

Fundamentals Level – Skills Module

Performance Management

Monday 8 December 2008

Time allowed

Reading and planning: 15 minutes

Writing: 3 hours

ALL FOUR questions are compulsory and MUST be attempted.

The formulae are on page 6.

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

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ALL FOUR questions are compulsory and MUST be attempted

1 Pace Company (PC) runs a large number of wholesale stores and is increasing the number of these stores all the time. It measures the performance of each store on the basis of a target return on investment (ROI) of 15%. Store managers get a bonus of 10% of their salary if their store's annual ROI exceeds the target each year. Once a store is built there is very little further capital expenditure until a full four years have passed.

PC has a store (store W) in the west of the country. Store W has historic financial data as follows over the past four years:

	2005	2006	2007	2008
Sales (\$'000)	200	200	180	170
Gross profit (\$'000)	80	70	63	51
Net profit (\$'000)	13	14	10	8
Net assets at start of year (\$'000)	100	80	60	40

The market in which PC operates has been growing steadily. Typically, PC's stores generate a 40% gross profit margin.

Required:

(a) **Discuss the past financial performance of store W using ROI and any other measure you feel appropriate and, using your findings, discuss whether the ROI correctly reflects Store W's actual performance.**

(8 marks)

(b) **Explain how a manager in store W might have been able to manipulate the results so as to gain bonuses more frequently.**

(4 marks)

PC has another store (store S) about to open in the south of the country. It has asked you for help in calculating the gross profit, net profit and ROI it can expect over each of the next four years. The following information is provided:

Sales volume in the first year will be 18,000 units. Sales volume will grow at the rate of 10% for years two and three but no further growth is expected in year 4. Sales price will start at \$12 per unit for the first two years but then reduce by 5% per annum for each of the next two years.

Gross profit will start at 40% but will reduce as the sales price reduces. All purchase prices on goods for resale will remain constant for the four years.

Overheads, including depreciation, will be \$70,000 for the first two years rising to \$80,000 in years three and four.

Store S requires an investment of \$100,000 at the start of its first year of trading.

PC depreciates non-current assets at the rate of 25% of cost. No residual value is expected on these assets.

Required:

(c) **Calculate (in columnar form) the revenue, gross profit, net profit and ROI of store S over each of its first four years.**

(9 marks)

(d) **Calculate the minimum sales volume required in year 4 (assuming all other variables remain unchanged) to earn the manager of S a bonus in that year.**

(4 marks)

(25 marks)

2 Shifters Haulage (SH) is considering changing some of the vans it uses to transport crates for customers. The new vans come in three sizes; small, medium and large. SH is unsure about which type to buy. The capacity is 100 crates for the small van, 150 for the medium van and 200 for the large van.

Demand for crates varies and can be either 120 or 190 crates per period, with the probability of the higher demand figure being 0.6.

The sale price per crate is \$10 and the variable cost \$4 per crate for all van sizes subject to the fact that if the capacity of the van is greater than the demand for crates in a period then the variable cost will be lower by 10% to allow for the fact that the vans will be partly empty when transporting crates.

SH is concerned that if the demand for crates exceeds the capacity of the vans then customers will have to be turned away. SH estimates that in this case goodwill of \$100 would be charged against profits per period to allow for lost future sales regardless of the number of customers that are turned away.

Depreciation charged would be \$200 per period for the small, \$300 for the medium and \$400 for the large van.

SH has in the past been very aggressive in its decision-making, pressing ahead with rapid growth strategies. However, its managers have recently grown more cautious as the business has become more competitive.

Required:

- (a) **Explain the principles behind the maximax, maximin and expected value criteria that are sometimes used to make decisions in uncertain situations.** (4 marks)
- (b) **Prepare a profits table showing the SIX possible profit figures per period.** (9 marks)
- (c) **Using your profit table from (b) above discuss which type of van SH should buy taking into consideration the possible risk attitudes of the managers.** (6 marks)
- (d) **Describe THREE methods other than those mentioned in (a) above, which businesses can use to analyse and assess the risk that exists in its decision-making.** (6 marks)

(25 marks)

- 3 Henry Company (HC) provides skilled labour to the building trade. They have recently been asked by a builder to bid for a kitchen fitting contract for a new development of 600 identical apartments. HC has not worked for this builder before. Cost information for the new contract is as follows:

Labour for the contract is available. HC expects that the first kitchen will take 24 man-hours to fit but thereafter the time taken will be subject to a 95% learning rate. After 200 kitchens are fitted the learning rate will stop and the time taken for the 200th kitchen will be the time taken for all the remaining kitchens. Labour costs \$15 per hour.

Overheads are absorbed on a labour hour basis. HC has collected overhead information for the last four months and this is shown below:

	Hours worked	Overhead cost \$
Month 1	9,300	115,000
Month 2	9,200	113,600
Month 3	9,400	116,000
Month 4	9,600	116,800

HC normally works around 120,000 labour hours in a year.

HC uses the high low method to analyse overheads.

The learning curve equation is $y = ax^b$, where $b = \frac{\text{LogLR}}{\text{Log2}} = -0.074$

Required:

- (a) Describe FIVE factors, other than the cost of labour and overheads mentioned above, that HC should take into consideration in calculating its bid. (10 marks)
- (b) Calculate the total cost including all overheads for HC that it can use as a basis of the bid for the new apartment contract. (13 marks)
- (c) If the second kitchen alone is expected to take 21.6 man-hours to fit demonstrate how the learning rate of 95% has been calculated. (2 marks)

(25 marks)

- 4 Wargrin designs, develops and sells many PC games. Games have a short lifecycle lasting around three years only. Performance of the games is measured by reference to the profits made in each of the expected three years of popularity. Wargrin accepts a net profit of 35% of turnover as reasonable. A rate of contribution (sales price less variable cost) of 75% is also considered acceptable.

Wargrin has a large centralised development department which carries out all the design work before it passes the completed game to the sales and distribution department to market and distribute the product.

Wargrin has developed a brand new game called Stealth and this has the following budgeted performance figures.

The selling price of Stealth will be a constant \$30 per game. Analysis of the costs show that at a volume of 10,000 units a total cost of \$130,000 is expected. However at a volume of 14,000 units a total cost of \$150,000 is expected. If volumes exceed 15,000 units the fixed costs will increase by 50%.

Stealth's budgeted volumes are as follows:

	Year 1	Year 2	Year 3
Sales volume	8,000 units	16,000 units	4,000 units

In addition, marketing costs for Stealth will be \$60,000 in year one and \$40,000 in year two. Design and development costs are all incurred before the game is launched and has cost \$300,000 for Stealth. These costs are written off to the income statement as incurred (i.e. before year 1 above).

Required:

- (a) Explain the principles behind lifecycle costing and briefly state why Wargrin in particular should consider these lifecycle principles. (4 marks)
- (b) Produce the budgeted results for the game 'Stealth' and briefly assess the game's expected performance, taking into account the whole lifecycle of the game. (9 marks)
- (c) Explain why incremental budgeting is a common method of budgeting and outline the main problems with such an approach. (6 marks)
- (d) Discuss the extent to which a *meaningful* standard cost can be set for games produced by Wargrin. You should consider each of the cost classifications mentioned above. (6 marks)

(25 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 = price when $Q = 0$

End of Question Paper