



**THE INSTITUTE OF CERTIFIED PUBLIC
ACCOUNTANTS OF PAKISTAN (ICPAP)**

Stage	Professional	Course Code	P-502
Examination	Winter-2012	Course Name	Advanced Performance Management (Solution)
Time Allowed	03 Hours	Maximum Marks	100
NOTES: 1) All questions are to be attempted. 2) Answers are expected to be precise, to the point and well written. 3) Neatness and style will be taken into account in marking the papers.			

Question No 1:-

You are the management accountant of the SSA Group which manufactures an innovative range of products to provide support for injuries to various joints in the body. The group has adopted a divisional structure. Each division is encouraged to maximise its reported profit.

Division A, which is based in a country called Nearland, manufactures joint-support appliances which incorporate a 'one size fits all people' feature. A different appliance is manufactured for each of knee, ankle, elbow and wrist joints.

Budget information in respect of Division A for the year ended 31 December 2010 is as follows:

Support appliance	Knee	Ankle	Elbow	Wrist
Sales units (000's)	20	50	20	60
Selling price per unit (Rs)	24	15	18	9
Total variable cost of sales (Rs' 000)	200	250	160	240

Each of the four support products uses the same quantity of manufacturing capacity. This gives Division A management the flexibility to alter the product mix as desired. During the year to 31 December 2010 it is estimated that a maximum of 160,000 support products could be manufactured.

The following information relates to Division B which is also part of the SSA group and is based in Distantland:

1. Division B purchases products from various sources, including from other divisions in SSA group, for subsequent resale to customers.
2. The management of Division B has requested two alternative quotations from Division A in respect of the year ended 31 December 2010 as follows:

Quotation 1 – Purchase of 10,000 ankle supports.

Quotation 2 – Purchase of 18,000 ankle supports.

The management of the SSA Group has decided that a minimum of 50,000 ankle supports must be reserved for customers in Nearland in order to ensure that customer demand can be satisfied and the product's competitive position is maintained in the Nearland market.

The management of the SSA Group is willing, if necessary, to reduce the budgeted sales quantities of other types of joint support in order to satisfy the requirements of Division B for ankle supports. They wish, however, to minimize the loss of contribution to the Group.

The management of Division B is aware of another joint support product, which is produced in Distantland, that competes with the Division A version of the ankle support and which could be purchased at a local currency price that is equivalent to Rs9 per support. SSA Group policy is that all divisions are allowed autonomy to set transfer prices and purchase from whatever sources they choose. The management of Division A intends to use market price less 30% as the basis for each of quotations 1 and 2.

Required:

(a)

- i. The management of the SSA Group have asked you to advise them regarding the appropriateness of the decision by the management of Division A to use an adjusted market price as the basis for the preparation of each quotation and the implications of the likely sourcing decision by the management of Division B.

Your answer should cite relevant quantitative data and incorporate your recommendation of the prices that should be quoted by Division A for the ankle supports in respect of quotations 1 and 2, that will ensure that the profitability of SSA Group as a whole is not adversely affected by the decision of the management of Division B.

- ii. Advise the management of Divisions A and B regarding the basis of transfer pricing which should be employed in order to ensure that the profit of the SSA Group is maximized.
- b) After considerable internal discussion concerning Quotation 2 by the management of SSA Group, Division A is not prepared to supply 18,000 ankle supports to Division B at any price lower than 30% below market price. All profits in Distantland are subject to taxation at a rate of 20%. Division A pays tax in Nearland at a rate of 40% on all profits.

Advise the management of SSA Group whether the management of Division B should be directed to purchase the ankle supports from Division A, or to purchase a similar product from a local supplier in Distantland. Supporting calculations should be provided.

(5+5+10=20 Marks)

Answer:-

(a) (i) As regards Quotation 1 in respect of the year ending 31 December 2010, the management of Division B would purchase ankle supports from a local supplier in order to increase the profitability of Division B. An internal transfer price from Division A of Rs10.50 (Rs15 less 30%) would appear unattractive in comparison with a locally available price of Rs9. The management of Division B is encouraged to seek the maximization of reported profit as its key objective.

