

Machining	3.50	hours	
Finishing	1.60	hours	
Packing	0.30	hours	
	5.40	hours @ £8 / hr =	£43.20

	£
Direct material	17.50
Direct labour	43.20
Prime cost	<u>60.70</u>

Production overhead:

Machining	3.50	hrs	@	£6.67	23.35
Finishing	1.60	hrs	@	£5.38	8.61
Packing	0.30	hrs	@	£5.45	1.64
Production cost					<u>£94.30</u>

However, in the more sophisticated business with flexible and rapidly changing product ranges, traditional techniques have proved in certain cases to be less than adequate.

Activity Based Costing or ABC offers a workable and more effective insight into overhead accounting.

A definition of ABC taken from CIMA Terminology of Financial and Management Accounting, reads: "Cost attribution to cost units on the basis of benefits received from indirect activities – for example: ordering, setting up and assuring quality".

Writers such as Bromwich and Bhimani have for example, introduced the term “activity-based accounting” and define this as, “an examination of activities across the entire chain of value adding organisational processes underlying causes or drivers of cost and profit”. Such a mechanism forces managers to justify the purpose of all activities within an organisation.

Writers suggest that ABC was first used in the US in the early 1960s. The early US experience centred on the allocation of selling and distribution cost.

Most texts agree that Cooper and Kaplan brought the ABC technique to the fore; and have shaped the framework and influenced its use by practitioners.

Research suggests that particularly in the UK, ABC is not widely used. Some management have very little knowledge of the technique and others feel it is far too “expensive an exercise” to implement. As they perceive the cost to outweigh the ‘value added’ ie the benefit from the system.

Some analysis of NHS Trusts found that the technique is being used in a number of functions.

ABC, as with other techniques, has its own terminology.

Terms such as ‘Activity’, ‘Cost Driver’, ‘Cost Pool’, and ‘Cost Driver Rate’ all have particular meaning.

An activity is defined as “a value adding process which consumes resources”. For example in the NHS the process of X-Ray is an activity.

A cost driver is “an activity or factor which generates cost”, for example, in the NHS a cost driver could be the number of X-Rays taken.

A cost pool is the “pooling of overhead cost which relates to a specific activity”.

For example, the overheads associated with the inspection process in quality assurance would together form a “cost pool”.

Finally a cost driver rate is the product of dividing the cost pool for the activity by the cost driver volume – this, for example, could be the total of the cost pool for inspection divided by the number of inspections planned.

The application of ABC involves a set procedure:

- Accounting for and collection of overhead via control accounts.
- Allocation of overheads to form cost pools associated with ‘value adding’ activities.
- Identification of cost drivers and cost driver volume.
- Determination of cost driver rates ie pool / driver volume.
- Recovery and charging of overhead to product / service based upon the demand for the activity.

The following case example illustrates the procedure and use of the terminology and method described earlier.

Continuing with the Hockeystrike Case Study, the bookkeeper and the production manager have recently analysed its value added processes and identified various activities, cost drivers within those activities and current volumes across the producing unit as a whole; and decide to apply ABC method.

Budget Plan Quarter End June 2009

Activity	Cost Pool £	Cost Driver Volume
1 Process set up	52,500	100 set ups
2 Material procurement	9,500	50 purchase orders
3 Maintenance	11,000	10 standard maintenance plans
4 Material handling	21,500	2,000 material movements
5 Quality control	21,000	250 inspections
6 Order processing	17,500	300 customers
	<u>133,000</u>	

The cost pool driver rates are determined as follows:

1	£52,500 / 100	=	£525 per set up
2	£9,500 / 50	=	£190 per purchase order
3	£11,000 / 10	=	£1,100 per planned maintenance cycle
4	£21,500 / 2,000	=	£10.75 per movement
5	£21,000 / 250	=	£84 per inspection
6	£7,500 / 300	=	£25 per customer

The business has a number of products, one of which is the new product 'supreme'. In the budget period ended June 2009 it plans to produce 500 "supreme sticks". To achieve this level of output it will require the following activity demand:

- 5 set ups
- 4 purchase orders
- 2 standard maintenance plans
- 100 material movements
- 70 inspections
- 8 sales customers

Using ABC technique we find:

			£
Set up	£525 x 5	=	2,625
Material procurement	£190 x 4	=	760
Maintenance	£1,100 x 2	=	2,200
Material handling	£10.75 x 100	=	1,075
Quality control	£84 x 70	=	5,880
Order processing	£25 x 8	=	200
			<u>£12,740</u>

Thus, overhead cost per unit = £12,740 / 500 = £25.48

Here we can see that when associated with cost pools and identified to the activities which drive cost, shows an overhead unit cost of £25.48 compared with £33.60 under traditional method.

Production cost of one unit of output using ABC as the basis of recovering the overhead shows:

	£	
Prime cost as above	60.70	(see earlier case study)
Production overhead	<u>25.48</u>	
Production cost	<u>£86.18</u>	

To compare and contrast the effect of both methods of overhead recovery on the total product range, Hockeystrike would need to examine fully the cost driver volume across its “value adding activities” and their influence on budgeted product mix.

Some writers would argue that compared with traditional approach to overhead allocation, apportionment and absorption, ABC generates improved or more accurate product costs – however, recent research suggests that by improving the quality of cost and management accounting information, it also provides managers with a wider understanding of the economies of production and those resource consuming activities which when linked to labour and capital provide the wealth we know as “value added”.

It is hoped that the reader now has a better understanding of the ABC technique and may see the relevance and opportunity of its application to their own business environment.