

# THE UNIVERSITY OF NEWCASTLE



## NEWCASTLE BUSINESS SCHOOL

PACC6001: Management Accounting

### Semester 1, 2017: Assignment 2

**Due Date: 04 May 2017, Thursday, 23.59 AEDT**

**Assessment Weight: 20%**

**Total Number of Questions: 5**

**Task:** This assessment is an individual task in which the student is required to answer all of the problem questions included in this paper.

**Total Marks:** 100 marks (20% of total assessment).

**Reading Materials:** Weeks 1-8 Lecture Notes/Handout and Workshop Materials (Available on Blackboard).

**Submission:** Hard copy submission in the class and Online submission through Blackboard.

### **Assessment Criteria:**

This assigned task will generally be assessed in terms of the following criteria:

- ✓ Problem-solving and the communication of the solutions of the problem. Communications include readability, grammar, spelling, completeness and presentation of the solution.
- ✓ Analysis of the problem and recommendation where necessary. Further, emphasise will be given on the accuracy of the content and coverage of the relevant issues for marking.

### **Submission Guidelines:**

- ✓ Assignments must be submitted by the due date.
- ✓ Students should include the cover page designed by the University of Newcastle with the assignment.
- ✓ All assignments must be submitted online and hardcopy in the class. Submissions via email will not be accepted.
- ✓ Assignment must be typed, and submission file should be in word.
- ✓ Each page of the assignment should be numbered.
- ✓ Whenever necessary assignment must be properly referenced and referencing should follow American Psychological Association (APA) 6<sup>th</sup> edition style.

### **Extensions of Submission Date:**

- ✓ All requests for extensions must be submitted through adverse circumstances application before the assignment submission due date.

### **Late Submission:**

- ✓ The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assignment item for each day or part day that the assessment item is late.
- ✓ Note that this applies equally to week and weekend days.

**Question 1 – Process Costing Systems****[20 Marks]**

Paxer Inc uses a process costing system. A unit of product passes through three departments—Moulding, Assembly and Finishing—before it is completed. The following production took place in the Finishing Department during August:

	<b>Units</b>
Work in process inventory, 1 August	1 400
Units transferred in from Assembly Department	14 000
Units transferred out to finished goods inventory	11 900

Raw material is added at the beginning of processing in the Finishing Department. The work in process inventory was 70 per cent complete as to conversion on 1 August, and 40 per cent complete as to conversion on 31 August.

Paxer Inc uses the weighted average method of process costing. The equivalent units and costs per equivalent unit of production for each cost element for the Finishing Department are shown as follows:

	<u><b>Equivalent units</b></u>	<u><b>Cost per equivalent unit</b></u>
Transferred-in costs	15 400	\$5.00
Raw material	15 400	1.00
Conversion cost	13 300	<u>3.00</u>
Total		\$9.00

**Required:**

1. Calculate the following amounts:
  - (a) Cost of units transferred to finished goods inventory during August.
  - (b) Cost of the Finishing Department's work in process inventory on 31 August.
2. The total costs of prior departments included in the work in process inventory of the Finishing Department on 1 August amounted to \$6750. Prepare the journal entry to record the transfer of the goods from the Assembly Department to the Finishing Department during August.

## Question 2 – Accounting for Sustainability

[20 Marks]

WealthWise Insurance has recently set up an internal information system to improve social and environmental practices within the company. The company has its head office in Brisbane and offices in all capital cities and every regional city with a population of more than 50 000 people. One of the underlying principles of the company is to be socially and environmentally responsible. This principle has been in place for many years, dating back to the firm's founder, Jeannette Dai, who felt that she would like to contribute to society rather than simply maximising profits.

The company is a major contributor to charities, particularly those that focus on the homeless and the poor. It actively promotes environmental management in all of the company operations. It sponsors a program that provides scholarships to disadvantaged students to allow them to attend university, and it is proud to offer employment in the company to long-term unemployed and the poor. Each year it publishes a sustainability report that summarises its achievements across each area of performance.

Over time these activities have become a marketing strength of WealthWise. The social and environmental stance taken by the company has attracted many customers to the company. Listed on the Australian Securities Exchange in 2001, the company has also become a preferred investment of ethical and green investment funds.

The mission statement of WealthWise states that it will aim to:

- Support employees in achieving their personal and career goals.
- Act in a socially responsible way when dealing with insurance clients and the general community.
- Promote a better social and physical environment for the world.

However, the current chief executive officer, Sylvia Trott, thinks that the firm has become complacent and is resting on its past achievements. She is concerned that the firm has built up a reputation for good social and environmental practices but is not 'walking the talk'. There is some level of discontent among employees about the way that management treats staff, and this is impacting on employee satisfaction. There have also been negative reports in the media of its treatment of businesses in Phuket and Langkawi that were damaged in the December 2004 tsunami. The reports claim that the company has tried to minimise the amounts paid to these businesses by strictly applying clauses in the insurance contracts that cover earthquake damage but not flood damage.

