Management Accounting: Costing and Budgeting

Level 5: Unit 9

Lecturer: Matthew Smith-Barrett

Unit Content: (Syllabus)

Level 5: Unit 9

On successful completion of this unit a leaner will:

- Be able to analyse cost information within a business
- Be able to propose methods to reduce costs and enhance value within a business
- Be able to prepare forecasts and budgets for a business
- Be able to monitor performance against budgets within a business

Learning Outcome 1:

Level 5: Unit 9

Upon completion of this Learning Outcome, students should:

- Be able to analyse cost information within a business

To realize the above objective the leaner should be able to:

1.1 classify different types of cost

1.2 use different costing methods

1.3 calculate costs using appropriate techniques

1.4 analyse cost data using appropriate techniques

Week 3 - Assessment Criteria 1.3:

Level 5: Unit 9

Assessment Criteria 1.3:

Upon completion of this lesson, students will be able to:

- Calculate cost using appropriate techniques

Week 2 – Cost Measurements

Level 5: Unit 9

Management Accounting: Costing and Budgeting

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Recap: Costing methods

L.O. 1: A.C. 1.3

There are various methods that can be used to determine the cost of a unit of production. This use also depends on the type of operation(s) that the company engages in. The most popular methods are:

1. **Job costing,**
2. **Batch costing,**
3. **Process costing,**
4. **Contract costing; and**
5. **Service Costing.**

Cost Measurements

L.O. 1:
A.C. 1.3

To accumulate costs for their various uses, there is a need for systems that gather data, refine them and put them in the proper format. A variety of methods are available today for systematizing data. In some industries, a specific system is almost mandatory; in others, several other methods are available to choose from.

Cost Measurements

L.O. 1:
A.C. 1.3

In order to measure costs in an organization, companies may embrace any of the following options most suitable to them:

- **Full (Absorption) Costing**
- **Marginal Costing**
- **Overhead Absorption**
- **Activity Based Costing (ABC)**
- **Stock Valuation**
- **Cost Plus Pricing**
- **Market Pricing**

Absorption Costing

L.O. 1:
A.C. 1.3

Absorption costing technique is also termed as Traditional or Full Cost Method. Under this method, the cost of a product is determined, after considering both fixed and variable costs. The variable costs, such as direct materials, direct labour, etc. are, directly, charged to the products. The fixed costs are apportioned on a suitable basis over different products, manufactured during a period.

Absorption Costing

L.O. 1: A.C. 1.3

	$	$
Sales		X
Less: Cost of Sales:		
Opening Inventory	X	
Production Costs:		
Variable costs	X	
Fixed overhead absorbed	X	
	X	
Less: closing inventory	(x)	
	x	
Fixed overhead under/(over) absorbed	x/(x)	
		(x)
GROSS PROFIT		**X**
Less: Selling, administration etc. costs (non production)		(x)
NET PROFIT		**X**

Marginal Costing

L.O. 1:
A.C. 1.3

Marginal costing is the accounting system in which variable costs are charged to cost units and fixed costs of the period are written off in full against the aggregate contribution.

Note that variable costs are those which change as output changes - these are treated under marginal costing as costs of the product. Fixed costs, in this system, are treated as costs of the period.

Marginal Costing

L.O. 1: A.C. 1.3

	$	$
Sales		x
Less: Variable cost of sales:		
Opening inventory	X	
Production costs:		
- Variable	X	
	X	
Less: closing inventory	(x)	
		(x)
		x
Less: Variable selling, distribution and administrative costs		(x)
Contribution		X
Less fixed costs:		
Production	x	
Selling and distribution	x	
Adminisatrion	x	
		(x)
Net Profit		**X**

Absorption Overhead Costing

L.O. 1:
A.C. 1.3

This method of Cost Measurement sees the use of the best assumption of how overhead costs should be allocated to a given product. In the traditional costing system, the rates are likely to be based on direct machine hours or direct labour hours.

This process is more refined in activity based costing (ABC), but the intention is still the same: finding an equitable way of sharing the overheads to the products using a method that relates the absorption base to the incidence of the overheads.

Absorption Overhead Costing

L.O. 1:
A.C. 1.3

Absorption Costing Formula:

$$\text{Overhead Absorption Rate} = \frac{\text{Budgeted Overhead}}{\text{Budgeted Base}}$$

Activity Based Costing - ABC

L.O. 1:
A.C. 1.3

- Activity based costing is a further development on the traditional full-costing approach, which takes much more enquiring and much less anticipating attitude towards indirect costs (overheads).
- Instead of looking at the overheads of departments, it records the costs of similar activities together in cost pools and then absorbs these costs by using the activity that drives the cost as the absorption rate.

