



**Institute of Incorporated Public Accountants**

**Module 13:**

**Advanced Management  
Accounting**

**August 2014**

**SOLUTIONS**

**Instructions: Answer five questions**  
**You must answer the three questions in**  
**Section A**

**Answer any two questions in**  
**Section B**

**All questions carry equal marks**

**Time Allowed: 3 Hours**

**Section A - Compulsory Answer all three questions**

**Required Question 1**

- (a) Compute the profit for each type of handbag where overheads are allocated to handbags applying the traditional overhead absorption costing approach.

	<b>Lux bag</b>	<b>Q bag</b>	<b>B bag</b>
	U400	U700	U900
Direct Material	€24,000	€35,000	€27,000
Direct Labour	€18,000	€21,000	€13,500
Prime cost	€42,000	€56,000	€40,500
Overhead	€19,000	€19,950	€17,100
Total cost	€61,000	€75,950	€57,600
Budgeted sales price	€150.00	€140.00	€90.00
Total costs per unit	€152.50	€108.50	€64.00
(Loss)/Profit	(€2.50)	€31.50	€26.00

	<b>Lux bag</b>	<b>Q bag</b>	<b>B bag</b>	<b>Total</b>	
budgeted handbags	U 400	U 700	U 900	2,000	U
	x	x	x		
Machine hours per unit	5	3	2		
	equals \\/\	equals \\/\	equals \\/\		
Thus total machine hours	2,000	2,100	1,800	5,900	

Machine hours is the predominant activity and cost and thus the most appropriate basis under the TAC approach

Total budgeted overhead  $\frac{€56,050}{5,900 \text{ hours}}$  equals €9.50

<u>bag</u>	<u>Lux bag</u>	<u>Q bag</u>	<u>B</u>
	€9.50	€9.50	€9.50
	x	x	x
	2,000	2,100	1,800
	equals	equals	equals
	€19,000	€19,950	€17,100

Question 1-continued Any five points below and/or similar to ]  
 (b) Compare and contrast the traditional Total Absorption Approach method for absorbing overheads with an Activity Based Costing approach

- (i) TAC assumes all overheads are volume based. Typically in a two stage process it allocates overhead first to cost centres which are usually departments and then allocate those centre costs to products passing through it using a limited number of allocation bases such as labour hours, machine hours etc.
- (ii) ABC by contrast recognises that not all activities are volume based. For example to process an order for 450 units of Q and to process an order for 50 units of Q would probably cost the same. Yet under a volume based approach the first order would be allocated 90% of the costs. Thus in a two stage process the first stage will be an activity cost centre rather than a department as in T.A.C. The second stage will involve many more allocation bases. Thus it will not only have the volume related bases such as labour hours, machine hours but drivers such as purchase orders, number of requisition etc.
- (iii) In a multi-product situation it becomes important to identify in so far as possible the cause and effect on cost of the production activity for a particular product. This is in order to ensure that sales prices are set to cover those costs or cease production because the market price is inadequate.

- (iv) Part of the problem with ABC is that there can be multi-factorial causes and it may not be practical to identify a particular cause to a particular activity. To that extent an arbitrary method of selecting a particular base can be similar to TAC.
- (v) Another problem with ABC is the unitisation of costs. If set up costs of say €1,000 are based on batches and each batch is typically determined to be 100 units then the average cost per batch is a €10. If a special order for say 50 units is created then the set up cost allocated is €500 using this allocation method. But if one set up was required for this batch then the set up cost should be €1,000
- (vi) ABC systems can be costly to implement because the cost of implementation may not be recovered out of the incremental benefits over using the TAC approach.

**Question 2 W/N 1 Computation of total hrs/etc for drivers**

	<b>Lux bag</b>	<b>Q bag</b>	<b>B bag</b>	<b>Total</b>	
budgeted handbags	400	700	900	2,000	bags
	x	x	x		
Machine hours per unit	5	3	2		
	equals \\/\	equals \\/\	equals \\/\		
Total machine hours per type of bag	2,000	2,100	1,800	5,900	hours

Budgeted handbags	U 400	U 700	U 900		
	x	x	x		
Labour hours per bag	3	2	1		
	equals	equals	equals		
Total labour hours per type of bag	1,200	1,400	900	3,500	hours

	<b>Lux bag</b>	<b>Q bag</b>	<b>B bag</b>	<b>Total</b>	
Total requisitions	25	25	25	75	

20 Bags per run thus total runs per type of bag	20	35	45	100 runs	

**W/N 2 Computation of overhead rates for cost drivers**

	<b>Overhead</b>	<b>Amount</b>	<b>Cost Driver</b>	<b>Units total</b>	<b>Rate</b>	
46%	Machine costs	€25,650	Machine hours	5,900	€4.35	
7%	Set up costs	€4,000	Production runs	100	€40.00	
10%	Stores receiving	€5,400	Requisition raised	75	€72.00	
27%	Quality Inspection	€15,000	Production runs	100	€150.00	
11%	Embroidery and inks	€6,000	Labour hours	3,500	€1.71	
<b>100%</b>	<b>Total</b>	<b>€56,050</b>				

