Module 1

Introduction

This module introduces the purpose of management accounting, the goals of the organisation and the role of management accounting in good corporate governance. In addition the module identifies cost behaviour and how this is applied to absorption and variable costing and finally there is an introduction to the principles of activity-based costing (ABC).

Upon completion of this module students will be able to:

Outcomes

- *Understand* the role of management accounting and how this fits with the goals of the organisation.
- *Explain* how management accounting can add to corporate governance.
- *Identify* how costs behave.
- *Explain* the difference between absorption and variable costing.
- *Discuss* the principles of activity-based costing.
- *Explain* the difference between activity-based costing and absorption and variable costing.

Unit 1

Managing the organisation

Learning outcomes

Outcomes

Upon completion of this unit students will be able to:

- *Explain* the difference between management accounting and financial accounting.
- *Describe* the purpose of management accounting.
- *Identify* the different functions of management.
- *Explain* the role of corporate governance in managing an organisation.
- *Identify* the different parties involved in the governance of an organisation.
- *Describe* and explain corporate governance principles.
- *Explain* the role of ethics in business.

Activity 1.1

Activity

For the organisation that you are currently involved with:

1. List all of the areas where accounting information is used to help with decision-making.
2. Describe how the organisation is governed.
3. Does your organisation have a code of ethics? If so, how does the organisation ensure compliance with the code?
4. Are there any operational areas that may lead to an ethical dilemma? If so, how does the organisation deal with this type of situation?

Activity 1.1 Feedback

Answers will depend on the organisation the student chooses.

Unit 2

Costing systems

Learning outcomes

Outcomes

Upon completion of this unit students will be able to:

- *Explain* the different classifications of cost.
- *Describe* how costs behave.
- *Explain* the principles of absorption costing.
- *Explain* the principles of variable costing.
- *Identify* the differences between absorption and variable costing.

Activity 1.2

Activity

1. Hawkins Electronics Limited manufactures a portable radio designed for mounting on the wall of the bathroom. The following list represents some of the different types of costs incurred in the manufacture of these radios. Classify each of the items as product (inventoriable) cost or period (non-inventoriable) costs for the purpose of preparing external financial statements.
    a. The plant manager's salary.
    b. The cost of heating the plant.
    c. The cost of heating executive offices.
    d. The cost of printed circuit boards used in the radios.
    e. Salaries and commissions of company salespersons.
    f. Depreciation on office equipment used in the executive offices.
    g. Depreciation on production equipment used in the plant.
    h. Wages of janitorial personnel who clean the plant.
    i. The cost of insurance on the plant building.
    j. The cost of electricity to light the plant.
    k. The cost of electricity to power plant equipment.
    l. The cost of maintaining and repairing equipment in the plant.
    m. The cost of printing promotional materials for trade shows.
    n. The cost of solder used in assembling the radios.
    o. The cost of telephone service for the executive offices.

2. Lee Company, which has only one product, has provided the following data concerning its most recent month of operations.

    - Selling price: $95
    - Units in beginning inventory 100
    - Units produced 6,200
    - Units sold 5,900
    - Units in ending inventory 400

    Variable costs per unit:

    - Direct materials $42
    - Direct labour $28
    - Variable manufacturing overhead $1
    - Variable selling and administrative $5

Fixed costs:

- Fixed manufacturing overhead $62,000
- Fixed selling and administrative $35,400

The company produces the same number of units every month, although the sales in units vary from month to month. The company's variable costs per unit and total fixed costs have been constant from month to month.

Required:

a. What is the unit product cost for the month under variable costing?
b. What is the unit product cost for the month under absorption costing?
c. Prepare an income statement for the month using the contribution format and the variable costing method.
d. Prepare an income statement for the month using the absorption costing method.
e. Reconcile the variable costing and absorption costing net incomes for the month.

