

Fundamentals Level – Skills Module

# Performance Management

Monday 14 June 2010

**Time allowed**

Reading and planning: 15 minutes

Writing: 3 hours

ALL FIVE questions are compulsory and MUST be attempted.

**Formulae Sheet is on page 8.**

**Do NOT open this paper until instructed by the supervisor.**

**During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.**

**This question paper must not be removed from the examination hall.**

The Association of Chartered Certified Accountants

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Paper

**ACCA**

**ALL FIVE questions are compulsory and MUST be attempted**

- 1 Brick by Brick (BBB) is a building business that provides a range of building services to the public. Recently they have been asked to quote for garage conversions (GC) and extensions to properties (EX) and have found that they are winning fewer GC contracts than expected.

BBB has a policy to price all jobs at budgeted total cost plus 50%. Overheads are currently absorbed on a labour hour basis. BBB thinks that a switch to activity based costing (ABC) to absorb overheads would reduce the cost associated to GC and hence make them more competitive.

You are provided with the following data:

Overhead category	Annual overheads \$	Activity driver	Total number of activities per year
Supervisors	90,000	Site visits	500
Planners	70,000	Planning documents	250
Property related	240,000	Labour hours	40,000
Total	<u>400,000</u>		

A typical GC costs \$3,500 in materials and takes 300 labour hours to complete. A GC requires only one site visit by a supervisor and needs only one planning document to be raised. The typical EX costs \$8,000 in materials and takes 500 hours to complete. An EX requires six site visits and five planning documents. In all cases labour is paid \$15 per hour.

**Required:**

- (a) Calculate the cost and quoted price of a GC and of an EX using labour hours to absorb the overheads. (5 marks)
- (b) Calculate the cost and the quoted price of a GC and of an EX using ABC to absorb the overheads. (5 marks)
- (c) Assuming that the cost of a GC falls by nearly 7% and the price of an EX rises by about 2% as a result of the change to ABC, suggest possible pricing strategies for the two products that BBB sells and suggest two reasons other than high prices for the current poor sales of the GC. (6 marks)
- (d) One BBB manager has suggested that only marginal cost should be included in budget cost calculations as this would avoid the need for arbitrary overhead allocations to products. Briefly discuss this point of view and comment on the implication for the amount of mark-up that would be applied to budget costs when producing quotes for jobs. (4 marks)

**(20 marks)**

- 2 Sticky Wicket (SW) manufactures cricket bats using high quality wood and skilled labour using mainly traditional manual techniques. The manufacturing department is a cost centre within the business and operates a standard costing system based on marginal costs.

At the beginning of April 2010 the production director attempted to reduce the cost of the bats by sourcing wood from a new supplier and de-skilling the process a little by using lower grade staff on parts of the production process. The standards were not adjusted to reflect these changes.

The variance report for April 2010 is shown below (extract).

Variances	Adverse \$	Favourable \$
Material price		5,100
Material usage	7,500	
Labour rate		43,600
Labour efficiency	48,800	
Labour idle time	5,400	

The production director pointed out in his April 2010 board report that the new grade of labour required significant training in April and this meant that productive time was lower than usual. He accepted that the workers were a little slow at the moment but expected that an improvement would be seen in May 2010. He also mentioned that the new wood being used was proving difficult to cut cleanly resulting in increased waste levels.

Sales for April 2010 were down 10% on budget and returns of faulty bats were up 20% on the previous month. The sales director resigned after the board meeting stating that SW had always produced quality products but the new strategy was bound to upset customers and damage the brand of the business.

**Required**

- (a) **Assess the performance of the production director using all the information above taking into account both the decision to use a new supplier and the decision to de-skill the process.** (7 marks)

In May 2010 the budgeted sales were 19,000 bats and the standard cost card is as follows:

	Std cost \$	Std cost \$
Materials (2kg at \$5/kg)	10	
Labour (3hrs at \$12/hr)	36	
Marginal cost		46
Selling price		68
Contribution		22

In May 2010 the following results were achieved:

40,000kg of wood were bought at a cost of \$196,000, this produced 19,200 cricket bats. No inventory of raw materials is held. The labour was paid for 62,000 hours and the total cost was \$694,000. Labour worked for 61,500 hours.

The sales price was reduced to protect the sales levels. However, only 18,000 cricket bats were sold at an average price of \$65.