Division A has spare production capacity of 10,000 units (Maximum available = 160,000 units and the 2010 budget total demand is 150,000 units). Division A could, therefore, supply 10,000 units of ankle supports at its marginal cost of Rs7 per unit (Rs350, 000/50,000) i.e. at a total cost of Rs70, 000. However the external supplier would charge Rs9 per unit, giving a total price of Rs90, 000 for the 10,000 units.

In order to have decisions leading to the maximization of SSA group profit, Division A should, therefore, quote its marginal cost of Rs7 per unit for each of the 10,000 units required by Division B.

SSA Group profit will then increase by $(Rs9 - Rs7) \times 10,000 = Rs20, 000$.

As regards Quotation 2 in respect of the year ending 31 December 2010, the management of Division B would again purchase from a local supplier in order to increase the reported profitability of the division if Division A quotes a transfer price of Rs10.50 (Rs15 less 30%).

Division A could potentially have supplied 18,000 ankle supports by using (i) spare capacity for 10,000 units and (ii) switching 8,000 units of production from sales of the type of support that earns the lowest contribution per unit.

The 10,000 units of spare capacity can be supplied at marginal cost of Rs7 per unit as in Quotation 1.

The additional 8,000 units would have to be diverted from the type of existing support that earns the lowest contribution per unit. The situation is as follows:

Product	Knee support	Ankle support	Elbow support	Wrist support
Selling price per unit (Rs)	24	15	18	9
Variable cost per unit (Rs)	10	7	8	4
Contribution per unit (Rs)	14	8	10	5

Division A should offer to transfer the additional 8,000 ankle supports by diverting production from the least profitable type of support. The wrist support earns the lowest contribution per unit (Rs5). Hence Division A should offer to transfer the additional 8,000 ankle supports at marginal cost + contribution foregone = Rs7 + Rs5 = Rs12.

In this case, Division B would reject the offer and would buy externally at Rs9 per unit. This would ensure that SSA Group profit is not adversely affected by any transfer decision.

(ii) The management of the SSA Group needs to ensure that the management of all divisions takes into consideration all internal and external information relevant to divisional and, much more importantly, group circumstances.

As a starting point, the basic principle which underpins transfer pricing is that transfer prices should be set at a level which covers the marginal costs plus any opportunity cost to the SSA Group. If the basic principle is applied correctly then any subsequent decision made regarding whether to make internal transfers or external sales of products or internal purchases as opposed to external sourcing of products should lead to the most profitable outcome from the standpoint of the group as a whole.

What is best for the SSA Group as a whole is dependent upon the capacity utilization of its divisions. In this example everything depends on the capacity utilization of Division A.

What is of vital importance is that the marginal revenues and marginal costs of the SSA Group are known, understood and applied by management?

(b) (i) If Division B buys from a local supplier the financial implications for the SSA group are as follows:

Division A sales:	Rs
60,000 wrist supports at a contribution of Rs. 5 per unit	300,000
Taxation at 40%	120,000
After tax benefit of sales	<u>180,000</u>
Division B purchases:	
18,000 ankle supports at a cost of Rs. 9 per unit	162,000
Taxation benefit at 20%	32,400
After tax cost of purchases	<u>129,600</u>
Net benefit to SSA Group = Rs. 180,000 - Rs 129,600	<u>Rs. 50,400</u>

If Division B buys internally from Division A the financial implications for SSA group are as follows:

Division A sales:	Rs
External:	
50,000 wrist supports at a contribution of Rs 5 per unit	260,000
18,000 ankle supports to Division B at a contribution of (Rs 15 × 70%) - Rs 7 = Rs 3.5 per unit	63,000
	<u>323,000</u>
Taxation at 40%	129,200
After tax benefit of sales	<u>193,800</u>
Division B purchases:	
18,000 ankle supports at cost of Rs 10.50 per unit	189,000
Taxation benefit at 20%	37,800
After tax cost of purchases	<u>151,200</u>
Net benefit to SSA group	Rs. 42,600

The SSA group will be Rs. 50,400 - Rs. 42,600 = Rs. 7,800 worse off if Division B purchases the ankle supports from Division.

