Paper 15 – Strategic Cost Management – Decision Making

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Strategic Cost Management – Decision Making

Full Marks : 100   **Time allowed: 3 hours**

Section - A

1. Answer the following. Each question carries 2 marks.   [10×2= 20]

   (i) Company 'B' uses throughput accounting system. The details of product X per unit are as follows:

Selling price	₹ 50
Material cost	₹ 16
Conversion costs	₹ 20
Time on bottleneck resource	8 minutes

   The throughput return per hour for product X is:

   (a) ₹ 105

   (b) ₹ 225

   (c) ₹ 255

   (d) ₹ 375

   (ii) Back flush costing is most likely to be used when

   (a) Management desires sequential tracking of costs

   (b) A Just-in-Time inventory philosophy has been adopted

   (c) The company carries significant amount of inventory

   (d) Actual production costs are debited to work-in-progress

   (iii) Empire Hotel has a capacity of 100 single rooms and 20 double rooms. Average occupancy is 70% for 365 days of the year. The rent for a double room is kept at 130% of a single room. The total room occupancy days in a year in terms of single room is

   (a) 32193

   (b) 30660

   (c) 31660

   (d) 30993

(iv) Which of the following is correct in the context of network analysis?

    (a) There can be one or more activities without a predecessor in a network.

    (b) Where two activities have the same start and end events, the end event of one activity is numbered differently and then connected by a dummy to the original start event.

    (c) When crashing is carried out, the non-critical paths have to remain non critical.

    (d) If the critical path is longer than the other paths, the project may be completed by using a path having a shorter duration.

(v) A Ltd. manufactures 4 products A,B,C & D with sales value mix of 33 1/3%, 41 2/3%, 16 2/3% & 8 1/3% and variable cost of 60%, 68%, 80% & 40% of selling price respectively. Budgeted sale value is ₹ 60,000. Overall P/V ratio is

    (a) 40%,

    (b) 35%,

    (c) 28%

    (d) 32%

(vi) Which of the following statements is correct?

    (a) Standard costing facilitates the integration of accounts so that reconciliation between cost accounts and financial accounts may be eliminated.

    (b) Standard costs are planned costs determined on a scientific basis and they are based upon certain assumed conditions of efficiency and other factors.

    (c) Standard costing is defined as the preparation and use of standard costs, their comparison with actual cost and the measurement and analysis of variances to their cause and points of incidence.

    (d) All of the above.

(vii) Efficiency Ratio is

    (a) Available working days/ Budgeted working days x100

    (b) Budgeted hours / Maximum hours in budgeted period x 100

    (c) Standard hours / Actual hours x 100

    (d) None of the above

(viii) Linear Programming is a technique for

    (a) Optimization

    (b) Minimization

    (c) Maximization

    (d) None of These

(ix) Hungarian method is a way to solve problem related to:

(a) Transportation

(b) Assignment

(c) Learning Curve

(d) None of These

(x) A company produces two joint products, P and V. In a year, further processing costs beyond split-off point spent were ₹ 8,000 and ₹ 12,000 for 800 units of P and 400 units of V respectively. P sells at ₹ 25 and V sells at ₹ 50 per unit. A sum of ₹ 9,000 of joint cost were allocated to product P based on the net realization method. What was the total joint cost for the year?

(a) ₹ 20,000

(b) ₹ 10,000

(c) ₹ 15,000

(d) None of these

Answer:

(i) (c) Explanation:

Return per minute = (Selling price - Material cost)/Time on bottleneck resource =(50-16)/8 = 4.25; Return per hour = 4.25 × 60 = 255

(ii) (b) A Just-in-Time inventory philosophy has been adopted

(iii) (a) Explanation:

1 double room = 1.3 single in terms of revenue.

Capacity = 100 + 1.3 × 20 = 100 + 26 = 126 equivalent single rooms.

Total Room Occupancy p.a. = 126 × 365 × 70% = 32193 days.

Note: This can be arrived at by other ways also, taking for example 70% of only single rooms and then double rooms, etc.

(iv) (a) Explanation:

More than 1 activity can begin at the first node, say 1 – 2, 1 – 3, 1 – 4, etc. Each of these will have no predecessor.