**Required:**

- (b) **Calculate the materials, labour and sales variances for May 2010 in as much detail as the information allows. You are not required to comment on the performance of the business.** (13 marks)

**(20 marks)**

3 Cut and Stitch (CS) make two types of suits using skilled tailors (labour) and a delicate and unique fabric (material). Both the tailors and the fabric are in short supply and so the accountant at CS has correctly produced a linear programming model to help decide the optimal production mix.

The model is as follows:

Variables:

Let  $W$  = the number of work suits produced

Let  $L$  = the number of lounge suits produced

Constraints

Tailors' time:  $7W + 5L \leq 3,500$  (hours) – this is line T on the diagram

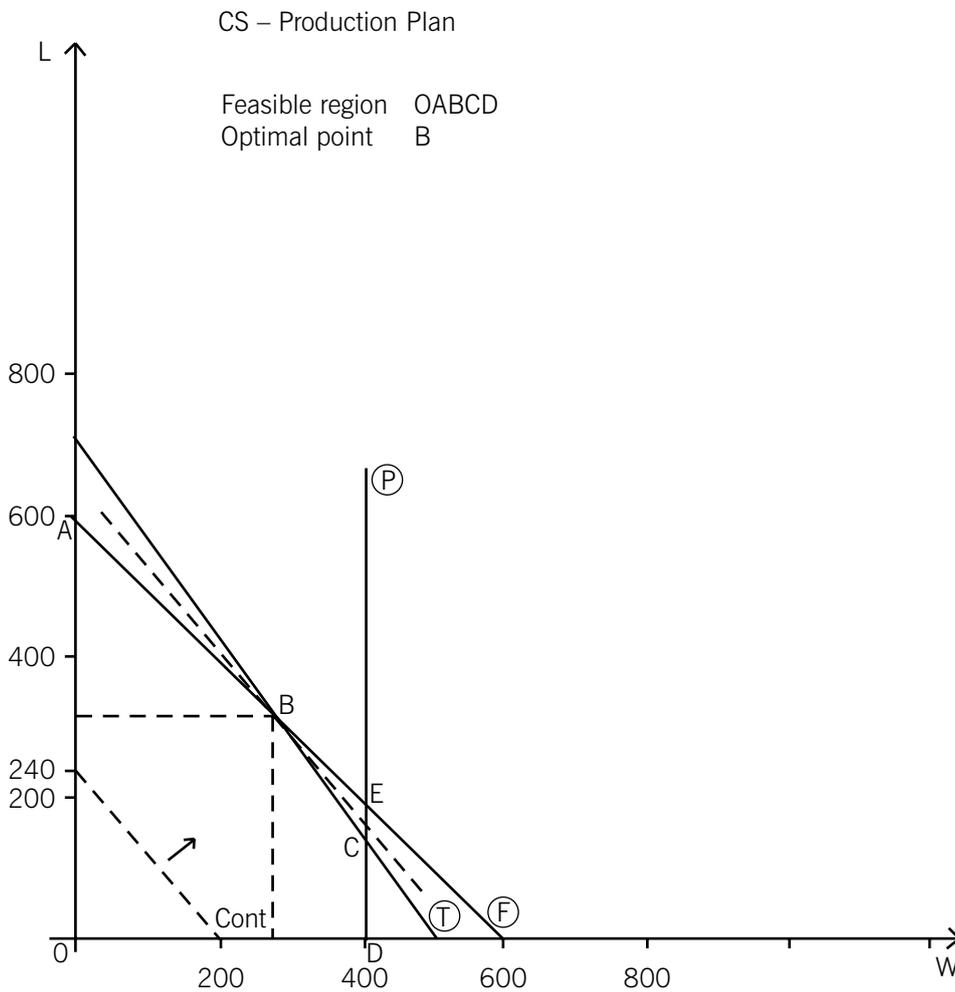
Fabric:  $2W + 2L \leq 1,200$  (metres) – this is line F on the diagram

Production of work suits:  $W \leq 400$  – this is line P on the diagram

Objective is to maximise contribution subject to:

$$C = 48W + 40L$$

On the diagram provided the accountant has correctly identified OABCD as the feasible region and point B as the optimal point.



**Required:**

(a) Find by appropriate calculation the optimal production mix and related maximum contribution that could be earned by CS. (4 marks)

(b) Calculate the shadow prices of the fabric per metre and the tailor time per hour. (6 marks)

The tailors have offered to work an extra 500 hours provided that they are paid three times their normal rate of \$1.50 per hour at \$4.50 per hour.