A, as opposed to purchasing an equivalent product from a local supplier

Question No 2:-

Franchising For You Ltd (F4U) markets a range of franchises which it makes available to its customers, the franchisees. F4U supplies the franchisee with information of the mode of operation, detailed operation schedules and back-up advice (by telephone, internet) and undertakes national advertising. Each

franchisee must arrange for its own premises, equipment and undertake local marketing.

F4U is considering the introduction of a Dance and Drama franchise which would have an expected life of six years. From this project, the only income F4U will receive from franchisees comes from the initial franchise fee.

The following estimates have been made relating to the cash outflows and inflows for F4U in order that F4U can evaluate the financial viability of the Dance and Drama franchise proposal:

1. Initial investment of Rs6m. This will include a substantial element relating to the 'intellectual capital' requirement of the proposal.
2. Development/improvement costs of Rs1m per year at the end of each of years two and three.
3. 300 franchises will be sold each year at a fee of Rs20,000 per franchisee.
4. Variable costs, payable in full on the issue of each franchise, are estimated at Rs6,000 per franchisee.
5. Directly attributable fixed costs of Rs0.6m per year in each of years one to six. No further fixed costs will be payable by F4U after this period.
6. Corporation tax at the rate of 30%, payable in the year in which cash flow occurs. Tax allowances are not available on the initial investment or development/improvement costs payable by F4U.
7. All cash flows are stated in current prices and with the exception of the initial investment will occur at the end of each year.
8. The money cost of capital is 15.44%. Annual inflation during the period is estimated at 4%.

Required:

- a) Calculate the net present value (NPV) of the Dance and Drama franchise proposal and recommend whether it should be undertaken by F4U.
- b) Discuss the elements to be considered as 'intellectual capital' and issues associated with its valuation for inclusion in the initial investment of Rs6m.
- c) Discuss ways in which reliance solely on financial performance measures can detract from the effectiveness of the performance management system within an organisation.

F4U has identified key variables as follows:

1. The number of franchises taken up each year. It is estimated that a flexible pricing policy will result in the following outcomes:

Fee per franchise Rs	Number of franchises Sold each year
22,000	270
20,000	300
18,000	355

2. The variable cost per franchise may be Rs7, 000, Rs6, 000 or Rs5, 000.

The NINE possible outcomes of a spreadsheet model used in calculating the NPV and incorporating the variables 1 and 2 above, have been identified as follows:

		Payoff Matrix: NPV values		
		Fee per franchise (Rs000)		
		18	20	22
Variable cost Per franchise (Rs 000)	5	4,348,226	4,007,630	4,274,183
	6	3,296,822	3,119,120	3,474,524
	7	2,245,419	2,230,610	2,674,865

Required:

- d) State the franchise fee pricing strategy (Rs per franchise) which will result from the operation of each of the following decision rules:
- (i) Maximax;
 - (ii) Maximin;
 - (iii) Minimax regret.

Your answer should explain the basis of operation of each of the three decision rules.

(5+5+5+5=20 Marks)

Answer:-

- a) Contribution per franchise = sales revenue - variable cost
= Rs. 20,000 - Rs. 6,000 = Rs. 14,000

Net operating cash flow each year before taxation = (Rs14, 000 x 300) - Rs600, 000 = Rs3, 600,000

Net operating cash flow each year after taxation = Rs3, 600,000 x 70% = Rs2, 520,000

Net present value (NPV) at a discount rate of 11%

Net operating cash flow - initial investment - development costs
= (2,520,000 x 4.231) - (6,000,000) - (1,000,000 x 0.812) - (1,000,000 x 0.731)
= Rs3, 119,120

The positive NPV indicates that the proposal should be undertaken.

Note: A real discount rate of 11% has been used. It has been calculated as follows:

$$(1 + \text{money cost of capital}) / (1 + \text{rate of inflation}) - 1$$
$$= (1 + 0.1544) / (1 + 0.04) - 1$$
$$= 0.11 \text{ or } 11\%$$

- b) There are barriers to the creation and revision of a performance measurement system. Key drivers are not easily measured.

This applies specifically to the issue of intellectual capital.