**Question 2 continued**

**Computation of cost and profit per type of handbag using ABC**

		<b>Lux bag</b>	<b>Q bag</b>	<b>B bag</b>		
		U400	U700	U900		
	Direct Material	€24,000	€35,000	€27,000		
	Direct Labour	€18,000	€21,000	€13,500		
	Total direct costs	<b>€42,000</b>	<b>€56,000</b>	<b>€40,500</b>		
<b>Rates</b>						
€4.35	Machine costs	€8,695	€9,130	€7,825	€25,650	
€40.00	Set up costs	€800	€1,400	€1,800	€4,000	
€72.00	Stores receiving	€1,800	€1,800	€1,800	€5,400	
€150.00	Quality Inspection	€3,000	€5,250	€6,750	€15,000	

€1.71	Embroidery and inks	€2,057	€2,400	€1,543	€6,000
	<b>Total Overheads</b>	<b>€16,352</b>	<b>€19,980</b>	<b>€19,718</b>	<b>€56,050</b>

Total Costs	<b>€58,352</b>	<b>€75,980</b>	<b>€60,218</b>
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Total costs per unit	€145.88	€108.54	€66.91		
Sales price	€150.00	€140.00	€90.00		
Profit/(Loss)	€4.12	€31.46	€23.09		

**Question 3**

<b>Lux Bags</b>	<b>Sales Price</b>
400	€150
40	€18
360	€168

The volume units change by 40 hats for every €18 change in the price. Thus at a level of 400 hats a zero volume would be arrived at when the price is €150+€180[i.e.€18 x 10 units]

Thus P equals €330 minus 0.45Q [i.e €18/40]

Total sales equals €330 Q minus 0.45 Q<sup>2</sup>

Dtr equals €330 minus 0.90Q

Optimise price is when Marginal revenue equals marginal costs

Marginal costs direct labour and direct material of €105 per unit

M.R. equals M.C.

€330 minus 0.90 equals €105

€225 equals 0.90

Sales price equals €250

Units target is €250 equals €330 minus 0.45 Q

Target quantity equals 177.77 say 178 units

Contribution 178 x €145 [€250 minus €105]

equals €25,810

(b) Question 3 continued

(i) Optimal pricing assumes a linear relationship which is not necessarily true in such a short time period. There is no historic data of sales prices and volumes from which to extrapolate future patterns. This is a first time product introduction and with no well established brand name behind it so it seems unlikely that such a linear relationship could exist.

(ii) The fashion industry which involves non-essential goods is equally likely to be susceptible to prevailing tastes and similar factors which may weight just as importantly as price. These other factors may be impossible to quantify

(iii) The affects of price changes on the other two products-Q bag and B bag- are not incorporated in the above.. For example according to the linear approach if the sales price fell to €114 then volumes would increase by 80 bags. However given that the Q bag is selling for €126 it seems probable that the potential big store buyers of Q bags may switch to the Lux bag thereby losing Style Bag Ltd some of its biggest contribution per product of €46[€126-€80] per Q bag

(iv) Optimal pricing is really only suitable for aggregate demand and not for individual products.

(v) Since this is a new company it may be in a learning curve in relation to production methods and techniques so that marginal costs may not be representative of longer term trends.

(vi) The attitude of suppliers of potential or rival substitutes has not been factored into the model.

**Question 4**

Budgeted Net profit	€51,000	
Sale volume variance		
	[Actual volume budgeted volume] x std. contribution	
	[14,000 units minus 12,000] x €6.00 equals	€12,000 F
		_____
Revised flexed budget based on actual sales volume	€63,000	
Sales price variance [ ASP minus Std SP] x actual units		
	[€10 minus €12] x 12,000 equals	(€28,000)A
Material price variance		
	[Std Price minus Actual Price] x Actual inputs kg	
	[€6.00 minus €5.80] x 7,700 equals	€1,540 F
Material usage		
	[Std input required minus actual input] x std. price	
	[0.5kg x14,000 units minus 7,700kg] x €6 =	(€4,200) A
Total material variance		(€2,660) A



Comment along the following lines

The single biggest is the sales price variance which was cut from €12 to €10 a cut of about 16.66% and total variance of €28,000 which was not compensate by the increase sales volume of €12,000  
Market share fell from 33% to 31% which is within the control of the company

On the other it benefit from the uncontrollable growth in the overall market

[7 marks]

### **Overview of the four integrated aspects of the balanced score card**

- (1) Financial perspective
- (2) Customer perspective
- (3) Internal Business Perspective
- (4) Learning and Growth Perspective

### **Lag measures**

These are the outcomes or results of the actions undertaken in terms of financial consequence. These are mainly incorporated within the **Financial** perspective. Thus they don't incorporate the effect of the decisions as they are made but rather show the effects of those decisions sometime later.