(v) (b)

Product	A (₹)	B (₹)	C (₹)	D (₹)	Total (₹)
Sale value	20,000	25,000	10,000	5,000	60,000
Variable cost	12,000	17,000	8,000	2,000	39,000
Contribution					21,000

P/V ratio = 21000/60000 × 100 = 35%

(vi) (d) All of the above.

(vii) (c) Standard hours / Actual hours x 100

(viii) (a) Optimization

(ix) (b) Assignment

(x) (c)

Products	P	V	Total (₹)
Units	800	400	
S.P. (₹)	25	50	
Sales (₹)	20,000	20,000	
Further Costs (₹)	8,000	12,000	
NRV (₹)	12,000	8,000	20,000

Joint cost to be allocated in 3: 2

Total Joint cost = 9000 /3×5 =15000

Section – B

Answer any five questions from question nos. 2 to 8. Each question carries 16 marks.

2. (a) Explain the concept of Life Cycle Costing.   8

   (b) The Learning curve as a management accounting has now become or going to become an accepted tool in industry, for its applications are almost unlimited. When it is used correctly, it can lead to increased business and higher profits; When used without proper knowledge, it can lead to lost business and bankruptcy. Illustrate the use of learning curve for calculating the expected average units cost of making (a) 4 machines and (b) 8 machines by using the data below:

   Direct labour need to make first machine   =   1000 hrs.

   Learning curve   =   90%

   Direct labour cost   =   ₹ 15 per hour.

   Direct material cost   =   ₹ 1,50,000

   Fixed cost for either size orders   =   ₹ 60,000.   8

Answer:

(a) Life Cycle Costing

CIMA defines Life-Cycle Costing as ' Maintenance of physical asset cost records over entire asset lives, so that decisions concerning the acquisition, use or disposal of assets can be made in a way that achieves the optimum asset usage at the lowest possible cost to the

entity. The term may be applied to the profiling of cost over a product's life, including the pre-production stage (*terotechnology*), and to both company and industry life cycles'.

Many a product are observed to possess a distinctive life cycle comprising six clearly defined phases comprising:

(i)   Development

(ii)   Introduction

(iii)   Growth

(iv)   Maturity

(v)   Decline

(vi)   Extinction

Each phase has its own characteristics. Older, long-established products eventually become less popular, while in contrast, the demand for new, more modern goods usually increases quite rapidly after they are launched. The time line commencing from the innovation of a new product and ending with its degeneration into a common product and the eventual extinction is termed as the life cycle of a product.

Life Cycle Cost (LCC) may, thus, be stated as "The total cost throughout the life of an asset including planning, design, acquisition and support costs and any other costs directly attributable to owning or using the asset". Life Cycle Cost (LCC) of any item represents costs of its acquisition, operation, maintenance and disposal.

Production Costs are accounted and recognized by the routine accounting system. However non-production costs like R&D, design, marketing, distribution, customer service, etc. are less visible on a product-by-product basis. Product Life Cycle Costing focuses on recognizing both production and non-production costs.

Product life cycle thinking can promote long-term rewarding in contrast to short-term profitability rewarding. It provides an overall framework for considering total incremental costs over the entire life span of a product, which in turn facilitates analysis of parts of the whole where cost effectiveness might be improved.

Life Cycle Budgeting, i.e. Life Cycle Costing with Target Costing principles, facilitates scope for cost reduction at the design stage itself. Since costs are avoided before they are committed or locked in, the Company is benefited.

Life Cycle Costing aids decision makers in considering all present and future costs related to new construction, renovation, equipment replacement, or any other project that involves upfront and ongoing expenditure thereby covering the period from 'Cradle to Grave'.

The concept of Life-Cycle Costing may be explored in relation to a product, project or an industry as such.

(b) Statement showing computation of cost of making 4 machines & 8 machines:

No. of machines	Average Time	Lobour Cost	Material	Fixed Cost	Total
	Hours	(₹)	(₹)	(₹)	(₹)
1	1000	15000	150000	60000	225000
2	900	13500	150000	30000	193500
4	810	12150	150000	15000	177150
8	729	10935	150000	7500	168435

Average cost of making 4 machines ₹ 1,77,150

Average cost of making 8 machines ₹ 1,68,435

3. **(a)** Amit Co. manufactures and sells 15,000 units of a product. The full cost per unit is ₹ 200. The Company has fixed its price so as to earn a 20% return on an Investment of ₹ 18,00,000.