Intellectual capital will include assets such as employee know-how, skills and creativity. Such assets cannot be measured using traditional financial measures. It is necessary to identify and value a number of alternative measures such as years of experience or service of key employees, or the proportion of employees generating new ideas for the development of the business.

The rise of intellectual capital statements has been driven by the decreasing information relevance of aspects of traditional financial statements. There is a role for accountants (in particular management accountants) in classifying the intellectual (and intangible) assets in the organisation.

In F4U the development of new franchises will rely heavily on the intellectual capital input. This will require the ongoing development of existing employee knowledge and expertise and the recruitment of new expertise/knowledge as required by the trend in the franchise range.

There will be specific costs incurred in the retention and development of existing staff expertise and in the acquisition of new staff/expertise and its development within the ethos of F4U.

- c) A Performance Measurement system (PMS) must be comprehensive for the following reasons:
- Financial is only one dimension of value – as such it is inadequate in evaluating strategic performance of an organisation in its entirety.
 - Financial measures are traditionally backward looking – in today's volatile markets, a poor predictor of future performance.
 - Financial measures take no account of the intangible value drivers – especially important in knowledge intensive companies.
 - Fixation with bottom line profit pushes for short-term decisions to boost earnings streams in short term.
 - Alternative perspectives are needed to satisfy demands of providing a sustainable competitive environment.

The effectiveness of a PMS based solely on financial performance may be reduced due to key drivers not being easily measured such as, for example, the degree of innovation required for new franchises.

Also, there may be conflict between the PMS with the culture of an organisation. The culture will probably focus on innovation in franchise development. This will not be enhanced by a solely financial based PMS. It is important that a culture is developed which recognises and rewards the contribution of employees to achieving corporate goals and strategy fulfillment.

It is important to focus on sustaining competitive advantage through superior strategic management in all aspects of franchise development and implementation. There is a need for better business intelligence capability from both within the organisation and from external sources, in the assessment of likely demand for new franchise areas and how best to satisfy such demand. In this regard there is need for non-financial performance measures in order to enhance the effectiveness of the PMS.

- d) The maximax rule looks for the largest possible outcome. In this case F4U will choose a fee per franchise of Rs18, 000 where there is a possibility of an NPV of Rs4, 348,226. This may be seen as risk seeking since F4U has not been put off by the possibility of a lower NPV than if a Rs22, 000 fee is charged and variable costs are Rs6, 000 or Rs7, 000.

The maximin rule looks for the fee per franchise which will maximise the minimum possible NPV. Hence maximin is a risk adverse strategy.

In this case F4U will choose a fee per franchise of Rs22, 000 where the lowest NPV is Rs2, 674,865. This is better than the lowest figures applying where franchise fees of Rs18, 000 or Rs20, 000 apply.

The minimax regret rule requires the choice of the fee per franchise which will minimize the regret from making the wrong decision. Regret in this context is the opportunity lost through making the wrong decision. Using the calculation from the payoff matrix given in the question, a regret matrix may be created as follows:

Regret matrix

Fee per franchise (Rs. 000)

		Rs. 18	Rs. 20	Rs. 22
Variable cost	5	0	340,596	74,043
Per franchise	6	177,702	355,404	0
(Rs000)	7	429,446	444,255	0

Question No 3:-

Waseem 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. Waseem 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.

Waseem has a large centralized 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.

Waseem 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 Rs 30 per game. Analysis of the costs show that at a volume of 10,000 units a total cost of Rs 130,000 is expected. However at a volume of 14,000 units a total cost of Rs 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 unit's	16,000 unit's	4,000 units

In addition, marketing costs for Stealth will be Rs 60,000 in year one and Rs 40,000 in year two. Design and development costs are all incurred before the game is launched and has cost Rs 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 Waseem in particular should consider these lifecycle principles.
- 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.
- c) Explain why incremental budgeting is a common method of budgeting and outline the main problems with such an approach.
- d) Discuss the extent to which a meaningful standard cost can be set for games produced by Waseem. You should consider each of the cost classifications mentioned above.

