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Profitability Analysis – Product Wise/ Segment Wise/ Customer Wise

Question 1

"Balanced score card and performance measurement system endeavours to create a blend of strategic measures, outcomes and drive measures and internal and external measures". Discuss the statement and explain the major components of a balanced score card.

(4 Marks)(May, 2005)

Answer

The balanced score card translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for implementing its strategy. The balanced score card does not focus solely on achieving financial objectives. It is an approach, which provides information to management to assist in strategic policy formulation and achievement. It emphasizes the need to provide the user with a set of information, which addresses all relevant areas of performance in an objective and unbiased manner. As a management tool it helps companies to assess overall performance, improve operational processes and enables management to develop better plans for improvements.

Major components of a balanced scorecard - The components of balanced score cards varies form business to business. A well designed balanced scorecard combines financial measures of post performance with measures of firm's drivers of future performance. The specific objectives and measures of an organization-balanced scorecard can be derived from the firm's vision and strategy. Generally, balanced score card has the following four perspectives from which a company's activity can be evaluated.

(i) *Financial perspective:* Financial perspective measures the results that the organization delivers to its stakeholders. The measures are: operating income, revenue growth, revenues from new products, gross margin percentage, cost reduction in key areas, economic value added, return on investment.

(ii) *Customer perspective:* The customer perspective considers the business through the eyes of customers, measuring and rejecting upon customer satisfaction.

The measures are: - market share. customer satisfaction, customer retention percentage, time taken to fulfil customer's requests.

(iii) *Internal business perspective:* The internal perspective focuses attention on the performance of the key internal processes, which drive the business such as innovative process, operation process and post-sales services.

(iv) *Learning & growth perspective*: The measure are:- employee education & skills levels, employee turnover ratio, information system availability, percentage of employee suggestion implemented etc.

Question 2

Kitchen King Company makes a high-end kitchen range hood 'Maharaja'. The company presents the data for the year 2003 and 2004:

		2003	*2004*
1.	*Units or maharaja produced and sold*	*40,000*	*42,000*
2.	*Selling Price per unit in ₹.*	*1,000*	*1,100*
3.	*Total Direct Material (Square feet)*	*1,20,000*	*1,23,000*
4.	*Direct material cost per square feet in ₹.*	*100*	*110*
5.	*Manufacturing Capacity (in units)*	*50,000*	*50,000*
6.	*Total Conversion cost in ₹.*	*1,00,00,000*	*1,10,00,000*
7.	*Conversion cost per unit of capacity (6)/(5)*	*200*	*220*
8.	*Selling and customer service capacity*	*300 customer*	*290 customer*
9.	*Total selling and customer service cost in ₹.*	*72,00,000*	*72,50,000*
10.	*Cost per customer of selling and customer service capacity (9)/(8)*	*24,000*	*25,000*

Kitchen King produces no defective units, but it reduces direct material used per unit in 2004. Conversion cost in each year depends on production capacity defined in terms of Maharaja units that can be produced. Selling and Customer service cost depends on the number of customers that the selling and service functions are designed to support. Kitchen King has 230 customers in 2003 and 250 customers in 2004.

You are required

1. *Describe briefly key elements that would include in Kitchen King's Balance Score Card.*
2. *Calculate the Growth, Price-recovery and productivity component that explain the change in operating income from 2003 to 2004.* *(18 Marks)(Nov., 2005)*

Answer

Kitchen King's Score card should describe its product differentiation strategy. The key points that should be included in its balance score card are

- Financial Perspective – Increase in operating income by charging higher margins on Maharaja.
- Customer Perspective – Market share in high-end kitchen range market and customer satisfaction.
- Internal business Perspectives: Manufacturing quality, order delivery time, on time delivery and new product feature added.
- Learning and Growth Perspective: Development time for designing new end product and improvement in manufacturing process.

Operative Income:

	(Amount in 000 ₹.)	
	2003	2004
Revenue (40000×1000: 42000×1100)	40000	46200
Direct Material	12000	13530
Conversion cost	10000	11000
Selling and Customer service	7200	7250
Total cost	29200	31780
Operative Income	10800	14420

Change in operating Income 36, 20,000 (F)

A. Growth Component

(a) Revenue effect = Output Price in 2003{Actual units sold in 04 – Actual units sold in 03}

= ₹1, 000 (42,000 units – 40,000 units) = ₹20, 00,000 (F)

(b) The cost effect = Input price in 2003{Actual units of input to produce 2003 output less Actual units of input which would have been used to produce year 2004 output on the basis of 2003}