Required:

(i) Calculate the selling price per unit from the above. Also, calculate the mark-up % on the full cost per unit.

(ii) If the selling price as calculated above represents a mark-up % of 40% on variable cost per unit, calculate the variable cost per unit.

(iii) Calculate the Company's contribution if it had increased the selling price to ₹ 230. At this price, the Company would have sold 13,500 units. Should the Company have increased the selling price to ₹ 230?

(iv) In response to competitive pressures, the Company must reduce the price to ₹ 210 next years, in order to achieve sales of 15,000 units. The Company also plans to reduce its investment to ₹ 16,50,000. If a 20% Return on Investment should be maintained, what is the Target Cost per unit for the next year?   3×4=12

(b) What is Target Cost? How would you determine it?   2+2=4

Answer:

(a) Target costing of the product

(i) Target sale Price per unit = Full Cost + Target profit

= ₹ 200+(18,00,000 × 20%) /15,000 units = 200 + 24 = ₹ 224

Mark up on Full Cost = (24 ÷ 200) × 100 = 12%

(ii) Sale of ₹ 224 = VC + 40% there on i.e. 140% of VC

Hence, Variable Cost = 224 ÷ 140% = ₹ 160

(iii) Revised Sale Price = ₹ 230

Contribution per unit = 230-160 = ₹ 70

Total Contribution = 70 ×13500 units = ₹ 9,45,000

Existing Contribution = (224 –160) × 15,000 units = ₹ 9,60,000

As the contribution comes down by ₹ 15,000 the revision in the sale price is not recommended.

(iv)   Sale Price for next year = ₹ 210

Target Profit for next year = (16,50,000 × 20%) ÷ 15000 units = ₹ 22

Target Cost = (SP – Profit) = (210 – 22) ₹ 188

(b) Target Cost

Target Cost is the cost at which a proposed product with specified functionality and quality must be produced to generate a desired level of profitability at its anticipated selling price. Target cost is Target selling price less the required profit margin

The target selling price is the price that is dictated by competition in case there are comparable products, or the perceived value that a customer will pay for the product in case there is no competition.

The desired profit level is fixed by the seller. The difference between the selling price and the profit margin represents the target cost to be achieved by design or cost reduction or by economies of scale or by other means.

Determination of Target Cost

The market requirement is identified regarding design, utility, need for the product. Target selling price is determined based on customer expectation and sales forecast. Target production volume is set based on price volume relationship. Target profit margin is established based on the company's long term profit objectives, projected volumes, course of action, etc.

The target cost or allowable cost is determined as the target selling price minus the target profit margin.

4. **(a) The Budgeted overheads and Cost driver volumes of XYZ are as follows:**

Cost pool	Budgeted Overheads (₹)	Cost Driver	Budgeted Volume
Material Procurement	5,80,000	No. of orders	1,100
Material Handling	2,50,000	No. of movements	680
Set-up	4,15,000	No. of set-ups	520
Maintenance	9,70,000	Maintenance hours	8,400
Quality Control	1,76,000	No. of inspection	900
Machinery	7,20,000	No. of M/c hours	24,000

The company has produced a batch of 2,600 components of AX-15. Its material cost was ₹1,30,000 and labour cost ₹2,45,000. The usage activities of the said batch are as follows: Material orders-26, Maintenance hours-690, Material movements-18, Inspection-28, Set ups-25 and M/c hours-1,800.

Calculate Cost Driver Rates that are used for tracing appropriate amount of overheads to the said batch and ascertain the cost of batch of components, using Activity Based Costing.

(b) Krish of India presently operates its plant at 80% of the normal capacity to manufacture a product exclusively to meet the demand of Government of India under a rate contract. He supplies the product for ₹ 4,00,000 and earns a profit margin of 20% on sales realizations. Direct Cost per unit is constant.

The indirect costs as per his budget projection are:

Indirect Costs	20,000 units (80% capacity) (₹)	22,500 units (90% capacity) (₹)	25,000 units (100% capacity) (₹)
Variable	80,000	90,000	1,00,000
Semi-Variable	40,000	42,500	45,000
Fixed	80,000	80,000	80,000

He received an export order for the product equal to 20% of its present operations. Additional packing charges on this order will be ₹ 1,000.