**Required:**

(c) **Briefly discuss whether CS should accept the offer of overtime at three times the normal rate.** (6 marks)

(d) **Calculate the new optimum production plan if maximum demand for W falls to 200 units.** (4 marks)

**(20 marks)**

- 4 Hammer is a large garden equipment supplier with retail stores throughout Toolland. Many of the products it sells are bought in from outside suppliers but some are currently manufactured by Hammer's own manufacturing division 'Nail'.

The prices (a transfer price) that Nail charges to the retail stores are set by head office and have been the subject of some discussion. The current policy is for Nail to calculate the total variable cost of production and delivery and add 30% for profit. Nail argues that all costs should be taken into consideration, offering to reduce the mark-up on costs to 10% in this case. The retail stores are unhappy with the current pricing policy arguing that it results in prices that are often higher than comparable products available on the market.

Nail has provided the following information to enable a price comparison to be made of the two possible pricing policies for one of its products.

#### **Garden shears**

Steel: the shears have 0.4kg of high quality steel in the final product. The manufacturing process loses 5% of all steel put in. Steel costs \$4,000 per tonne (1 tonne = 1,000kg)

Other materials: Other materials are bought in and have a list price of \$3 per kg although Hammer secures a 10% volume discount on all purchases. The shears require 0.1kg of these materials.

The labour time to produce shears is 0.25 hours per unit and labour costs \$10 per hour.

Variable overheads are absorbed at the rate of 150% of labour rates and fixed overheads are 80% of the variable overheads.

Delivery is made by an outsourced distributor that charges Nail \$0.50 per garden shear for delivery.

#### **Required:**

- (a) Calculate the price that Nail would charge for the garden shears under the existing policy of variable cost plus 30%. (6 marks)
- (b) Calculate the increase or decrease in price if the pricing policy switched to total cost plus 10%. (4 marks)
- (c) Discuss whether or not including fixed costs in a transfer price is a sensible policy. (4 marks)
- (d) Discuss whether the retail stores should be allowed to buy in from outside suppliers if the prices are cheaper than those charged by Nail. (6 marks)

**(20 marks)**

- 5 Jump has a network of sports clubs which is managed by local managers reporting to the main board. The local managers have a lot of autonomy and are able to vary employment contracts with staff and offer discounts for membership fees and personal training sessions. They also control their own maintenance budget but do not have control over large amounts of capital expenditure.

A local manager's performance and bonus is assessed relative to three targets. For every one of these three targets that is reached in an individual quarter, \$400 is added to the manager's bonus, which is paid at the end of the year. The maximum bonus per year is therefore based on 12 targets (three targets in each of the four quarters of the year). Accordingly the maximum bonus that could be earned is  $12 \times \$400 = \$4,800$ , which represents 40% of the basic salary of a local manager. Jump has a 31 March year end.

The performance data for one of the sports clubs for the last four quarters is as follows

	Qtr to 30 June 2009	Qtr to 30 September 2009	Qtr to 31 December 2009	Qtr to 31 March 2010
Number of members	3,000	3,200	3,300	3,400
Member visits	20,000	24,000	26,000	24,000
Personal training sessions booked	310	325	310	339
Staff days	450	480	470	480
Staff lateness days	20	28	28	20
Days in quarter	90	90	90	90

Agreed targets are:

1. Staff must be on time over 95% of the time (no penalty is made when staff are absent from work)
2. On average 60% of members must use the clubs' facilities regularly by visiting at least 12 times per quarter
3. On average 10% of members must book a personal training session each quarter

**Required:**

- (a) Calculate the amount of bonus that the manager should expect to be paid for the latest financial year. (6 marks)
- (b) Discuss to what extent the targets set are controllable by the local manager (you are required to make a case for both sides of the argument). (9 marks)
- (c) Describe two methods as to how a manager with access to the accounting and other records could unethically manipulate the situation so as to gain a greater bonus. (5 marks)

**(20 marks)**

## Formulae Sheet

### Learning curve

$$Y = ax^b$$

Where  $y$  = average cost per batch

$a$  = cost of first batch

$x$  = total number of batches produced

$b$  = learning factor ( $\log LR / \log 2$ )

LR = the learning rate as a decimal

### Regression analysis

$$y = a + bx$$

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$$

$$a = \frac{\sum y}{n} - \frac{b\sum x}{n}$$

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

### Demand curve

$$P = a - bQ$$

$$b = \frac{\text{change in price}}{\text{change in quantity}}$$

$$a = \text{price when } Q = 0$$

End of Question Paper