(i) Direct Material = ₹100 [1, 20,000sqft – 1, 20,000sqft × $\frac{42,000\text{units}}{40,000\text{units}}$]

= ₹ 6, 00,000 (A)

(ii) Conversion cost and selling and customer service will not change since adequate capacity exists in 2003 to support 2004 output and customers. Hence variance

Conversion cost = 200(50000 – 50000) = 0

S & Customer Service = 25000 (300 – 300) = 0

Increase in operating effect of Growth component is ₹14, 00,000 (F)

B Price recovery Component:

(i) Revenue effect = Actual output in 2004 [Selling price per unit in 2004 less Selling price per unit in 2003]

= 42,000units (₹1, 100 – ₹1, 000) = ₹42, 00,000 (F)

(ii) Cost effect = Unit of input based on 2003 actual that would have been used to produce 2004 output {Input prices per unit in 2003 less Input prices per unit in 2004}

(a) Direct material = 1, 26,000sqft (₹100/sqft – ₹110/sqft)=₹12, 60,000 (A)

(b) Conversion Cost = 50,000 units (₹200/unit –₹220/unit)
= ₹10, 00,000(A)

(c) S & Custr Service = 300 customers (₹24, 000 –₹25,000)
= ₹3,00,000 (A) = ₹ 25, 60,000 (A)

Increase in Operating income due to Price Recovery is ₹16, 40,000 (F) {₹42, 00,000 – ₹25, 60,000}

C Productivity Component

Productivity component = Input Prices in 04{Actual units of input which would have been used to produce year 2004 output on the basis of 2003 actual less Actual Input}

(i) Direct Material: ₹110/sqft (1, 26,000 units – 1, 23,000 units) = ₹3, 30,000(F)

(ii) Conversion Cost: ₹200/unit (50,000 units – 50,000 units) = 0

(iii) Selling & Customer = ₹25, 000 (300 customers – 290 customers) = ₹2,50,000 (F)

= ₹ 5,80,000 (F)

The change in operating income from 2003 to 2004 is analysed as follows:

					(Amount in 000 ₹.)
	2003	*Growth component*	*Price recovery*	*Cost effect of productivity component*	*2004*
Revenue	40000	2000 (F)	4200 (F)	----------	46200
Cost	29200	600 (A)	2560 (A)	580 (F)	31780
Operating Income	10800	1400(F)	1640 (F)	580 (F)	14420

Question 3

What are the elements of a Balanced Score card? Also explain how it can be used as a Financial Planning model. *(4 Marks)(May, 2006)*

Answer

The elements of a balanced score card are:

(i) Financial perspective

(ii) Customer perspective

(iii) Internal business process perspective

(iv) Learning and growth perspective.

The objective of the balanced score card is to provide a comprehensive framework for translating the company's strategic objectives into a coherent set of performance measures. It emphasizes the use of financial and non-financial measures as part of the programme to achieve future financial performance. It helps in planning, setting targets and aligning strategic initiatives.

To evaluate the success of the implementation of the strategy, the company can assess the change in the operating income by comparing the targeted operating income with the actual operating income. The change in the operating income may arise due to growth factor, change in the price of inputs and outputs and productivity factor. The company is said to be successful in implementation of strategy only if the change in the operating income closely aligns with that strategy.

Question 4

Explain briefly the major components of a balanced score card. *(4 Marks) (May, 2007)*

Answer

An ideal Balanced score card combines financial measures of past performance with measures of the firm's drivers of future performance. The following perspectives are evaluated:

(i) Customer perspective – Measures of price / delivery / quality / support.

(ii) Internal perspective – Measures of efficiency / sales penetration and new product introduction.

(iii) Innovation and learning perspective – Measures of technology / cost leadership.

(iv) Financial perspective – Sales / Cost of sales / Return on capital employed etc.

Question 5

"In many organisations, initiatives to introduce balanced score card failed because efforts were made to negotiate targets rather than to build consensus."