As a Management Accountant, calculate the differential costs and the price to be quoted for the export order so as to give his a profit margin of 10% on the export price.   8

Answer:

(a) Computation of Cost Driver Rates

Cost pool	Budgeted Overheads (₹)	Cost Driver	Budgeted Volume	Cost Driver Rate
1	2	3	4	5 (5 = 2÷3)
Material Procurement	5,80,000	No. of orders	1,100	527.27
Material Handling	2,50,000	No. of movements	680	367.65
Set-up	4,15,000	No. of set-ups	520	798.08
Maintenance	9,70,000	Maintenance hours	8,400	115.48
Quality Control	1,76,000	No. of inspection	900	195.56
Machinery	7,20,000	No. of M/c hours	24,000	30.00

Computation of Batch Cost of 2,600 units of AX-15

Serial	Element	Working	Amount (₹)	Amount (₹)
1	Material Cost			1,30,000
2	Labour Cost			2,45,000
3	Prime Cost			3,75,000
4	Overheads			
	Material Procurement	26 x 527.27	13,709	
	Material Handling	18 x 367.65	6,618	

	Set-up	25 x 798.08	19,952	
	Maintenance	690 x 115.48	79,681	
	Quality Control	28 x 195.56	5,476	
	Machinery	1800 x 30.00	54,000	
	Sub Total			1,79,436
5	Total			5,54,436

(b) Computation of Direct Cost:

Element	Workings	₹ Per unit
Selling Price	₹ 4,00,000 ÷ 20,000 units	20
Less: Profit Margin	@ 20% on selling price i.e. on ₹ 20	4
Total Cost		16
Less: Indirect Costs	(80,000 + 40,000 + 80,000) ÷ 20,000 units	10
Direct Cost		6

Statement showing Differential Cost for production of additional 4,000 units:

Element / Production Units	Present 20,000 (₹)	Proposed 24,000 (₹)	Differential 4,000 (₹)
Direct Cost @ ₹ 6 per unit	1,20,000	1,44,000	24,000
Indirect Costs:			
Variable Cost @ ₹ 4 per unit	80,000	96,000	16,000
Semi-Variable (@ ₹1 per unit for the additional units)	40,000	44,000	4,000
Fixed	80,000	81,000	1,000
Total Costs	3,20,000	3,65,000	45,000

Quotation for the Export Order (with a desired profit of 10% on Export Price)

Differential Cost	45,000
Add: Profit (10% of Export Price or 1/9 of Cost)	5,000
Export Price to be quoted	50,000

Export Price to be quoted per unit = ₹ 50,000 ÷ 4,000 units = ₹ 12.50.

5. (a) Seema Ltd., has prepared the following budget for the year:

Particulars	Activity Level	
	60%	80%
Raw Materials (₹)	30,00,000	40,00,000
Direct Wages (₹)	18,00,000	24,00,000
Factory Overheads (₹)	32,00,000	36,00,000
Total (₹)	80,00,000	1,00,00,000

The policy of the company is to charge 25% on variable costs to cover profit. Raw material is in short supply and the company wants to utilize its available supply of raw materials in an optimum manner. Planned operating capacity is 80%.

The company has to execute a job, as per details given below:

Raw Materials (₹) :   40,000

Direct Wages (₹) :   30,000

You are required to quote the price of the job, in accordance with the policy of the company.   **10**

(b)   What are the advantages of Inter-firm comparison?   **6**

Answer:

(a)   Segregation of Factory Overheads into Fixed and Variables:

Activity Level	Factory Overheads (₹)
80%	36,00,000
60%	32,00,000
Difference of 20%	4,00,000
Variability for 1%	20,000(V)

At 80% of the activity, the variable factory overheads would have been 80 × 20,000 = ₹16,00,000 Total Factory Overheads at this level are ₹ 36,00,000.

Hence, the Fixed Overheads would be ₹ 36,00,000 – ₹16,00,000 i.e., ₹ 20,00,000.

Variable Overheads as % of Direct Wages = 16,00,000 / 24,00,000 × 100 = 66.67%.

Variable Costs at 80% of the Activity

Raw Materials	₹ 40,00,000
Direct Wages	₹ 24,00,000
Variable Overheads	₹ 16,00,000
Total Variable Cost	₹ 80,00,000

At 80% of the activity, Profit = 25% of VC = 25% of 80,00,000 = ₹ 20,00,000

Contribution = Fixed Costs + Profit = 20,00,000 + 20,00,000 = ₹ 40,00,000.