(5+5+5+5=20 Marks)

Answer:-

- a) Lifecycle costing is a concept which traces all costs to a product over its complete lifecycle, from design through to cessation. It recognises that for many products there are significant costs to be incurred in the early stages of its lifecycle. This is probably very true for Waseem Limited. The design and development of software is a long and complicated process and it is likely that the costs involved would be very significant.

The profitability of a product can then be assessed taking all costs into consideration.

It is also likely that adopting lifecycle costing would improve decision-making and cost control. The early development costs would have to be seen in the context of the expected trading results, therefore preventing a serious over spend at this stage or underpricing at the launch point.

- b) Budgeted results for game

	Year 1 (Rs)	Year 2 (Rs)	Year 3 (Rs)	Total (Rs)
Sales	240,000	480,000	120,000	840,000
Variable cost (WI)	40,000	80,000	20,000	140,000
Fixed cost (W 1)	80,000	120,000	80,000	280,000
Marking cost	<u>60,000</u>	<u>40,000</u>		<u>100,000</u>
Profit	<u>60,000</u>	<u>240,000</u>	<u>20,000</u>	<u>320,000</u>

On the face of it the game will generate profits in each of its three years of life. Games only have a short lifecycle as the game players are likely to become bored of the game and move on to something new.

The pattern of sales follows a classic product lifecycle with poor levels of sales towards the end of the life of the game.

The Stealth product has generated Rs 320,000 of profit over its three year life measured on a traditional basis. This represents 40% of turnover – ahead of its target. Indeed it shows a positive net profit in each of its years on existence.

The contribution level is steady at around 83% indicating reasonable control and reliability of the production processes. This figure is better than the stated target.

Considering traditional performance management concepts, Waseem Limited is likely to be relatively happy with the game's performance.

However, the initial design and development costs were incurred and were significant at Rs 300,000 and are ignored in the annual profit calculations. Taking these into consideration, the game only just broke even, making a small Rs 20,000 profit.

Whether this is enough is debatable, it represents only 2.4% of sales for example. In order to properly assess the performance of a product the whole lifecycle needs to be considered.

Workings

W1 Split of variable and fixed cost for Stealth

	Volume	Cost Rs
High	14,000 units	150,000
Low	10,000 units	130,000
Difference	4,000 units	20,000

Variable cost per unit = Rs 20,000/4,000 unit = Rs 5 per unit

Total cost = fixed cost + variable cost

Rs 150,000 = fixed cost + (14,000 x Rs 5)

Rs 150,000 = fixed cost +Rs 70,000

Fixed cost = Rs 80,000 (and Rs 120,000 if volume exceeds 15,000 units in a year.)

- c) Incremental budgeting is a process whereby this year's budget is set by reference to last year's actual results after an adjustment for inflation and other incremental factors. It is commonly used because:
- It is quick to do and a relatively simple process.
 - The information is readily available, so very limited quantitative analysis is needed.
 - It is appropriate in some circumstances. For example, in a stable business, the amount of stationery spent in one year is unlikely to be significantly different in the next year, so taking the actual spend in year one and adding a little for inflation should be a reasonable target for the spend in the next year.

There are problems involved with incremental budgeting:

- It builds on wasteful spending. If the actual figures for this year include overspends caused by some form of error then the budget for the next year would potentially include this overspend again.
 - It encourages organisations to spend up to the maximum allowed in the knowledge that if they don't do this then they will not have as much to spend in the following year's budget.
 - Assessing the amount of the increment can be difficult.
 - It is not appropriate in a rapidly changing business.
 - Can ignore the true (activity based) drivers of a cost leading to poor budgeting.
- d) Design and development costs: Setting a standard cost for this classification of cost would be very difficult. Presumably each game would be different and present the program writers with different challenges and hence take a varying amount of time.

Variable production cost: A game will be produced on a CD or DVD in a fairly standard format. Each CD/DVD will be identical and as a result setting a standard cost would be possible. Allowance might need to be made for waste or faulty CDs produced. Some machine time will be likely and again this should be the same for all items and therefore setting a standard would be valid.

Fixed production cost: The standard fixed production cost of a game will be the product of the time taken to produce the game and the

imply a variability (cost per unit) that is not the case and can therefore confuse non-accountants, causing poor decisions. The time per unit will be fairly standard.