### **Lead measures**

These are the "drivers" of future financial performance. These tend to be non-financial measures of performance such Customer, Internal business processes and learning and growth perspectives.

***A critical assumption is that each performance measure is part of a cause and effect relationship involving linkage from strategy formulation to financial outcomes.***

2 objectives x 2 measure x 4 perspectives equals 16 marks

**(1)Financial perspective** To succeed financially how should we appear to our s/holders?

The other perspectives need to be selected to ensure financial objectives secured

<b><u>Objectives</u></b>	<b><u>Measurement</u></b>	<b><u>Target</u></b>
<b><u>Initiative</u></b>		
<i>Revenue Growth</i>		
New products for old markets	percentage of total sales	x%
New customers/Markets	percentage of total sales	Y%
Product growth	percentage of total sales	z%
<i>Cost reduction</i>		
Unit costs	Percentage reduction	
Sales and General admin	Percentage reduction	
<i>Asset Utilisation</i>		
	ROCE WC to sales	

**[2]Customer Perspective** To achieve our vision how should we appear to our customers?

<b><u>Objectives</u></b>	<b><u>Measurement</u></b>	<b><u>Target</u></b>
<b><u>Initiative</u></b>		
Increasing market share	% share of market	W%
Increasing customer retention	% repeat business	Z%
Increasing customer acquisition	Total sales to new customers	€5M
Increase customer satisfaction	Surveys	Ranking of?
Increase customer profitability	CPA	€xx average
Customer value proposition		
Improve production functionality	Customer survey ratings	
Decrease price competitively	Price relative to rivals	lowest?
Improve product or service	% returns by customers	
Improve delivery times	% on time deliveries	

**[3]Internal Business Perspective**

*To satisfy our customers and shareholders what business processes should we excel at?*

<b><u>Objectives</u></b>	<b><u>Measurement</u></b>	<b><u>Target</u></b>
<b><u>Initiative</u></b>		
<b><u>Innovation</u></b>		
Increase in no.of new products	% of sales that are new products New products versus rivals	
Develop new markets customers	% of sales from new markets	
Decrease new product time to market	Development cycle time	
<b><u>Operations</u></b>		
Increase process efficiency	Outputs/inputs ratios	Capacity usage
Increase process quality	Quality costs as % of sales Prevention/Appraisal Internal failure/External failure	
Decrease process cost	Unit cost trends	Unit cost
Decrease process time	Down times, cycle times	
<b><u>Post sale service</u></b>		
Increase service quality	% of customer request handled With single call	
Increase service efficiency	Input/Output ratios-wastage etc	
Decrease service time	Cycle times in resolving complaints	
Decrease service cost	Unit cost trends	

**[4] Learning and Growth Perspective** Can we continue to improve and create value?

<b><u>Objectives</u></b> <b><u>Initiative</u></b>	<b><u>Measurement</u></b>	<b><u>Target</u></b>
Increase employee capabilities	Staff retention ratio Sales per staff	
Increase I.S. capabilities	% of processes with real time feedback capabilities % of customer facing employees with online access to customers and production information	
Increase motivation, empowerment and alignment	No of suggestions per employee No of suggestions implemented % of employees with personal goals aligned to the BSC % of employees who achieve PGs	

Lead and Lag measures

Note asked for included for info only

### **Benefits and limitations of the BSC**

- 1 Combines financial and non financial measures of performance in a coherent framework
- 2 Provides a framework for translating the company's strategy into a coherent set of measures
- 3 It enables managers to take a 360 degree look at operations and their inter-relationship
- 4 It improves communication in the organisation so the staff within different discipline can relate their activities to the overall company objectives

### **Criticism**

"Cause and effect" relationship is too ambiguous and a lack of empirical evidence to justify the stated relationship.  
Another criticism is the omission of other perspectives such as the environment and employee aspects. However Kaplan & Norton never suggested a rigid number of perspectives.

**Question 6**

(a) One of the purposes of a cost quality report is to indicate the total costs to a company of producing products and services that do not conform with quality requirements.

(b) The four categories of cost are ;

(i) **Prevention costs.**

These are costs incurred to prevent the production of products that do not conform to specification. They include the costs of preventative maintenance, quality planning and training and the extra costs in acquiring high quality raw materials.

(ii) **Appraisal costs:**

These are the costs incurred to ensure the materials and products meet quality standards. They include the costs of inspecting purchased parts, work-in-progress and finished goods as well quality audits and field tests.

(iii) **Internal failure costs.**

These are the costs associated with materials and products that fail to meet quality standards. They include costs incurred before the product is dispatched to the customer, such as the cost of scrap, repair, downtime and work stoppages caused by defects.

(iv) **External failure costs.**

These are costs incurred when inferior products are delivered to the customer. They include the costs of handling customer complaints, warranty replacement, repairs of returned products and the costs arising from a damaged company reputation..

**END OF EXAMINATION**