Raw Materials are in short supply and hence are the constraint.

Ratio of Contribution to Raw Material = 40,00,000 ÷ 40,00,000 = 100%.

Price Quotation

(₹)

Raw Materials	40,000
Direct Wages	30,000
Variable Overheads @ 66.67% of Direct Wages	20,000
Contribution @ 100% of Raw Materials	40,000
Total	1,30,000

(b)   The advantages of Inter-firm Comparison are as below:

(i)   Inter-firm Comparison makes the management of the organisation aware of strengths and weakness in relation to the other organisations in same industry.

(ii)   As only important items are reported to the Management time and efforts are not wasted.

(iii) The management is able to keep up-to-data information of the trends and ratios and it becomes easier for them to take the necessary steps for improvement.

(iv)   It develops cost consciousness among the members of the industry.

(v)   Information about the organisation is made available freely without the fear of disclosure of confidential data to the outside market or the public.

(vi)   Specialized knowledge and experience of professionally run and successful organisations are made available to smaller units who can take the advantages.

(vii) The industry as a whole benefits from the process due to increased productivity, standardization of products, elimination of unfair comparison and the trade practices.

(viii) Reliable and collective data enhance the organisation's ability to deal with various authorities and Government bodies.

(ix)   Inter firm comparison assists in a big way in identifying industry sickness and gives a timely warning so that effective remedial steps can be taken to save the organisation.

6. (a) DM is a denim brand specializing in the manufacture and sale of hand-stitched jeans trousers. DM manufactured and sold 10,000 pairs of jeans during a period. Information relating to the direct labour cost and production time per unit is as follows:

	Actual Hours Per Unit	Standard Hours Per Unit	Actual Rate Per Hour	Standard Rate Per Hour
Direct Labour	0.65	0.60	₹120	₹100

Note: 0.65 hours per unit of actual time includes the idle time.

During the period, 800 hours of idle time was incurred. In order to motivate and retain experienced workers, DM has devised a policy of paying workers the full hourly rate in case of any idle time.

Required:

(i)   Idle time Variance

(ii)   Labour Efficiency variance   3+5=8

(b) What are the advantages of Standard Costing?   8

Answer:

(a)

(i)   Idle Time Variance:

Idle time variance = number of idle hours × standard rate

= 800 hours × ₹ 100

= ₹ 80,000 (A)

(ii) Labour Efficiency Variance:

Total Hours = 10,000 units × 0.65 hours per unit

= 6,500 hours.

Active Hours = 6,500 hours - 800 idle hours

= 5,700 hours.

Standard Cost of Active Hours = Active Hours x Standard Rate

= 5,700 hours x ₹ 100 per hour

= ₹ 5, 70,000

Standard Hours = 10,000 units x 0.60 hours per unit

= 6,000 hours.

Standard Cost = Standard Hours x Standard Rate

= 6,000 hours x ₹ 100 per hour

= ₹ 6, 00,000

Labour Efficiency Variance = Standard Cost - Standard Cost of Active Hours

= 6, 00,000 - 5, 70,000

= ₹ 30,000 (F)

(b) The advantages derived from a system of standard costing are stated below:

(i) Standard Costing system establishes yard-stick against which the efficiency of actual performance is measured.

(ii) This system increases all round efficiency and productivity.

(iii) At the very stage of setting the standards, waste of time and materials is eliminated. This assists in managerial planning for efficient operation and benefits all the divisions of the concern.

(iv) Costing procedure is simplified.

(v) Cost data is available for various management purposes like fixation of selling prices, transfer price and valuation of stocks i.e. work-in-progress and finished stock and determining idle capacity.

(vi) Standard costing is a planning exercise - in helps in budgetary controls.

(vii) Standard costing system facilitates the fixation of responsibility for each department or individual.

(viii) Variance analysis and reporting is based on the principles of management by exception. Variance analysis provides the ground for corrective measures to be taken in time.

(ix) When constantly reviewed, the standards provide means for achieving cost reduction.

(x) Standard costs assist in performance analysis by providing ready means for preparation of information.

(xi) Production and pricing policies may be formulated in advance before production starts. This helps in prompt decision-making.

(xii) Standard costing facilitates the integration of accounts so that reconciliation between cost accounts and financial accounts may be eliminated.