Marketing costs: Games may have different target audiences and therefore require different marketing strategies. As such setting a standard may be difficult to do. It may be possible to set standards for each marketing media chosen. For example the rates for a page advert in a magazine could be set as a standard. standard fixed overhead absorption rate for the business. This brings into question whether this is 'meaningful'. Allocating fixed costs to products in a standard way may not provide meaningful data. It can sometimes

Question No 4:-

Tic International Park (TIP) is a theme park and has for many years been a successful business, which has traded profitably. About three years ago the directors decided to capitalize on their success and reduced the expenditure made on new thrill rides, reduced routine maintenance where possible (deciding instead to repair equipment when it broke down) and made a commitment to regularly increase admission prices. Once an admission price is paid customers can use any of the facilities and rides for free.

These steps increased profits considerably, enabling good dividends to be paid to the owners and bonuses to the directors. The last two years of financial results are shown below.

	2008	2009
	Rs	Rs
Sales	5,250,000	5,320,000
Less expense:		
Wages	2,500,000	2,200,000
Maintenance - routine	80,000	70,000
Repairs	260,000	320,000
Directors salaries	150,000	160,000
Directors Bonuses	15,000	18,000
Other costs (including depreciation)	1,200,000	1,180,000
Net profit	1,045,000	1,372,000
Book value of assets at start of year	13,000,000	12,000,000
Dividend paid	500,000	650,000
Number of visitors	150,000	140,000

TIP operates in a country where the average rate of inflation is around 1% per annum.

Required:

- a) Assess the financial performance of TIP using the information given above.

During the early part of 2008 TIP employed a newly qualified management accountant. He quickly became concerned about the potential performance of TIP and to investigate his concerns he started to gather data to measure some non-financial measures of success. The data he has gathered is shown below:

Table 1

	2008	2009
Hours lost due to breakdown of rides (see note 1)	9,000 hours	32,000 hours
Average waiting time per ride	20 minutes	30 minutes

Note 1: TIP has 50 rides of different types. It is open 360 days of the year for 10 hours each day

Required:

- b) Assess the quality of the service that TIP provides to its customers using Table 1 and any other relevant data and indicate the risks it is likely to face if it continues with its current policies.

(10+10=20 Marks)

Answer:-

- a) TIPs Financial performance can be assessed in a number of ways:

Sales growth

Sales are up about 1.3% (W1) which is a little above the rate of inflation and therefore a move in the right direction. However, with average admission prices jumping about 8.6% (W2) and numbers of visitors falling there are clearly problems. Large increases in admission prices reduce the value proposition for the customer; it is unlikely that the rate of increase is sustainable or even justifiable. Indeed with volumes falling (down by 6.7%, (W6)) it appears that some customers are being put off and price could be one of the reasons.

Maintenance and repairs

There appears to be a continuing drift away from routine maintenance with management preferring to repair equipment as required. This does not appear to be saving any money as the combined cost of maintenance and repair is higher in 2009 than in 2008 (possible risks are dealt with in part (b)).

Directors pay

Absolute salary levels are up 6.7% (W3), well above the modest inflation rate. It appears that the shareholders are happy with the financial performance of the business and are prepared to reward the directors accordingly. Bonus levels are also well up. It may be that the directors have some form of profit related pay scheme and are being rewarded for the improved profit performance. The directors are likely to be very pleased with the increases to pay.

Wages

Wages are down by 12% (W5). This may partly reflect the loss of customers (down by 6.7% (W6) if we assume that at least part of the wages cost is variable. It could also be that the directors are reducing staff levels beyond the fall in the level of customers to enhance short-term profit and personal bonus. Customer service and indeed safety could be compromised here.

Net profit

Net profit is up a huge 31.3% (W7) and most shareholders would be pleased with that. Net profit is a very traditional measure of performance and most would say this was a sign of good performance.