Activity Based Costing - ABC

L.O. 1:
A.C. 1.3

- Activity based costing formula:

$$ABC = \frac{\text{Total Cost}}{\text{Cost driver}}$$

Activity Based Costing - ABC

L.O. 1: A.C. 1.3

Activity-based costing (ABC) aims to overcome the kind of problem just described by tracing the cost of all support activities directly to particular products or services. For a manufacturing business, these support activities may include materials ordering, materials handling, storage, inspection and so on. The cost of the support activities makes up the total overheads cost. The outcome of this tracing exercise is to provide a more realistic, and more finely measured, account of the overhead cost element for a particular product or service.

Stock Valuation

L.O. 1: A.C. 1.3

Stock/Inventory valuation becomes difficult when finding out the cost price of inventory.

This is so as it becomes difficult when quantities of a particular inventory item are continually being bought - often at different prices – and then sold.

Some companies have inventory in a number of different forms, e.g.:

A manufacturer may have :-

- raw materials,
- work-in-progress; and
- finished goods.

Stock Valuation

L.O. 1: A.C. 1.3

For business compliant with International Accounting Standards (IAS) – IAS 1, Inventories allows companies to use any of the following methods:

1. First in First out (FIFO) method
2. Average Cost Method (AVCO)

There was previously the LIFO (Last in First Out Method but that isn't employed under IAS rules).

Stock Valuation

L.O. 1:
A.C. 1.3

AVCO Formula:

$$\text{Weighted average cost} = \frac{\text{total cost of goods in inventory}}{\text{number of items in inventor}}$$

- The weighted average cost is then used to value goods sold. A new weighted average cost must be calculated each time that further inventories are bought during the year.

Stock Valuation

L.O. 1:
A.C. 1.3

Standard costing:

This is defined by the Chartered Institute of Management Accounting (UK, 2012) as a “control technique that reports variances by comparing actual costs to pre-set standards so facilitating action through management by exception”

Cost Plus Pricing

L.O. 1: A.C. 1.3

Cost plus Pricing is an approach to pricing output that is based on full cost plus a percentage profit loading.

- Cost-plus pricing means that prices are based on calculations/assessments of how much it costs to produce the good or service, and includes a margin for profit. 'Cost' in this context might mean relevant cost, variable cost, direct cost or full cost. Usually cost-plus prices are based on full costs. These full costs might be derived using a traditional or an ABC approach.

Cost Plus Pricing

L.O. 1: A.C. 1.3

In determining the proper markup, a company must consider competitive and market conditions.

- Cost-plus formula is expressed as:

COST + (MARK UP X COST)= TARGET SELLING PRICE

Market Pricing

L.O. 1:
A.C. 1.3

This is a pricing model that is based on the theory of demand and supply.

The current price at which an asset or service can be bought or sold. Economic theory contends that the market price converges at a point where the forces of supply and demand meet. Shocks to either the supply side and/or demand side can cause the market price for a good or service to be re-evaluated.

Target Costing

L.O. 1:
A.C. 1.3

Target costing is very much a marketing approach to costing. The Chartered Institute of Marketing defines marketing as:

'The management process responsible for identifying, anticipating and satisfying customer requirements profitably.'

Target costing is primarily a technique to strategically manage a company's future profits. It achieves this objective by determining the life-cycle cost at which a company must produce a proposed product with specified functionality and quality if the product is to be profitable at its anticipated selling price.

In Class Example (page 1)

L.O. 1: A.C. 1.3

Comma Ltd manufactures two types of Sprizzer – Standard and Deluxe. Each product requires the incorporation of a difficult-to-handle special part (one of them for a Standard and four for a Deluxe). Both of these products are made in batches (large batches for Standards and small ones for Deluxes). Each new batch requires that the production facilities are 'set up'. Details of the two products are:

	Standard	*Deluxe*
Annual production and sales – units	12,000	12,000
Sales price per unit	$65	$87
Batch size – units	1,000	50
Direct labour time per unit – hours	2	2 ½
Direct labour rate per hour	$8	$8
Direct material cost per unit	$22	$32
Number of special parts per unit	1	4
Number of set-ups per batch	1	3
Number of separate material issues from stores per batch	1	1
Number of sales invoices issued per year	50	240

In Class Example (page 2)

L.O. 1: A.C. 1.3

In recent months, Comma Ltd has been trying to persuade customers who buy the Standard to purchase the Deluxe instead. An analysis of overhead costs for Comma Ltd has provided the following information.