Required:

Elucidate the above statement. *(8 Marks) (Nov., 2007)*

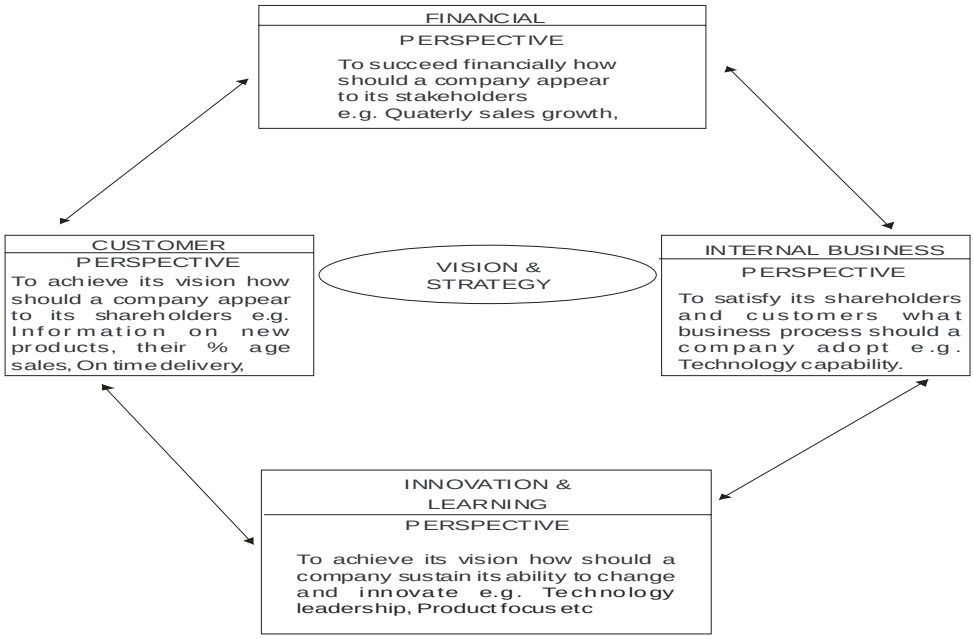
Answer

Balanced score card is a set of financial and non-financial measures relating to a company's critical success factors. It is an approach which provides information to management to assist in strategy implementation. Therefore, the components to be included in the balanced score card must flow from strategy. The targets should be measurable and must flow from strategy and corporate plan of the company. It is necessary that managers should agree to the components and targets because in absence of a consensus, managers may not commit to the targets established by the top management / the board of directors. Moreover, the functions are interdependent and results in one functional area/perspective (e.g. innovation and learning) have direct bearing on the results in other functional area / perspective (e.g. customer perspective). Therefore, it is not sufficient that individual managers agree to their targets. Successful implementation requires that the top management builds an overall consensus on the components and targets of the balanced score card. Negotiation undermines the fundamental principle that the components and targets should flow from strategy. As a result, an approach to establish targets through negotiation defeats the very purpose of balanced score card.

Question 6

Explain the features of a balanced scored card. *(4 Marks)(May, 2012)*

Answer



A Balanced score card includes information, both financial and non-financial elements under 4 perspectives with a long term goal of improved financial performance.

Perspective	Parameters
Customer	Sales % Delivery time New product information
Internal business perspective	Business process to be adopted Technological capability Internal efficiency parameters
Innovation/ learning perspective	How a company should sustain its ability to change and innovate Technology leadership Product focus Kaizen approach
Financial perspective	Sales growth How the company should appear to its shareholders Operating income by segments

Question 7

What do you mean by DPP? What are its benefits? *(4 Marks)*

Answer

Direct Product Profitability (DPP) is 'Used primarily within the retail sector, and involves the attribution of both the purchase price and other indirect costs *such as distribution, warehousing, retailing* to each product line. Thus a net profit, as opposed to a gross profit, can be identified for each product. The cost attribution process utilises a variety of measures *such as warehousing space, transport time* to reflect the resource consumption of individual products.'

Benefits of Direct Product Profitability:

(i) Better Cost Analysis - Cost *per product* is analysed to know the profitability of a particular product.

(ii) Better Pricing Decision- It helps in price determination as desired margin can be added with the actual cost.

(iii) Better Management of Store and Warehouse Space- Space Cost and Benefit from a product can be analysed and it helps in management of store and warehouse in profitable way.

(iv) The Rationalisation of Product Ranges etc.

Question 8

Y Limited is a manufacturer of Cardboard boxes. An analysis of its operating income between 2012 and 2013 shows the following:

	Income Statement (amount in 2012)	*Revenue & Cost effect of Growth component in 2013*	*Revenue & Cost effect of Price recovery component in 2013*	*Cost effect of productivity component in 2013*	*Income Statement (amount in 2013)*
Revenue (₹)	*40,00,000*	*2,00,000(F)*	*4,20,000(F)*	*-*	*46,20,000*
Cost (₹)	*29,20,000*	*60,000 (A)*	*2,56,000(A)*	*58,000(F)*	*31,78,000*
Operating Income (₹)	*10,80,000*	*1,40,000(F)*	*1,64,000(F)*	*58,000(F)*	*14,42,000*

Y limited sold 4,00,000 boxes and 4,20,000 boxes in 2012 and 2013 respectively. During 2013 the market for cardboard boxes grew 3% in terms of number of units and all other changes are due to company's differentiation strategy and productivity. Compute how much of the change in operating income from 2012 to 2013 is due to the industry market size factor, productivity and product differentiation and also reconcile the profit of both years due to these factors.