Return on assets

The profitability can be measured relative to the asset base that is being used to generate it. This is sometimes referred to as ROI or return on investment. The return on assets is up considerably to 11.4% from 8% (W8). This is partly due to the significant rise in profit and partly due to the fall in asset value. We are told that TIP has cut back on new development so the fall in asset value is probably due to depreciation being charged with little being spent during the year on assets. In this regard it is inevitable that return on assets is up but it is more questionable whether this is a good performance. A theme park (and

thrill rides in particular) must be updated to keep customers coming back. The directors on TIP are risking the future of the park.

b) Quality provision

Reliability of the rides

The hours lost has increased significantly. Equally the % of capacity lost due to breakdowns is now approaching 17.8% (W9). This would appear to be a very high number of hours lost. This would surely increase the risk that customers are disappointed being unable to ride. Given the fixed admission price system this is bound to irritate some customers as they have effectively paid to ride already.

Average queuing time

Queuing will be seen by customers as dead time. They may see some waiting as inevitable and hence acceptable. However TIP should be careful to maintain waiting times at a minimum. An increase of 10 minutes (or 50%) is likely to be noticeable by customers and is unlikely to enhance the quality of the TIP experience for them. The increase in waiting times is probably due to the high number of hours lost due to breakdown with customers being forced to queue for a fewer number of ride options.

Safety

The clear reduction in maintenance could easily damage the safety record of the park and is an obvious quality issue.

Risks

If TIP continues with current policies then they will expose themselves to the following risks:

- The lack of routine maintenance could easily lead to an accident or injury to a customer. This could lead to compensation being paid or reputational damage
- Increased competition. The continuous raising of admission prices increases the likelihood of a new competitor entering the market (although there are significant barriers to entry in this market e.g. capital cost, land and so on).
- Loss of customers. The value for money that customers see when coming to TIP is clearly reducing (higher prices, less reliability of rides and longer queues). Regardless of the

existence of competition customers could simply chose not to come, substituting another leisure activity instead

- Profit fall. In the end if customers' numbers fall then so will profit. The shareholders, although well rewarded at the moment could suffer a loss of dividend. Directors' job security could then be threatened

Workings:

(W1) Sales growth is $\text{Rs } 5,320,000 / \text{Rs } 5,250,000 = 1.01333$ or 1.3%

(W2) Average admission prices were:

2008: $\text{Rs } 5,250,000 / 150,000 = \text{Rs } 35$ per person

2009: $\text{Rs } 5,320,000 / 140,000 = \text{Rs } 38$ per person

An increase of $\text{Rs } 38 / \text{Rs } 35 = 1.0857$ or 8.57%

(W3) Directors pay up by $\text{Rs } 160,000 / \text{Rs } 150,000 = 1.0667$ or 6.7%

(W4) Directors bonuses levels up from $\text{Rs } 15,000 / \text{Rs } 150,000$ or 10% to $\text{Rs } 18,000 / \text{Rs } 160,000$ or 12.5% of turnover. This is an increase of $3/15$ or 20%

(W5) Wages are down by $(1 - \text{Rs } 2,200,000 / \text{Rs } 2,500,000)$ or 12%

(W6) Loss of customers is $(1 - 140,000 / 150,000)$ or 6.7%

(W7) Profits up by $\text{Rs } 1,372,000 / \text{Rs } 1,045,000 = 1.3129$ or 31.3%

(W8) Return on assets:

2008: $\text{Rs } 1,045,000 / \text{Rs } 13,000,000 = 1.0803$ or 8.03%

2009: $\text{Rs } 1,372,000 / \text{Rs } 12,000,000 = 1.114$ or 11.4%

(W9) Capacity of rides in hours is $360 \text{ days} \times 50 \text{ rides} \times 10 \text{ hours per day} = 180,000$

2008 lost capacity is $9,000 / 180,000 = 0.05$ or 5%

2009 lost capacity is $32,000 / 180,000 = 0.177$ or 17.8%

Question No 5:-

Hilal Cakes make cakes, which are sold directly to the public. The new production manager (a celebrity chef) has argued that the business should use

only organic ingredients in its cake production. Organic ingredients are more expensive but should produce a product with an improved flavor and give health benefits for the customers. It was hoped that this would stimulate demand and enable an immediate price increase for the cakes.

Hilal Cakes operates a responsibility based standard costing system which allocates variances to specific individuals. The individual managers are paid a bonus only when net favourable variances are allocated to them.

