Strategic Costs Analysis

Calculation of ABC product costs and a discussion of the usefulness of ABC.

Question One: Traditional and ABC profitability analysis comparisons. FG specializes in the manufacture of tablets, laptops, and desktop PCs. FG currently operates a standard absorption costing system. Budgeted information for next year is given below:

	Computers			
Products	**Tablets (Ugx 000)**	**Laptops (Ugx 000)**	**PCs (Ugx 000)**	**Total**
Sales revenue	3640	12,480	98802	6,000
Direct materials	800	2800	2200	5,800
Direct labour	300	1,200	800	2,300
Fixed production overheads	1,456	4,992	3,952	10,400
Gross profit	1,080	3,488	2,928	7,500

Fixed production overheads are currently absorbed based on a percentage of sales revenue. FG is considering changing to an activity-based costing system. The main activities and their associated cost drivers and overhead cost have been identified as follows;

Activity	**Cost driver**	**Production Overhead costs UGX '000')**
Manufacturing scheduling	Number of orders	162
Parts handling	Number of parts	2,464
Assembly	Assembly time	4,472
Software Installation & Testing	Number of software applications	2,000
Packaging	Number of units	1,302
		10,400

Further details have also been ascertained as follows;

Items	**Tablets**	**Laptops**	**Desktop PCs**
Budgeted production for next year (units)	10,000	12,000	6,000
Average number of units per order	10	6	4
Number of parts per unit	20	35	25
Assembly time per unit (minutes)	20	40	30
Number of software applications	2	3	4

Required:

(a) Calculate the total gross profit for each product using the proposed activity-based costing system. ***(13 marks).***

(b) Discuss the differences between the gross profit figures calculated in part (a) and those calculated under the current absorption costing system.
(8 marks)

(c) Explain how the information obtained from the activity-based costing system could be used for cost management purposes.
(4 marks)

Practice Question 2: Trimake Limited makes three main products, using broadly the same production methods and equipment for each. A conventional product costing system is used at present, although an activity-based costing (ABC) system is being considered. Details of the three products for a typical period are;

	Hours per unit			
	Labor hours	Machine Unit	Materials per unit (Ugx)	Volume units
Product X	1/2	$1^{1/2}$	20	750
Product y	$1^{1/2}$	1	12	1,250
Product Z	1	3	25	7,000

Direct labour costs Ugx 14 per hour and production overheads are absorbed machine-hourly. The rate for the period is Ugx 28 per machine hour.

(a) You must calculate the cost per unit for each product using conventional methods. (4marks)

Further analysis shows that the total of production overheads can be divided as follows

Production overheads	**%**
Costs relating to setups	35
Costs relating to Machinery	20
Costs Relating to material handling	15
Costs relating to inspection	30
Total Production Overheads	100%

The following activity volumes are associated with the product line for the period.

Total activities for the period.

Products	Number of setups	Number of movements of materials	Number of inspections
Product X	75	12	150
Product y	115	21	180
Product Z	480	87	670
Total	670	120	1,000

b) Calculate the cost per unit for each product using ABC principles (15 marks)

(c) Comment on the reasons for any differences in the costs in your answers to (a) and (b) (3 marks)

REAL WORLD VIEWS:

Practice Question 3: Activity-based costing in restaurants

Raab, Shoemaker and Mayer (2007) developed a workable ABC model for a restaurant operation in the USA that enabled previously undistributed indirect operating expenses to be traced to individual menu items. Menu prices were previously determined on a cost-plus basis using variable cost as the cost base. In recent years, indirect operating expenses had become a larger percentage of the total cost structure of the restaurant.

The ABC study only examined the restaurant's dinner starter and drink service; its lunch menu was not included in the study. The ABC analysis revealed that 11 out of the 14 dinner starters were unprofitable and were thus a major contributor to the restaurant's negative operating profit. These results reflect the restaurant's relatively high overhead costs which were not taken into account when determining menu prices. The authors conclude that menu ABC profitability analysis that goes beyond the simple analysis of food costs can be applied in the restaurant industry and that a restaurant manager's menu management decisions will differ dramatically if he or she is confronted with the differing results arising from an ABC approach.

A similar experiment was conducted by Linassi, Alberton and Marinho (in 2016). They combined the ABC model with Menu Engineering to determine true menu profitability for an oriental restaurant in

Brazil. Using the combined models meant that both food and traceable operating costs could be used to estimate the contribution margin for each menu item rather than the food costs alone as the traditional approach does. The article states 'The results revealed small differences in the rankings between the traditional approach and ABC/ME**,** demonstrating that the integration of ABC with ME made it possible to identify increased food costs and lower CMs for all groups of menu items. The results also show that ABC methods apply to an oriental-style restaurant.'

Questions

i. The first step in designing an ABC system is to identify the major activities in an organization. What are the major activities in a restaurant?

ii. What action should an organization take when the ABC analysis identifies loss-making activities?

iii. What are the factors that might prevent the restaurant industry from using ABC?