In 2004, the company's profit rose by 15 per cent to \$173 million on an asset base of \$1235 million. This is the third consecutive year of increased profits. Earnings per share were 62 cents, and the market value was \$5.40 per share. The board is concerned that WealthWise makes a loss on its insurance business, while its investments yield a strong return and are the main reason for the increase in profitability. Its investment portfolio includes shares in BHP Billiton, Qantas, Telstra and James Hardie Industries.

The board adopts a sustainability approach to viewing its performance and uses the following key performance indicators to assess company performance:

- **Financial:**
  - ✓ Profit.
  - ✓ Gross insurance premiums.
  - ✓ Return on investment.
  
- **Economic indicators:**
  - ✓ Policy, practices and spending on local suppliers.
  - ✓ Procedures for hiring local staff.
  - ✓ Development projects primarily for public benefit.
  
- **Social indicators:**
  - ✓ Employee satisfaction ratings.
  - ✓ Percentage of women in the top three tiers of management.
  - ✓ Number of indigenous employees.
  - ✓ Customers' ethical ranking of sales staff.
  - ✓ Number of staff hired who were previously unemployed teenagers.
  
- **Environmental indicators:**
  - ✓ Tonnes of paper recycled per annum.
  - ✓ Percentage reduction in electricity usage.
  - ✓ Litres of fuel per dollar of sales.

**Required:**

1. Explain what is meant by sustainability reporting and why a publicly listed insurance company like WealthWise may adopt this approach.
2. Consider the list of key performance indicators used by WealthWise. Explain how these measures could be used to help achieve the mission.
3. Suggest alternative performance measures that could be included in the performance measurement system to assist WealthWise to achieve its mission.
4. Write a report to the chief executive officer explaining what steps she can take to encourage staff to behave in a way that supports sustainability. Specifically, explain to her how the performance measurement system could be used in a balanced way to support the achievement of the company's goals.

**Question 3 – Cost Behaviour****[20 Marks]**

Megan Supplies Ltd is a wholesaler for a large variety of plumbing supplies. The company's accountant, Hannah, has recently completed a cost study of the firm's Shipping Department in which he used the kilograms of supplies loaded or unloaded at the company's loading dock to quantify the department's activity. Washer compiled the following data.

<u>Month</u>	<u>Kilograms of supplies unloaded or loaded</u>	<u>Shipping Department costs</u>
January	3 600	\$ 23 400
February	3 200	22 600
March	2 600	22 500
April	2 000	20 400
May	4 400	22 200
June	4 800	25 100
July	4 000	24 000
August	3 600	22 800
September	5 200	24 240
October	2 200	22 100
November	2 400	22 700
December	2 800	22 700

**Required:**

1. Draw a scatter diagram of the cost data for the Shipping Department.
2. Estimate the Shipping Department's cost behaviour using the high–low method. Use an equation to express the results of this estimation method.
3. Using the equations estimated in Part 2 predict the Shipping Department's costs for a month when loads totalling 4500 kilograms are moved.
4. Prepare least squares regression analysis to estimate the variable and fixed components for the Shipping Department costs.
5. Based on your spreadsheet write the least squares regression equation for the Department's costs.
6. Using the equation from Part 5, predict the firm's Shipping Department's costs for a month when loads totalling 4500 kilograms are moved.
7. Why do these cost predictions estimated using the high–low and regression methods differ? Which method do you recommend? Explain your answer.

**Question 4 – Cost-Volume-Profit Analysis****[20 Marks]**

The Kingswood Company produces thin limestone sheets that are used for the facings on buildings. As can be seen in the contribution margin statement, last year the company had a net profit of \$157 500, based on sales of 1800 tonnes. The manufacturing capacity of the firm's facilities is 3000 tonnes per year.

**Kingswood Company Contribution Margin Statement Year  
ended 31 December**

Sales		\$900 000
Variable costs:		
Manufacturing	\$315 000	
Selling costs	<u>180 000</u>	
Total variable costs		<u>\$495 000</u>
Contribution margin		\$405 000
Fixed costs:		
Manufacturing	\$100 000	
Selling	107 500	
Administrative	<u>40 000</u>	
Total fixed costs		<u>\$247 500</u>
Net profit		\$157 500