The new organic cake production approach was adopted at the start of March 2009, following a decision by the new production manager. No change was made at that time to the standard costs card. The variance reports for February and March are shown below (Fav = Favourable and Adv = Adverse)

Manager responsible	Allocated variances	February variance Rs	March Variance Rs
<i>Production manager</i>			
	Material price (total for all ingredients)	25 Fav	2,100 Adv
	Material mix	0	600 Adv
	Material yield	20 Fav	400 Fav
<i>Sales Manager</i>			
	Sales price	40 Adv	7,000 Fav
	Sales contribution volume	35 adv	3,000 Fav

The production manager is upset that he seems to have lost all hope of a bonus under the new system. The sales manager thinks the new organic cakes are excellent and is very pleased with the progress made.

Hilal Cakes operate a JIT stock system and holds virtually no inventory.

Required:

- a) Assess the performance of the production manager and the sales manager and indicate whether the current bonus scheme is fair to those concerned.

In April 2009 the following data applied:

Standard cost card for one cake (not adjusted for the organic ingredient change)

Ingredients	Kg	Rs
Flour	0.10	0.12 per kg

Eggs	0.10	0.70 per kg
Butter	0.10	1.70 per kg
Sugar	0.10	0.50 per kg
Total input	0.40	
Normal loss (10%)	(0.04)	
Standard weight of a cake	0.36	
Standard sales price of a cake		0.85
Standard contribution per cake after all variable costs		0.35

The budget for production and sales in April was 50,000 cakes. Actual production and sales was 60,000 cakes in the month, during which the following occurred:

Ingredients used	Kg	Rs
Flour	5,700	Rs 741
Eggs	6,600	Rs 5,610
Butter	6,600	Rs 11,880
Sugar	4,578	Rs 2,747
Total input	23,478	Rs 20,978
Actual loss	(1,878)	
Actual output of cake mixture	21,600	
Actual sales price of cake		Rs 0.99

All cakes produced must weigh 0.36 kg as this is what is advertised.

Required:

- b) Calculate the material price, mix and yield variances and the sales price and sales contribution volume variances for April. You are not required to make any comment on the performance of the managers. (8+12=20 Marks)**

Answer:-

a) Production manager

Assessing the performance of the two managers is difficult in this situation. In a traditional sense the production manager has seriously over spent in March following the move to organic ingredients. He has a net adverse variance against his department of Rs 2,300 in one month. No adjustment to the standards has been made to allow for the change to organic.

The manager has not only bought organically he has also changed the mix, increasing the input proportion of the more expensive ingredients. This may have contributed to the increased sales of cakes.

However, the decision to go organic has seen the sales of the business improve. We are told that the taste of the cakes should be better and that customers could perceive a health benefit. However, the production manager is allocated none of the favourable sales variances that result. If we assume that the improved sales are entirely as a result of the production manager's decision to change the ingredients then the overall net favourable variance is Rs 7,700.

The production manager did appear to be operating within the original standard in February, indicating a well performing department. Indeed he will have earned a small bonus in that month.

Sales manager

A change to organic idea would need to be 'sold' to customers. It would presumably require a change of marketing and proper communication to customers. The sales manager would probably feel he has done a good job in March. It is debatable, however, whether he is entirely responsible for all of the favourable variances.

The move to organic certainly helped the sales manager as in February he seems to have failed to meet his targets.

Bonus scheme

The problem here is that the variances have to be allocated to one individual. The good sales variances have been allocated to the sales manager when in truth the production manager's decision to go organic appears to have been a good one and the driver of the business success. Responsibility accounting systems struggle to cope with 'joint' success stories, refuting in general a collective responsibility.

Under the current standards the production manager has seemingly no chance to make a bonus. The main problems appear to be the out-of-date standards and the fact that all sales variances are allocated to the sales manager, despite the root cause of the improved performance being at least in part the production manager's decision to go organic. The system does not appear fair.

General comments

It would appear that some sharing of the total variances is appropriate. This would be an inexact science and some negotiation would be needed.

One problem seems to be that the original standards were not changed following the decision to go organic. In this sense the variances reported are not really 'fair