(xiii) Standard costing helps in optimizing the use of plant capacities, current assets and working capital.

7. **ABC Pvt. Ltd., which has a satisfactory preventive maintenances system in its plant has installed a new Hot Air Generator based on electricity instead of fuel oil for drying its finished products. The Hot Air Generator requires periodic shutdown maintenance. If the shutdown is scheduled yearly, the cost of maintenance will be as under:**

Maintenance Cost	Probability
₹15,000	0.3
₹20,000	0.4
₹25,000	0.3

The costs are expected to be almost linear i.e. if the shutdown is scheduled twice a year the maintenance cost will be double.

There is no previous experience regarding the time taken between breakdowns. Costs associated with breakdown will vary depending upon the periodicity of the maintenance. The probability distribution of breakdown cost is estimated as under.

Break down cost p.a.	Yearly Shut down	Half yearly shut down
₹75,000	0.2	0.5
₹80,000	0.5	0.3
₹1,00,000	0.3	0.2

Simulate the total costs – maintenance and breakdown costs – and recommend whether shutdown overhauling should be resorted to once a year or twice a year? **16**

Answer:

Assigning numbers to maintenance cost once a year basis:

Cost (₹)	Probability	Cumulative Probability	Random Numbers (R.N.)
15,000	0.30	0.30	00-29
20,000	0.40	0.70	30-69
25,000	0.30	1.00	70-99

Assigning random numbers to maintenance costs, on twice a year basis:

Cost (₹)	Probability	Cumulative Probability	Random Numbers (R.N.)
30,000	0.30	0.30	00-29
40,000	0.40	0.70	30-69
50,000	0.30	1.00	70-99

Assigning random numbers to breakdown costs when overhauling is done once a year basis:

Cost (₹)	Probability	Cumulative Probability	Random Numbers (R.N.)
75,000	0.20	0.20	00-19
80,000	0.50	0.70	20-69
1,00,000	0.30	1.00	70-99

Assigning random numbers to breakdown costs when overhauling is done twice a year basis:

Cost (₹)	Probability	Cumulative Probability	Random Numbers (R.N.)
75,000	0.50	0.50	00-49
80,000	0.30	0.80	50-79
1,00,000	0.20	1.00	80-99

Total Costs if shut down is taken once a year:

Year	R.N.	Maintenance Cost (₹)	R.N.	Breakdown Cost (₹)	Total (₹)
1	27	15,000	03	75,000	90,000
2	44	20,000	50	80,000	1,00,000
3	22	15,000	73	1,00,000	1,15,000
4	32	20,000	87	1,00,000	1,20,000
5	97	25,000	59	80,000	1,05,000
				Average :	1,06,000

Total Costs if shut down is taken twice a year:

Year	R.N.	Maintenance Cost (₹)	R.N.	Breakdown Cost (₹)	Total (₹)
1	42	40,000	54	80,000	1,20,000
2	04	30,000	65	80,000	1,10,000
3	82	50,000	49	75,000	1,25,000
4	38	40,000	03	75,000	1,15,000
5	91	50,000	56	80,000	1,30,000
				Average:	1,20,000

[Note: R.N.s. are taken from table]

Recommendation: From the above working it may be seen that shutdown maintenance/overhauling once a year will be more economical. The average annual cost will only be ₹ 1.06 lakhs as against 1.20 lakhs when shutdown is twice a year.

8. Write Short Notes on any four: **4 ×4 =16**

   (a) **Principles of Business Process Re-engineering**

   (b) **Relevant Costs**

   (c) **PRAISE Analysis**

   (d) **Vogel's Approximation Method (VAM)**

   (e) **PERT & CPM**

Answer:

(a) Principles Business Process Re-engineering (BPR)

Business Process Re-engineering (BPR) refers to the fundamental rethinking and redesign of business processes to achieve improvement in critical measures of performance such as costs, quality, efficiency, service, speed and customer satisfaction. It (BPR) is the practice of rethinking and redesigning the process to support an organization's mission and reduce costs.

The stepwise process of BPR consists of:

(i)   Creation of Vision

(ii)   Selection of Team

(iii) Analysis of the Existing Process

(iv)   Development of a New Process

(v)   Implementation of the New Process

(vi)   Evaluation

The key benefits include:

Key Benefits

(i)   Reduction in Costs and Cycle Times

(ii)   Improvement in Quality

(iii) Customer Focus

Business Process Reengineering is a strategic tool towards cost reduction as also for increased customer focus and enhanced competitive advantage.