**Required:**

1. Calculate the company's break-even volume, in tonnes, for the most recent year. (Ignore income taxes.)
2. If the sales volume is estimated to be 2100 tonnes in the next year, and if the prices and costs stay at the same levels and amounts, what net profit can management expect next year?
3. The company has an overseas customer who has offered to buy 1500 tonnes at \$450 per tonne. Assume that all the firm's costs would be at the same levels and rates as in the year just ended. What net profit would the firm earn if it took this order and rejected some business from local customers so as not to exceed production capacity?
4. Kingswood plans to market its product in a new territory. Management estimates that an advertising and promotion program costing \$61 500 per year would be needed for the next two or three years. In addition, a \$25 per tonne sales commission to the sales force in the new territory, over and above the current commission, would be required. How many tonnes would need to be sold in the new territory to maintain the firm's current net profit? Assume that sales and costs will continue as in the year just ended in the firm's established territories.
5. Management is considering replacing its labour-intensive production process with an automated production system. This would result in an increase of \$58 500 annually in fixed manufacturing costs. The variable manufacturing costs would decrease by \$25 per tonne. Calculate the new break-even volume in tonnes and in sales dollars.
6. Ignore the facts presented in requirement 5. Assume that management estimates that the selling price per tonne will decline by 10 per cent next year. Variable costs will increase by \$40 per tonne, and fixed costs will not change. What sales volume in dollars would be required to earn a net profit of \$94 500?

**Question 5 – Activity-Based Costing and Management****[20 Marks]**

Opsonin Inc manufactures three products for the pharmaceuticals industry:

- product P : annual sales, 8000 units.
- product Q : annual sales, 15 000 units.
- product R : annual sales, 4000 units.

The company uses a traditional, volume-based product costing system with manufacturing overhead applied on the basis of direct labour dollars. The product costs have been calculated as follows:

	<b>Product P</b>	<b>Product Q</b>	<b>Product R</b>
Raw material	\$35.00	\$52.50	\$17.50
Direct labour	16.00 (0.8 hr × \$20)	12.00 (0.6 hr × \$20)	8.00 (0.4 hr × \$20)
Manufacturing overhead*	<u>140.00</u> (\$16 × 875%)	<u>105.00</u> (\$12 × 875%)	<u>70.00</u> (\$8 × 875%)
Total product cost	\$191.00	\$169.50	\$95.50

\*Manufacturing overhead budget:

Machinery	\$1 225 000
Machine setup	5 250
Inspection	525 000
Material handling	875 000
Engineering	<u>344 750</u>
Total	\$2 975 000

Opsonin Inc's pricing method has been to set a budgeted selling price equal to 150 per cent of full product cost. However, only the Product Q have been selling at their budgeted price. The budgeted and actual current prices for all three products are the following:

	<b>Product P</b>	<b>Product Q</b>	<b>Product R</b>
Product cost	\$191.00	\$169.50	\$ 95.50
Budgeted price	286.50	254.25	143.25
Actual current selling price	213.00	254.25	200.00

Opsonin Inc has been forced to lower the price of product P in order to get orders. In contrast, Opsonin Inc has raised the price of product R several times, but there has been no apparent loss of sales. Opsonin Inc has been under increasing pressure to reduce the price even further on gismos. In contrast, Opsonin Inc's competitors do not seem to be interested in the market for Product R. Opsonin Inc apparently has this market to itself.

**Required:**

1. Is product P the company's least profitable product? Explain your answer.
2. Is product R a profitable product for Opsonin Ltd? Explain your answer.
3. Comment on the reactions of Opsonin Inc's competitors to the firm's pricing strategy. What dangers does Opsonin Inc face?

4. Opsonin Inc's financial controller, O'Brien Sally, recently attended a conference at which activity-based costing systems were discussed. She became convinced that such a system would help Opsonin Inc's management to understand its product costs better. She obtained top management's approval to design an activity-based costing system, and an ABC project team was formed. In Stage 1 of the ABC project, each of the overhead items listed in the overhead budget was placed into its own activity cost pool. Then an activity driver was identified for each activity cost pool. Finally, the ABC project team compiled data showing the percentage of each activity driver that was consumed by each of Opsonin Inc's product lines. These data are summarised as follows:

<b>Activity cost pool</b>	<b>Activity driver</b>	<b>product P</b>	<b>product Q</b>	<b>product R</b>
Machinery	Machine hours	25%	50%	25%
Machine setup	Number of setups	20%	30%	50%
Inspection	Number of inspections	15%	45%	40%
Material handling	Raw material costs	25%	69%	6%
Engineering	Number of change orders	35%	10%	55%

Show how the financial controller determined the percentages given above for raw material costs. (Round to the nearest whole per cent.)

5. Develop product costs for the three products on the basis of a simple activity-based product costing system. (Round to the nearest cent.)
6. Calculate a budgeted price for each product, using Opsonin Inc's pricing formula. Compare the new budgeted prices with the current actual selling prices and previously reported product costs.
7. Refer to the new budgeted prices for Opsonin Inc's three products, based on the new activity-based costing system. Write a memo to the company managing director commenting on the situation Opsonin Inc has been facing regarding the market for its products and the actions of its competitors. Discuss the strategic options available to management. What do you recommend, and why?
8. Refer to the product costs developed in requirement 5. Prepare a table showing how Opsonin Inc's traditional, volume-based product costing system distorts the product costs of product P, Q and R.