Overhead cost analysis	$	*Cost driver*
Set-up cost	73,200	Number of set-ups
Special part handling cost	60,000	Number of special parts
Customer invoicing cost	29,000	Number of invoices
Material handling cost	63,000	Number of batches
Other overheads	108,000	Labour hours

Required:

(a) Calculate the profit per unit and the return on sales for Standard and Deluxe Sprizzers using

(i) the traditional direct-labour-hour based absorption of overheads;

(ii) activity-based costing methods.

(b) Comment on the managerial implications for Comma Ltd of the results in (a) above.

Solution

L.O. 1: A.C. 1.3

Using the traditional full (absorption) costing approach that we considered in Chapter 4, the overheads are added together and an overheads recovery rate deduced as follows:

Overheads	$
Set-up cost	73,200
Special part handling cost	60,000
Customer invoicing cost	29,000
Material handling cost	63,000
Other overheads	108,000
	333,200

Solution

L.O. 1: A.C. 1.3

$$\text{Overhead recovery rate} = \frac{\text{Total overheads}}{\text{Number of labour hours}}$$

$$= \frac{\$333{,}200}{[(12{,}000 \times 2) + (12{,}000 \times 21/2)]}$$

$$= \frac{\$333{,}200}{54{,}000}$$

$$= £6.17 \text{ per hour}$$

The total cost per unit of each type of Sprizzer is calculated by adding the direct cost to the overheads cost per unit. The overheads cost per unit is calculated by multiplying the number of direct labour hours spent on the product (2 hours for each Standard and 21/2 hours for each Deluxe) by the overheads recovery rate calculated above. Hence:

	Standard	*Deluxe*
Direct cost	$	$
Labour	16.00	20.00
Material	22.00	32.00
Indirect cost		
Overheads (£6.17 per hour)	12.34	15.43
Total cost per unit	50.34	67.43

Solution

L.O. 1: A.C. 1.3

Using the ABC costing approach, the activity cost driver rates will be calculated as follows:

Overhead cost pool	*Driver*	*(a) Standard driver volume*	*(b) Deluxe driver volume*	*(c) Total driver volume (a + b)*	*(d) Costs £*	*(e) Driver rate £ (d/c)*
Set-up	Set-ups per batch	12	720	732	73,200	100
Special part	Special parts per unit	12,000	48,000	60,000	60,000	1
Customer invoices	Invoices per year	50	240	290	29,000	100
Material handling	Number of batches	12	240	252	63,000	250
Other overheads	Labour hours	24,000	30,000	54,000	108,000	2

Solution

L.O. 1: A.C. 1.3

The activity-based costs are derived as follows:

Overhead cost pool	*(f) Total costs Standard (a × e)* £	*(g) Total costs Deluxe (b × e)* £	*Unit costs Standard (f/12,000)* £	*Unit costs Deluxe (g/12,000)* £
Set-up	1,200	72,000	0.10	6.00
Special part	12,000	48,000	1.00	4.00
Customer invoices	5,000	24,000	0.42	2.00
Material handling	3,000	60,000	0.25	5.00
Other overheads	48,000	60,000	4.00	5.00
Total overheads			5.77	22.00

The total cost per unit is calculated as follows:

	Standard £ *per unit*	*Deluxe* £ *per unit*
Direct cost:		
Labour	16.00	20.00
Material	22.00	32.00
Indirect cost		
See above	5.77	22.00
Total cost per unit	43.77	74.00

Solution

L.O. 1: A.C. 1.3

The return on sales is calculated as follows:

	Standard	*Deluxe*
	£ per unit	*£ per unit*
Selling price	65.00	87.00
Total cost (see above)	43.77	74.00
Profit	21.23	13.00
Return on sales [(profit/sales) × 100%]	32.67%	14.94%

The figures show that under the traditional approach the returns on sales appear broadly equal. However, the ABC approach shows that the Standard product is far more profitable. Hence, the business should reconsider its policy of trying to persuade customers to switch to the Deluxe product.

Conclusion

L.O. 1: A.C. 1.2

The Costing Technique employed by any company may greatly affect its ability to fully recover its costs and indeed gain a profit.

Once a company identifies the appropriate technique to use, it should always re-evaluate that technique periodically for its effectiveness based on market conditions.

Knowing the companies full spectrum of direct and indirect costs and how to allocate the indirect costs is also of key importance.

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L.O. 1: A.C. 1.2

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