(b) Relevant Costs

Relevant Costs are costs appropriate to aiding the making of specific management decisions (CIMA). They are estimated future costs that differ among alternatives. Similarly, relevant revenues and expected future revenues differ among alternatives. The two key aspects of relevance are:

(i) The costs and revenues must occur in future, and

(ii) They must differ among alternatives.

In decision making process, the decision maker must be aware of some pitfalls on account of various costs.

Examples are:

(i) Sunk costs - be ignored as not relevant.

(ii) Fixed Costs - if they change for the decision at hand, the changed portion only becomes relevant.

(iii) Opportunity costs - They need not be overlooked (e.g., to outsource an activity when there is no idle capacity). An opportunity cost is the cost of an opportunity foregone by not using a limited resource in its next best alternative use.

(c) PRAISE Analysis

PRAISE Analysis is a six step process of the Total Quality Management where identification of improvement opportunities and implementation of quality improvement process takes place. Six Steps are : Problem identification, Ranking, Analysis, Innovation, Solution and evaluation. These steps are represented by acronym PRAISE.

Process involves

(i) Problem identification of customer dissatisfaction

(ii) Ranking of the problems and opportunities as per priorities

(iii) Analysis of possible causes of problem, potential implications and quantification of cause and effect

(iv) Innovation by creative thinking to generate potential solutions

(v) Solution implementation by making required changes in the systems and reinforcing the same with training and documentation backup

(vi) Evaluation by monitoring the effectiveness of the actions and identify the potential for further improvements and return to step 1.

(d) Vogel's Approximation Method (VAM):

This method is preferred over the other methods because the initial basic feasible solution obtained is either optimum or very close to the optimum solution. Therefore, the amount of time required to arrive at the optimum solution is greatly reduced. Various steps of this method are summarized as under:

Step 1: Compute a penalty for each row and column in the transportation table. The penalty for a given row and column is merely the difference between the smallest cost and the next smallest cost in that particular row or column.

Step 2: Identify the row or column with the largest penalty. In this identified row or column, choose the cell which has the smallest cost and allocate the maximum possible quantity to the lowest cost cell in that row or column so as to exhaust either the supply at a particular

source or satisfy demand at a warehouse. If a tie occurs in the penalties, select that row/column which has minimum cost. If there is a tie in the minimum cost also, select that row/column which will have maximum possible assignments. It will considerably reduce computational work.

Step 3: Reduce the row supply or the column demand by the amount assigned to the cell.

Step 4: If the row supply is now zero, eliminate the row, if the column demand is now zero, eliminate the column, if both the row supply and the column demand are zero, eliminate both the row and column.

Step 5: Recompute the row and column difference for the reduced transportation table, omitting rows or columns crossed out in the preceding step.

Step 6: Repeat the above procedure until the entire supply at factories are exhausted to satisfy demand at different warehouses.

(e) PERT & CPM

PERT: Project Evaluation and Review Techniques (PERT) is a method of analysing the tasks involved in completing a given project, especially the time needed to complete each task, and to identify the minimum time needed to complete the total project. It incorporates uncertainty by making it possible to schedule a project while not knowing precisely the details and durations of all the activities. It is more of an event-oriented technique rather than start- and completion-oriented, and is used more in projects where time is the major factor rather than cost. It is applied to very large-scale, one-time, complex, non-routine infrastructure and Research and Development projects.

CPM: Critical Path Method (CPM) or Critical Path Analysis (CPA) is a project management tool that helps determination of the minimum time needed to complete a project. The CPM:

(i)   Sets out all the individual activities that make up a larger project.

(ii)   Shows the order in which activities have to be undertaken.

(iii)   Shows which of the activities can be taken up only when the other activities have been completed.

(iv)   Shows which of the activities can be undertaken simultaneously, thereby reducing the overall time taken to complete the whole project.

(v)   Pinpoints the time schedules needed for the specified resources, for example, a crane to be hired for a building site.

PERT and CPM are complementary tools. CPM employs one time estimate and one cost estimate for each activity. PERT may utilize three time estimates (optimistic, expected, and pessimistic) and no costs for each activity. Although these are distinct differences, the term PERT is applied increasingly to all critical path scheduling.