Activity 1.2 Feedback

1. Hawkins Electronic. Classify each item as product (inventoriable) cost or period (non-inventoriable) costs for the purpose of preparing external financial statements.

a. Product
b. Prodct
c. Period
d. Product
e. Period
f. Period
g. Product
h. Product
i. Product
j. Product
k. Product
l. Product
m. Period
n. Product
o. Period

2. Lee Company

Answers for (a.) and (b.), unit product costs:

Variable costing:

• Direct materials	$42
• Direct labour	$28
• Variable manufacturing overhead	$1
• Unit product cost	$71

Absorption costing:

• Direct materials	$42
• Direct labour	$28
• Variable manufacturing overhead	$1
• Fixed manufacturing overhead	$10
• Unit product cost	$81

Answers for (c.) & and (d.), income statements:

Variable costing income statement:

Sales	$560,500
Less variable expenses	
Variable cost of goods sold:	
Beginning inventory	$7,100
Add variable manufacturing costs	$440,200
Goods available for sale	$447,300
Less ending inventory	$28,400
Variable cost of goods sold	$418,900
Variable selling and administrative	$29,500
	$448,400
Contribution margin	$112,100
Less fixed expenses:	
Fixed manufacturing overhead	$62,000
Fixed selling and administrative	$35,400
	$97,400
Net income	$14,700

Absorption costing income statement:	
Sales	$560,500
Cost of goods sold:	
Beginning inventory	$8,100
Add cost of goods manufactured	$502,200
Goods available for sale	$510,300
Less ending inventory	$32,400
	$477,900
Gross margin	$82,600
Less selling and administrative expenses:	
Variable selling and administrative	$29,500
Fixed selling and administrative	$35,400
	$64,900
Net income	$17,700

Answer for (e.), reconciliation:

Variable costing net income	$14,700
Add fixed manufacturing overhead costs deferred in inventory under absorption costing	$3,000
Deduct fixed manufacturing overhead costs released from inventory under absorption costing	$0
Absorption costing net income	$17,700

Unit 3

Activity-based costing

Learning outcomes

Outcomes

Upon completion of this unit students will be able to:

- *Describe* a typical ABC system.
- *Explain* the components of an ABC system.
- *Identify* activities and cost drivers.
- *Explain* the advantages and disadvantages of ABC.
- *Explain* the difference between traditional costing systems and ABC.

Activity 1.3

Activity

1. Explain how ABC differs from traditional costing methods.
2. DEM manufactures and sells medical equipment. DEM uses an activity-based costing system. Direct materials and direct labour costs are accumulated separately along with information concerning four manufacturing overhead cost drivers (activities). Assume that the direct labour rate is $20 an hour and that there were no beginning inventories. The following information was available for 2010, based on an expected production level of 400,000 units for the year:

Activity (cost driver)	Budgeted Cost for 2010	Cost driver used as allocation base	Cost allocation rate
	$		$
Materials handling	3,600,000	Number of parts used	$1.50 per part
Milling and grinding	8,800,000	Number of machine hours	$11.00 per machine hour
Assembly and inspection	6,000,000	Direct labour hours worked	$5.00 per labour hour
Testing	1,200,000	Number of units tested	$3.00 per unit

The following production, costs and activities occurred during the month of September:

Units produced/tested	Direct materials costs	Number of parts used	Machine hours	Direct labour hours
50,000	$3,500,000	275,000	95,000	160,000

Required:

a. Calculate the total manufacturing costs and the cost per unit produced and tested during September using the ABC approach.

b. Explain the advantages of the ABC approach relative to using a single predetermined overhead application rate based on direct labour hours.

3. Williams Industries manufactures and sells tables. The company uses an activity-based costing system. Direct materials and direct labour costs are accumulated separately along with information concerning three manufacturing overhead cost drivers (activities). Assume that the direct labour rate is $15 an hour and that there were no beginning inventories. The following information was available for 2010, based on an expected production level of 50,000 units for the year:

Activity (cost driver)	Budgeted Cost for 2010	Cost driver used as allocation base	Cost allocation rate
	$		$
Materials handling	250,000	Number of parts used	$0.20 per part
Cutting and lathe work	1,750,000	Number of parts used	$1.40 per part
Assembly and inspection	4,000,000	Direct labour hours	$20.00 per labour hour

The following production, costs and activities occurred during the month of July:

Units produced/tested	Direct materials costs	Number of parts used	Direct labour hours
3,200	$107,200	70,400	13,120

Required:

a. Calculate the total manufacturing costs and the cost per unit produced and tested during July using the activity-based costing approach.

b. Assume, instead, that Williams Industries applies manufacturing overhead on a direct labour hours basis (rather than using the activity-based costing system described above). Calculate the total manufacturing cost and the cost per unit of the tables produced during July (hint – you will need to calculate the predetermined overhead application rate using the total budgeted overhead cost for 2010).

c. Compare the per-unit cost figures calculated in a) and b). Which approach do you think provides better information for manufacturing managers? Explain your answer.