(5 Marks) (May, 2014)

Answer

Reconciliation of Operating Income

Particulars	Amount (₹)
Operating Income in 2012	10,80,000
Add: Change Due to Industry Market Size Factor (W.N.-1)	84,000
Changes Due to Productivity (W.N.-2)	58,000
Changes Due to Product Differentiation (W.N.-3)	2,20,000
Operating Income in 2013	14,42,000

Workings:

Total Increase in Sale of Cardboard Boxes 20,000 Boxes (4,20,000 Boxes – 4,00,000 Boxes). Out of this increase in Sales of 20,000 Boxes,12,000 Boxes (3% of 4,00,000) is due to *growth in market size*, and the remaining 8,000 Boxes (20,000 Boxes – 12,000 Boxes) are due to an increase in *market share* .

W.N.1 Effect of the Industry Market Size Factor *on operating income*:

= Revenue and Cost Effect of Growth Component in 2013 ×

$$\frac{\text{Increase in Sales Unit Due to Market Growth}}{\text{Total Growth in Sales Unit (from 2012 to 2013)}} = ₹\ 1,40,000 \times \frac{12,000\text{Boxes}}{20,000\text{Boxes}}$$

= ₹ 84,000 (F)

W.N.2. Effect of Productivity *on operating income*:

= Cost Effect of Productivity Component in 2013

= ₹58,000 (F)

W.N.3 Effect of Product Differentiation *on operating income*:

Particulars	Amount (₹)
Increase in the Selling Price (Revenue Effect of the Price Recovery Component)	4,20,000 (F)
Increase in Prices of Inputs (Cost Effect of the Price Recovery Component)	2,56,000 (A)
Growth in Market Share Due to Product Differentiation* $\left(₹\ 1,40,000 \times \frac{8,000\ \text{Boxes}}{20,000\ \text{Boxes}}\right)$	56,000 (F)
Total	2,20,000 (F)

* Revenue and Cost Effect of Growth Component in 2013 ×

$$\frac{\text{Increase in Sales Unit Due to Product Differentiation}}{\text{Total Growth in Sales Unit (from 2012 to 2013)}}$$

Question 9

Discuss the benefits of Customer Profitability Analysis. *(4 Marks) (May, 2014)*

Answer

Benefits of Customer Profitability Analysis

(i) It helps the supplier to identify which customers are eroding overall profitability and which customers are contributing to it.

(ii) It can help to provide a basis for constructive dialogue between buyer and seller to improve margins.

(iii) It enhances decision making related to customers.

(iv) It helps in effective cost reporting, communication and information.

(v) It helps to find out the value and profitability of each customer segment.

Question 10

ABC Ltd. has supermarkets located in most towns and cities. Over the last few years, profits have fallen. ABC Ltd. has recognized that customer care has been paid insufficient attention. ABC Ltd. has now realized the importance of the customer experience at its supermarkets.

ABC Ltd. has introduced a loyalty card scheme that rewards customers with discount vouchers based on their spend and buying patterns at supermarkets in an attempt to earn the loyalty of its customers.

The management of ABC Ltd. is considering the introduction of a Balanced Scorecard approach to manage the performance of its stores.

Required:

Recommend an objective and a suitable performance measure for each of three non-financial perspectives of a Balanced Scorecard that ABC Ltd. could use to support its new strategy of improving the customer experience. You should state three perspectives, an objective and a performance measure for each one of the three perspectives. *(5 Marks) (November, 2014)*

Answer

Non- Financial Perspective	Objective	Performance Measure
Customer Perspective	Increase the customer loyalty. *Or* Retaining the existing customers.	Percentage of customers using loyalty cards. *Or* No. of discount vouchers redeemed.
Internal Business Perspectives	For customers to pay for goods in a reasonable time. *Or* Paying proper attention to the customers and their product enquiries. *Or* Provide necessary support to the existing loyal customers.	Time spent by customers in queuing to pay for products at a check out. *Or* Time spent by customers care executives in handling customers queries. *Or* No. of times home delivery made.
Learning & Growth Perspectives	To have qualified staffs able to meet the needs of the customer. *Or* Adding new products for new segments.	No. of staff training days. *Or* No. of schemes launched.