Activity 1.3 Feedback

1. Explain how ABC differs from traditional costing methods.
    - Both ABC and traditional costing methods allocate overhead to cost objects, but the methods of doing this differ.
    - ABC allocates overhead to a cost object (product, service, customer, department and so on) by tracing the cost-causing activities of an organisation directly to a cost object. This results in activities (and their associated costs) being allocated into cost pools and then each cost pool is traced to a cost object.
    - Some complex ABC systems can have several hundred activities and multiple cost pools. The result is a more accurate reflection of the cost object's consumption of cost-causing activities.
    - Traditional overhead allocation models also trace overhead to a cost object, however they typically use a single overhead driver (such as direct labour hours, or machine hours). The result is often a distorted amount of overhead applied to the

cost object. This can be a significant problem in firms where competition is high and/or overhead is a significant proportion of the total cost.

2. DEM

   a. Calculate the total manufacturing costs and the cost per unit produced and tested during September.

	Activity	**Cost driver used as allocation base**	**Cost allocation rate**		**Allocated cost**
			$		
	Materials handling	Number of parts used	1.50 per part	275 000 parts	$412 500
	Milling and grinding	Number of machine hours	11.00 per hour	95 000 MH	$1 045 000
	Assembly and inspection	Direct labour hours worked	5.00 per hour	160 000 DLH	$800 000
	Testing	Number of units tested	3.00 per unit	50 000 units	$150 000
					$2 407 500

Total cost:

Direct material	$3,500,000
Direct labour:	
160,000 x $20	3,200,000
Manufacturing o/h	2,407,500
Total cost	$9,107,500
Units produced	50,000
Cost per unit	$182.15

   b. Explain the advantages of the ABC approach relative to using a single predetermined overhead application rate based on direct labour hours.

      Multiple allocation rates, as used in ABC costing, overcome the problem of unitising fixed costs since in smaller cost pools an appropriate variable activity can be found. The cost allocations are closer to economic reality and so are more accurate. This is likely to result in more competitive behaviour and better decision-making.

3. Williams Industries

   a. Calculate the total manufacturing costs and the cost per unit produced and tested during July using the activity-based costing approach.

	Activity (cost driver)	**Cost driver used as allocation base**	**Overhead Cost allocation rate**		**Allocated cost**
			$		**$**
	Materials handling	Number of parts used	0.20 per part	70 400 parts	14 080
	Cutting and lathe work	Number of parts used	1.40 per part	70 400 parts	98 560
	Assembly and inspection	Direct labour hours	20.00 per hour	13 120 DLH	262 400
					$375 040

Total cost:

Direct material	$107,200
Direct labour (13,120 x $15)	$196,800
Manufacturing overhead	$375,040
Total cost of 50,000 tables	$679,040
Cost per table	$13.58

b. Assume instead that Williams Industries applies manufacturing overhead on a direct labour hours basis (rather than using the activity-based costing system described above). Calculate the total manufacturing cost and the cost per unit of the tables produced during.

Predetermined overhead absorption rate:

Estimated overhead/DLH = $6,000,000/200,000 (hours calculated from assembly and inspection allocation = $30 per hour.

Total cost:

Direct material	$107,200
Direct labour (13,120 x $15)	$196,800
Overhead (13,120 x $30)	$393,600
Total cost of 50,000 tables	$697,600
Cost per table	$13.95

c. Compare the per-unit cost figures calculated in a) and b). Which approach do you think provides better information for manufacturing managers? Explain your answer.

In this situation, the result is not that significant (only 2.7 per cent between the ABC cost per unit of $13.58 and the absorption costing rate of $13.95) but in many other instances, this is not the case. A cost benefit analysis is always conducted before installing a new system. One of the risks to be assessed is the consequences of making the wrong decision.